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# Pure bodies, sacred authority: a religious history of vaccine hesitancy in the United States

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Dissertation

# PURE BODIES, SACRED AUTHORITY:
# A RELIGIOUS HISTORY OF VACCINE HESITANCY
# IN THE UNITED STATES

by

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*For Aaron*

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**PURE BODIES, SACRED AUTHORITY:**

**A RELIGIOUS HISTORY OF VACCINE HESITANCY**

**IN THE UNITED STATES**

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## ABSTRACT

Since the first vaccine was invented in the late eighteenth century, vaccines revolutionized biomedical approaches to infectious disease prevention and saved hundreds of millions of lives from smallpox, influenza, measles, whooping cough, and Covid-19. Despite the undeniable success of this medical technology, vaccines have always given some people pause, and others have steadfastly rejected vaccinations for themselves and their children. Although historians and social scientists have explained many causes of vaccine hesitancy in the United States, this dissertation is the first analysis of vaccine hesitancy that treats it as a part of United States *religious* history.

Covering three hundred years of vaccine history, this dissertation charts and analyzes the religious concepts and bodily practices that informed increasing vaccine skepticism over four different historical periods, culminating in the Covid-19 era. It explains *how* vaccine skeptics crafted their arguments, worldviews, and bodily practices and *why* their skepticism was often subtly religious. Vaccine skeptics routinely placed religious ideas—purity vs. pollution, sacralized motherhood and childhood, divine sovereignty, and moral individualism—at the center of their arguments against vaccines.

To protect bodily sovereignty and purity, they enacted rituals to stave off corruption. These rituals included self-education, holistic healing, intensive mothering, and detoxing bodies and environments. In different eras, skeptics created moral communities that coalesced behind shared values about bodies, health, and wellness. They negotiated the limits of bodily and medical authority, the responsibility of the individual to the collective, and the connection between the worldly physical body and the transcendent soul. Skeptics perceived the standardizations required of biomedicine and public health as immoral, so they agitated against state-mandated vaccinations. Their moral communities were prevalent on both the Left and the Right of the religious and political spectrums in the United States. From the debates over smallpox inoculations in colonial Boston to the furor over Covid-19, they have found common ground where few other movements have.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| AAP | American Academy of Pediatrics |
| ACA | Affordable Care Act |
| ACIP | Advisory Committee on Immunization Practices |
| AMA | American Medical Association |
| CDC | Centers for Disease Control and Prevention |
| DPT | Diphtheria-Pertussis-Tetanus vaccine |
| DTaP | Diphtheria-acellular Pertussis-Tetanus vaccine |
| EUA | Emergency Use Authorization |
| FDA | U.S. Food & Drug Administration |
| HPV | Human papillomavirus |
| ICAN | Informed Consent Action Network |
| MMR | Measles-Mumps-Rubella vaccine |
| NME | Nonmedical exemption |
| NVIC | National Vaccine Information Council |
| NVICA | National Vaccine Injury Compensation Act of 1986 |
| PEACH | Parents Educating and Advocating for Children's Health |
| SIDS | Sudden Infant Death Syndrome |
| STI | Sexually transmitted infection |
| TDaP | Tetanus-Diphtheria-acellular Pertussis booster vaccine |
| VAERS | Vaccine Adverse Event Reporting System |
| WHO | World Health Organization |

# INTRODUCTION

"Save Your Soul, Turn Back Now," proclaimed a protestor's sign at the entrance of the vaccination site at Dodger Stadium in Los Angeles, on January 30, 2021. Almost one year into the Covid-19 pandemic that had caused over 500,000 deaths in the United States at the time, a vaccine against the novel coronavirus was finally available. And yet, a pop-up protest forced the life-saving vaccination operation to pause for hours. Thousands of people idled in their cars, waiting in a line that snaked through the massive parking lot and into the street. Aerial footage of the traffic jam enraged national onlookers who had been clamoring for a vaccine since the pandemic began. After a few hours, the protest was broken up by police officers, and the vaccine clinic resumed. The scuffle was not an isolated event, however. At the time, one-third of American adults were either against or hesitant about being vaccinated.[1] Many feared the safety of the groundbreaking vaccine, while others did not believe there was a pandemic, calling it a government-sponsored hoax. The national reception to the coronavirus vaccines epitomized American political, religious, and cultural divisions in 2021. What some considered a miracle of science and a sign of hope, others believed was a soul-altering biological weapon.

Why were vaccines, widely considered one of the most successful and extraordinary biomedical advancements in modern history, so controversial? How could a technology capable of preventing millions of deaths elicit relief and respect from some

[1] Manny Fernandez, "A New Front in the Anti-Vaccine Fight Emerges in California," *New York Times*, February 6, 2021; Lydia Saad, "U.S. Readiness to Get Covid Vaccine Steadies at 65%," *Gallup Blog*, January 12, 2021.

corners but fear and disgust from others? Many witnesses to this ideological and embodied schism diagnosed it as an historical anomaly—a frustrating result of a past decade rife with political polarization. Since the presidential election of Donald Trump in 2016, mainstream cultural commentators had bemoaned what they saw as a widespread loss of confidence in traditional authority structures, including the government, the biomedical establishment, science, and academia.[2] In their stead, people relied on their own self-validating intuitions as well as alternative authorities and information. These new experts were often controversial political figures, cable television hosts, and even conspiracy theorists whose voices dominated online echo chambers. Critics attributed the decline in vaccine uptake to the "death of expertise," a rampant spread of misinformation, and fervent anti-science attitudes.[3] Powerful actors capitalized on this uncertainty, conning the American people into disputing concrete scientific evidence to advance their own agendas. These factors, many elite spectators claimed, were to blame for vaccination noncompliance.[4]

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[2] Biomedicine is the overlap between biology and medical science. It is a historically and socially iterating concept and practice. To encompass these complexities, I rely on the definition of epidemiologist Nancy Krieger, who has outlined three of the core principles of the biomedical approach: "1) the domain of disease and its causes is restricted to solely biological, chemical, and physical phenomena; 2) its [theories and methods rely on] laboratory research and technology and, as translated to health research, a discounting of research questions that cannot be studied by randomized clinical trials; 3) an embrace of "reductionism," a philosophical and methodological stance that holds that phenomena are best explained by the properties of their parts." See Nancy Krieger, *Epidemiology and the People's Health: Theory and Context* (New York: Oxford University Press, 2011), 130.

[3] Michael Kinch, *Between Hope and Fear: A History of Vaccines and Human Immunity* (New York: Pegasus Books, 2018); Tom Nichols, *The Death of Expertise: The Campaign Against Established Knowledge and Why It Matters* (New York: Oxford University Press, 2018); Robert N. Proctor et al., ed., "Agnotology: The Making and Unmaking of Ignorance" (Stanford, CA: Stanford University Press, 2008), chap. Introduction; Michael Specter, *Denialism: How Irrational Thinking Harms the Planet and Threatens Lives* (New York: Penguin, 2010).

[4] Peter J. Hotez, "The Antiscience Movement Is Escalating, Going Global, and Killing Thousands," *Scientific American*, March 29, 2021.

Scholars of vaccine history were less surprised by the vaccine skepticism, noting that vaccination had been controversial in American life since smallpox ravaged colonial settlements in the eighteenth century.[5] There are many comprehensive and invaluable historical and sociological accounts of how varied populations of "vaccine-hesitant" people have operated in American culture over time and what their main concerns have been.[6] Yet, in these accounts, there has been a missing element. Scholar of vaccine hesitancy Bernice Hausman has argued persuasively that these myriad reasons simply do not explain how hesitancy's roots have only grown deeper over three centuries. Hausman concludes that there still must be "something else" that can elucidate these complex motivations, writing that "To get at the *something else*, we have to be willing to bracket science and its contribution to understanding the problem [of vaccine hesitancy]." This project argues that the *something else* is religion.

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[5] James Colgrove, "Freedom, Rights, and Vaccine Refusal: The History of an Idea," *American Journal of Public Health*, February 2022; Kira Ganga Kieffer, "Stop Dismissing All Vaccine Skeptics As Anti-Science Conspiracy Theorists," *Los Angeles Times*, December 20, 2020; Anna North, "The Long, Strange History of Anti-Vaccination Movements," *Vox*, March 4, 2022; Jennifer A. Reich, "If We Want People to Take the Coronavirus Vaccine, We Need to Treat Them Like Consumers," *The Washington Post*, January 16, 2021.

[6] The following works provide varied approaches to the study of vaccine history and hesitancy: Arthur Allen, *Vaccine: The Controversial Story of Medicine's Greatest Lifesaver* (New York: W.W. Norton, 2007); Eula Biss, *On Immunity: An Inoculation* (Minneapolis, MN: Graywolf Press, 2015); James Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth Century America* (Berkeley, CA: University of California Press, 2006); Elena Conis, *Vaccine Nation: America's Changing Relationship With Immunization* (Chicago: University of Chicago Press, 2015); Bernice L. Hausman, *Anti/Vax: Reframing the Vaccination Controversy* (Ithaca, NY: ILR Press, 2019); Robert D. Johnston, "Contemporary Vaccination Movements in Historical Perspective," in *The Politics of Healing* (New York: Routledge, 2003), 259–86; Jennifer A. Reich, *Calling the Shots: Why Parents Reject Vaccines* (New York: New York University Press, 2018).

**Vaccine Hesitancy as Lived Religion**

This project charts a history of religion and vaccine hesitancy. The story of vaccines and vaccination is also the story of illness, suffering, trauma, and death. Further, it is a story about discerning truth, valuing individual and collective bodies, measuring purity, being a good parent, losing children, and the morality of how bodies should be treated. Living with the consequences of these quandaries creates what cultural anthropologist Clifford Geertz referred to as "bafflement, suffering, and intractable ethical paradox."[7] Geertz argued that humans create religions to confer and extract meaning from the unforeseeable, yet inevitable, difficulties of life. People create meanings—individual and shared—to allow them to carry on, to adapt to new situations and information, and to live according to a cultural system with values, customs, rituals, and beliefs that help them make practical sense of everyday life.

Vaccines are part of everyday life, even marking different phases of the life course. They indicate developmental milestones for growing children and are recorded in perpetuity on medical records. They are gatekeepers to daycare, schools, camps, and colleges. For adults, they are tied to the weather, as "Cold and Flu Season" denotes the beginning of the colder months, and reminders to get an annual flu shot dot pharmacy windows, Instagram ads, and grocery store check-out lines. Booster shots are part of routine prenatal care, and doctors recommend numerous vaccinations to older adults. Vaccines have been ubiquitous for at least half a century in American life, forming a cornerstone of well-care. Yet, they have remained controversial.

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[7] Clifford Geertz, *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), 100.

Since the introduction of the smallpox vaccine in 1796, vaccine-hesitant people have disagreed with a triumphalist view of vaccines as an unfettered example of medical progress. Instead, they have approached vaccination with varying concerns about the fates of their own bodies and those of their children. They have predominantly been hesitant of vaccines and skeptical of vaccine mandates rather than "resistant" or oppositional, although there are smaller factions who have rejected—or wished to reject––vaccines entirely.[8] Vaccine skepticism abounds across historical periods and populations, shaped by external religious and political factors, cultural trends, the specific features of different diseases and vaccines, perceptions of risk, and internal beliefs about bodies. Skeptics ask many timeless questions. Are vaccines safe? What is my role as a mother caring for a baby's body and soul? How do the substances within the vaccine syringe change our biology, our natural states? Why should the state have sovereignty over my body? Is it morally correct to be vaccinated, or unvaccinated? Do doctors, pharmaceutical companies, and the government care about my family's well-being? How should I weight stories and information from friends and family against what I hear from my pediatrician? While at first glance it may not seem so, these are all religious

[8] I use "hesitant" and "skeptical" interchangeably, reserving "resistant," "rejecting," and "anti-vaxxer" for contextually appropriate uses. For more on what constitutes vaccine "hesitancy," see Heidi J. Larson et al., "The Vaccine-Hesitant Moment," *The New England Journal of Medicine* 387, no. 1 (2022): 58–65. Larson defines hesitancy as a "state of indecision and uncertainty that precedes a decision to become (or not become) vaccinated." Also Julie Leask, "Target the Fence-Sitters," *Nature* 473 (May 26, 2011): 443–45. Leask outlines how vaccine hesitant people have tended to under-vaccinate their children by skipping some non-mandatory shots, while others are more oppositional and abstain from vaccination whenever possible. See Robert M. Jacobson, Jennifer L. St. Sauver, and Lila J. Finney Rutten, "Vaccine Hesitancy," *Mayo Clinical Proceedings* 90, no. 11 (2015): 1562–68.

questions. They are sites where people are engaged in moral deliberation. They are embodied expressions of what connects people to something beyond themselves.

When people think of religion, they generally think about the leaders and doctrines of traditions such as Christianity, Judaism, or Buddhism. What they tend to overlook are that religious traditions are cultural systems and narratives created—and recreated—by everyday people. Traditions are dynamic and diverse, changing over time and place. Their narratives provide answers and meanings to the essential questions of human life—questions involving the sacred, the nature of humanity, illness and death, and issues of power, control, and morality. When it comes to religion and vaccines, the media often poses questions to religious leaders, asking, "What does Islam say about vaccination?" or "What does the Pope think about vaccines containing cells derived from aborted human fetuses?" Answers to these questions cannot help us understand the root causes of vaccine hesitancy because they falsely assume that traditions are static or that religious leaders dictate the actions of every adherent.

To understand vaccine hesitancy, this project finds and analyzes subtler forms of religion, such as the moral valences of health and illness; decisions about which people and institutions to invest with authority; and shared narratives for creating social change. Scholars refer to this approach as "lived religion." Instead of focusing on official beliefs, texts, and leaders, studying lived religion takes in religion more broadly, finding the everyday practices through which we turn values into actions, identify sacred parts of ordinary life, and order our relationships to our bodies. As sociologist of religion Nancy Ammerman has written, lived religion resides in at least six dimensions of people's

seemingly secular lives: embodiment, materiality, emotion, aesthetics, moral judgment, and narrative. What differentiates the ordinary from the religious is a "spiritual dimension" which infuses these other dimensions with the sacred, transcendent, or non-ordinary.[9]

The lived religion of vaccine skepticism and abstention is often intensely individualistic, as parents make personal decisions for themselves and their children, often against the tides of the mainstream. However, these fierce individualists are also united in moral communities.[10] Skeptics share similar beliefs, practices, language, and a "culturally-derived morality," which affirms children's purity and their natural, or sacred, abilities to fight off diseases.[11] They value parental rights and relying on a mother's intuition to decide on health matters for her children. They express a moral distrust of pharmaceutical companies, doctors, and public health workers. Many limit or abstain from vaccination whenever possible and seek affirmation from those who do the same.

This project explores how vaccine-hesitant people have lived out distinctions between the "sacred" and the "profane."[12] According to the social theorist Émile Durkheim, groups identify certain things, feelings, beings, beliefs, and practices as

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[9] Nancy Tatom Ammerman, *Studying Lived Religion* (New York: New York University Press, 2021), 21.
[10] I reference Durkheim's conceptualization of "moral community" as "a society whose members are united because they share a common conception of the sacred world and its relation to the profane world. Émile Durkheim, *The Elementary Forms of Religious Life*, trans. Carol Cosman, Oxford World's Classics (Oxford University Press) (New York: Oxford University Press, 2001), 42.
[11] Drawing on Durkheim, sociologist Abby Day argues that people often create communities as a "claim [to] a unique culturally-derived morality." See Abby Day, *Believing in Belonging: Belief and Social Identity in the Modern World* (Oxford: Oxford University Press, 2011), 57. Vaccine hesitant people have historically adopted an identity that rejects on mainstream institutions, authorities, and bodily practices based upon moral grounds.
[12] According to Durkheim, "religious phenomena" contain two categories, rituals and beliefs. Further, religious worldviews classify all things into two opposite domains: sacred or profane. Durkheim, *The Elementary Forms of Religious Life*, 37–38.

sacred. Sacred things are set apart from mundane, ordinary things. However, what is sacred or profane is neither static nor essential. There can be some movement between categories, over time and through deliberate rituals. And, more importantly, what is considered sacred to one group or individual can be profane to another. For example, during the relatively brief history of the United States, cultural understandings of the relationship between mother and child shifted considerably over time, place, and moral community. In white New England Puritan religious culture, children were considered wicked, unsaved, corruptible, and expendable—profane, in Durkheim's words. Over centuries in the United States, children came to be seen as pure, innocent, lovable, and valuable. In some parental subcultures, mothers and children were understood to share a sacred, intractable bond in which both the mothers and the children embodied sacred aspects of the natural order of life.[13] As we will see, these subcultures where mothers and children are sacred have tended to espouse more vaccine hesitancy.

Vaccine-hesitant people juxtapose purity and pollution, which are embodied states of being alive.[14] Someone is either pure or polluted. In vaccine-hesitant conversations,

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[13] There is a great canon of scholarly literature on the changing cultural understandings of mothers and children in United States history. See Rima D. Apple, *Perfect Motherhood: Science and Childrearing* (New Brunswick, NJ: Rutgers University Press, 2006); Robin Bernstein, *Racial Innocence: Performing American Childhood from Slavery to Civil Rights* (New York: New York University Press, 2011); Chris Bobel, *The Paradox of Natural Mothering* (Philadelphia: Temple University Press, 2001); Anna Mae Duane, *Suffering Childhood in Early America* (Athens, GA: University of Georgia Press, 2010); Sharon Hays, *The Cultural Contradictions of Motherhood* (New Haven, CT: Yale University Press, 1998); Viviana A. Zelizer, *Pricing the Priceless Child: The Changing Social Value of Children* (Princeton, NJ: Princeton University Press, 1994). Viviana A. Zelizer, *Pricing the Priceless Child: The Changing Social Value of Children* (Princeton, NJ: Princeton University Press, 1994).

[14] In vaccine hesitancy discourses, the binary of purity/pollution is generally synonymous with that of sacred/profane. Theorist Mary Douglas argued that distinctions between pure and impure substances are not absolute. They are culturally constructed and elucidate cultural values and fundamental understandings of "the natural order." Mary Douglas, *Purity and Danger* (New York: Routledge, 1966).

the term purity connotes cleanliness—often the perceived absence of germs—but it can also represent healthfulness, the state of spiritual goodness, ritual completion, the sacrality of nature, virginity, and being unvaccinated. Depending on the context, it carries overt or covert racial connotations of whiteness, as well. Abstaining from vaccination may at first glance seem passive and medical. In fact, it is active, political, and religious.

Consider that children attending most schools in the United States are required to provide documentation that they have received vaccines—more than thirty individual injections—between birth and eighteen-years-old, most before beginning first grade.[15] Or that some workplaces require vaccinations as a condition of employment. In the United States, abstaining from vaccines is difficult because most states have strictly enforced laws that require vaccination for school attendance. These laws make vaccination compulsory. The state *compels* parents to vaccinate their children by making the right to attend school contingent on participation in a public health measure. Many vaccine-hesitant people find this tactic morally reprehensible, an infringement on their God-given parental rights. They seek legal protection to avoid vaccination, often using religious or personal belief exemptions as provided by most states or even homeschool to circumvent public school mandates.

Through mandatory vaccination laws, governments effectively assert that being vaccinated is morally virtuous while being unvaccinated is morally bereft. Public health measures are often sites of translation between the religious and the secular because they

[15] This estimate does not include annual influenza or Covid-19 vaccinations.

apply judgments of morality to seemingly secular behaviors.[16] Vaccine hesitancy and abstention from vaccines—or the desire for abstention—are moral behaviors. Not doing something that most people take for granted can be a religious act in which the *inaction* is a demonstration of embodied faith. Many religious people abstain from certain foods by keeping kosher, halal, or vegan, while others promote fasting for lengthy periods. Some abstain from sex or proscribe many sexual acts. And still others abstain from permanently marking the physical body or harming animals. Broadly, these acts of abstention concern maintaining purity of body and soul.

On both sides of many vaccine debates, activists draw on notions of purity and pollution to advance secular public health policies on sanitation, hygiene, quarantine, sex education, reproductive rights, and much more. And they are the basis of religious arguments about those very policies. In discussions about vaccines over centuries, mothers appear as sacred defenders of innocent children in danger of being profaned by a medical establishment that neither loves nor cares for them. According to these mothers, institutions—doctors, medical associations, and government agencies—do not understand the uniqueness, purity, and sensitivity to contamination of their child's body. Standardized policies are irrelevant, so experts who promote them do not merit acceptance. Skeptics liken their bodies to God-made temples, launch crusades against mandatory vaccination laws, and fret over the spiritual consequences of polluted blood.

[16] See Anthony M. Petro, *After the Wrath of God: AIDS, Sexuality, and American Religion* (New York: Oxford University Press, 2015), 5.

Vaccine proponents and skeptics alike utilize metaphors of false gods, heresy, and martyrdom to disparage one another—each defining a moral universe.

People also form moral universes by correlating individual identities to collective multigenerational injustices perpetuated by the biomedical system at large. Many Black Americans express hesitancy about vaccination because they have experienced racially prejudiced medical care.[17] Narratively and functionally, they place themselves within the deeper systemic problem of biomedical institutions that have perpetrated racist medicine against people of color. Minoritized people have lived and continue to live with a system of medical inequities that dictates worse healthcare access and quality. It also reproduces structural racism, from clinical trials to patient visits. Medical professionals are less likely to affirm Black people's complaints about pain and other problematic symptoms, and Black patients tend to have worse morbidity and mortality outcomes than white patients, even during routine care such as that received during childbirth.[18] People of color are more likely to refuse a flu shot when it is voluntary, out of concern that there are risks they are not being told about, or out of a preferred reliance on self, community, or religious belief than on the medical expertise of doctors.[19]

This dissertation studies vaccine-hesitant people during different periods in United States history as they reacted to and debated vaccines against smallpox, polio, whooping cough, measles, human papillomavirus (HPV), influenza, and Covid-19.

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[17] Dayna Bowen Matthew, *Just Medicine: A Cure for Racial Inequality in American Health Care* (New York: New York University Press, 2015), 4.
[18] John Hoberman, *Black and Blue: The Origins and Consequences of Medical Racism* (Berkeley, CA: University of California Press, 2012).
[19] Allison Levine and Bobbi Sherman, "Barriers to the Flu Vaccine in Communities of Color Are Layered," *Denver 9 News*, November 25, 2020.

Throughout, there are high-profile anti-vaccine advocates, epidemics, and conspiracy theories which function as prophets and sacred texts. The primary sources for this study are discourses—spoken and written debates—about vaccine ingredients and safety, illness, families, homeschooling, wellness practices, legal protections, and medical freedom. These discussions are found in parenting guidebooks, documentary films, exposés, blogs, podcasts, personal illness narratives, tweets, newspaper articles, alternative health advice columns, and grassroots organization websites. A closer look at these everyday commentaries on health reveals that they brim with religious language and concepts, often debating issues of ultimate concern.

One of the key challenges these sources bring to light is over what constitutes authoritative knowledge and who people can trust with their health. This contest is a proxy war over who holds the power to discern truth—the individual or the collective biomedical establishment. As a result, individual illness narratives and anecdotal evidence often contradict the scientific facts derived from peer-reviewed studies and randomized trials published in scientific and medical journals.[20] I draw on both forms of knowledge throughout this project to illustrate a fuller picture of how different people use various forms of knowledge to advance their own purposes. Emphasizing process, this project demonstrates how information can simultaneously be sacralized as truth and dismissed as misinformation, or lies. Both types of knowledge—the anecdotal and the

[20] I base my conceptualization of illness narratives on the work of medical sociologists and anthropologists. Arthur W. Frank, *The Wounded Storyteller: Body, Illness, and Ethics* (Chicago: The University of Chicago Press, 1995); Anne Harrington, *The Cure Within: A History of Mind-Body Medicine*, 1st ed. (New York: W.W. Norton, 2008); Arthur Kleinman, *The Illness Narratives* (New York: Basic Books, 1988). On scientific peer review, see Naomi Oreskes, *Why Trust Science?* (Princeton, NJ: Princeton University Press, 2021).

peer-reviewed—are cited throughout to advance a cohesive narrative that can help each side of the proxy war better understand the other.

**Misinformation and the Measles**

Vaccines are objects that bear the weight of tremendous projection—safety and prevention for some, and horrific transformation and tyranny for others. At various points, these specters have ranged from cows to vampires, developmental disorders to microchips. All of these represent a loss of control. As a result, vaccine hesitancy has always been grounded in questions about safety and risk. However, safety and risk are in the heart and mind of the beholder, as vaccine controversies demonstrate. One incident in recent history stands out as the turning-point that caused modern vaccine hesitancy to become highly resonant, or at least well-known. It caused a widespread reckoning over authoritative information and the power of incorrect information, later called misinformation, to foster both panic and distrust of doctors. In 1997, an article by then-medical doctor Andrew Wakefield was published in the prominent British medical journal, *The Lancet*.[21] The study concerned gastrointestinal conditions in children with developmental disorders. Deep in the article, Wakefield postulated that thimerosal, a mercury-based preservative used in the measles-mumps-rubella (MMR) vaccine, was a cause of autism.[22] This assertion generated a frenzy among doctors and researchers who

[21] Andrew J. Wakefield, "[RETRACTED] Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children," *The Lancet* 351, no. 9103 (February 28, 1998).
[22] During this time, autism was diagnosed according to the *Diagnostic and Statistical Manual IV* (DSM-IV), which emphasized "qualitative impairment" in social interaction and communication skills.

strove to disprove the science and discredit the scientist, hoping to assuage public fear and anger.

Under intense scientific scrutiny, the findings and methods of the study did not hold up, and Wakefield was found to have a conflict of interest. The journal retracted the article.[23] Nevertheless, what was the result of poorly conducted science came to be known as "mercury-autism theory." Repeated often and loudly, the unsubstantiated scientific footnote was codified by parents looking for answers to their children's mysterious illnesses. Mercury-autism theory filled a critical void in medical knowledge about the causes of autism, and it fueled parental vaccine hesitancy, especially because the incidence of autism diagnoses had become more prevalent in the preceding decade.[24] Pharmaceutical companies, desperate to destigmatize the MMR vaccine, removed the thimerosal from their vaccine preparations. This was not because scientific evidence indicated that it was harmful. Rather, it was to quell mass hesitancy that was resulting in vaccination abstention.

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[23] There are many versions of the Wakefield and mercury-autism controversies told from different points of view. Brian Deer, *The Doctor Who Fooled the World* (London: Scribe Publications, 2020); Susan Dominus, "The Crash and Burn of an Autism Guru," *The New York Times Magazine*, April 20, 2011; Richard Horton, *MMR: Science and Fiction* (London: Granta Books, 2004); David Kirby, *Evidence of Harm: Mercury in Vaccines and the Autism Epidemic* (New York: St. Martin's Griffin, 2005); Seth Mnookin, *The Panic Virus: The True Story Behind the Vaccine-Autism Controversy* (New York: Simon & Schuster, 2011); Paul A. Offit, *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure* (New York: Columbia University Press, 2008).

[24] Heidi J. Larson argues that gaps in knowledge and unsettled anxieties create fertile ground for rumors to become calming explanatory measures. She also argues that it is more constructive to view misinformation as rumors and rumor-spreading. Rumors live in their own "eco-system" of social groups and shared knowledge. Larson, *Stuck: How Vaccine Rumors Start—and Why They Don't Go Away* (New York: Oxford University Press, 2020), xxviii, 5. On defining autism spectrum disorder, see Fred R. Volkmar and James C. McPortland, "From Kanner to DSM-5: Autism as an Evolving Diagnostic Concept," *Annual Review of Clinical Psychology* 10 (2014): 193–212. The expansion of autism diagnoses and treatments is addressed in Ch. 8 of this dissertation.

Despite all scientific consensus disproving any causal connection between them, mercury-autism—and as a result, MMR-autism—had staying power. This failed theory radicalized existing vaccine skeptics and created many new ones. For a growing number of parents of purportedly vaccine-injured children, Wakefield was treated as a martyr who lost his credentials to protect children's bodies from mercury pollution.[25] Consequently, many parents were convinced that even a shard of truth in mercury-autism theory justified having their children skip MMR shots. Measles, a once-eradicated disease, roared back into American life in 2015 because of low vaccination rates. This story, explored later in detail, illustrates how influential, and actionable, incorrect information and misinformation can be. Mercury-autism theory became so polarizing within the American public that nefarious actors used it to sow political discord.[26]

National news articles portrayed vaccination as a personal choice with pros and cons in the early 2000s. Within a decade, the tide turned. Mainstream media and news stopped tacitly endorsing vaccine hesitancy.[27] Instead, newspapers such as the *New York Times* published only glorified vaccine news and increasingly painted vaccine-hesitant people with broad, judgmental strokes. So-called "anti-vaxxers" were pilloried for "not believing in science," though in many cases they simply thought the science was unsettled. Instead, the issue was fundamentally about trust. When public figures they respected put forth alternative statistics that countered the mainstream scientific

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[25] Larson, *Stuck: How Vaccine Rumors Start—and Why They Don't Go Away*, 29–30.
[26] Donald G. McNeil, Jr., "Russian Trolls Used Vaccine Debate to Sow Discord, Study Finds," *New York TImes*, August 23, 2018.
[27] Julia Belluz, "How Should Journalists Cover Quacks Like Dr. Oz or the Food Babe?," *Vox*, April 13, 2015; Amy Wallace, "An Epidemic of Fear: How Panicked Parents Skipping Shots Endanger Us All," *Wired*, October 19, 2009.

consensus, the vaccine-hesitant were more likely to side with the minority, even fringe, position. Why? Because they had adopted narratives that corroborated their concerns, in effect, proving them correct.[28] Who people believed and trusted with their health became an increasingly divisive issue through the 2010s, falling largely along politically partisan lines for the first time.

In the 2010s, scholars developed the concepts of misinformation, or incorrect or misleading information, and disinformation, which is incorrect information deliberately created to confuse people or to undermine consensus knowledge and cause conflict. They sought to describe how falsehoods—especially about science—were often packaged as authoritative and legitimate, circulated online, and adopted by certain groups as facts.[29] Ignorance, or not knowing, was not simply the absence of knowledge. It was also the result of deliberate efforts to manipulate people into questioning the things they thought they knew. Why had smoking cigarettes remained popular despite overwhelming evidence that it caused irreparable health issues and deadly cancers? Why were so many people seemingly ignoring the science of human-created climate change and global warming? Why would people abstain from vaccines that could prevent deadly diseases when they were widely proven to be safe? Often multinational corporations and industry lobbyists intentionally fostered doubt by employing renowned scientists to muddle data. The intended result of this work was to make established facts seem to be only one side

[28] Andrew Wakefield is this type of leader. On Wakefield's lasting appeal, see Larson, *Stuck*, 30. In recent decades, others were Jenny McCarthy, Robert F. Kennedy Jr., Del Bigtree, and Donald Trump.
[29] Jane Kourany and Martin Cantor, eds., *Science and the Production of Ignorance* (Cambridge, MA: MIT Press, 2020). The scholarly discourse of "agnotology" concerns the creation and perpetuation of ignorance, typically through scientists and corporations manipulating scientific findings.

of an unfinished scientific debate. In media terms, this is known as "false balance," or "bothsidesism."[30] When vaccine skepticism heated up in the wake of mercury-autism theory, many important anti-vaccine advocates disseminated disinformation by openly accusing the American Medical Association (AMA), the Centers for Disease Control and Prevention (CDC), the Food & Drug Administration (FDA), pharmaceutical companies, and even local doctors, of willful malfeasance. They repeated calls for "unbiased" safety trials, implying that scientists were unduly influenced, and that vaccine science was unsettled.

Leading up to the 2016 presidential election, hesitancy increasingly moved online, out of public view and into personalized, insulated digital worlds of self-reinforcement, often called echo chambers.[31] The result was that vaccine-skeptical authors, activists, and social media algorithms circulated misinformation by igniting and spreading elaborate conspiracy theories, or "digital wildfires," to people who were vaccine-hesitant.[32] As Donald Trump pitched populism to disgruntled voters, vaccine hesitancy and parental rights became issues of concern at Republican primary debates in 2015-2016.[33] Doubts

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[30] Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Climate Change* (New York: Bloomsbury Publishing, 2011); Briony Swire-Thompson and David Lazer, "Reducing Health Misinformation in Science: A Call to Arms," *The Annals of the American Academy of Political and Social Science* 700, no. 1 (May 5, 2022). In the late 1980s, John C. Burnham argued that the "popularization" of science was incompatible with proper peer-reviewed science. See John C. Burnham, *How Supersition Won and Science Lost* (New Brunswick, NJ: Rutgers University Press, 1987).

[31] Politically oriented cable news networks helped foster the echo chamber effect in American politics, and it was infinitely exacerbated by social media. See Kathleen Hall Jamieson and Joseph N. Cappella, *Echo Chamber: Rush Limbaugh and the Conservative Media Establishment* (New York: Oxford University Press, 2008); Jennifer Lackey, "Echo Chambers, Fake News, and Social Epistemology," in *The Epistemology of Fake News*, eds. Sven Bernecker et al. (New York: Oxford University Press, 2021), 206-227.

[32] Larson, *Stuck: How Vaccine Rumors Start—and Why They Don't Go Away*, 68.

[33] Larson, *Stuck*, 58. Larson argues that vaccine hesitancy "fits perfectly into populist agendas."

about vaccine safety blended seamlessly with a libertarian "burn it down," mentality that targeted authoritative government institutions as enemies of individual medical freedom and religious liberty. Vaccine hesitancy, long a quietly bipartisan issue, became associated with the overlapping trifecta of populist conservatism, white Christian evangelicalism, and the Trump-led Republican Party by the time that Covid-19 hit.[34] Feelings about public health measures to mitigate the pandemic, including vaccination, became a litmus test issue for political, racial, and religious identity.

**Hesitancy and the Herd**

Vaccines were invented to prevent mass human death and suffering caused by diseases. They are both a biomedical technology and a communal endeavor.[35] Vaccines have high efficacy rates, but they do not confer immunity to everyone who receives them. In addition, some people cannot receive them or are too young to be vaccinated. As a result, for vaccine-preventable illnesses to remain at bay, most of a community must be vaccinated. This critical mass fosters "herd immunity." Herd immunity describes a scenario in which enough disease-fighting cells, or antibodies, have been built up among people inhabiting the same spaces, breathing the same air, touching the same surfaces, and encountering the same germs, to prevent a mass outbreak of a certain disease. Herd

[34] On vaccine hesitancy and politics, Mark Navin rightly argues that vaccine denialists espouse an "ethics of purity" which is apolitical. See Mark Navin, *Values and Vaccine Refusal: Hard Questions in Ethics, Epistemology, and Health Care* (New York: Routledge, 2016), 98. On politicization during Covid, see Michael E. Miller, "The GOP's Dangerous 'Debate' on Vaccines and Autism," *The Washington Post*, September 17, 2015; Monica Potts, "Why Being Anti-Science Is Now Part of Many Rural Americans' Identity," *FiveThirtyEight*, April 25, 2022; Liz Essley-Whyte, "Spreading Vaccine Fears—And Cashing in on Misinformation," *Montana Free Press*, June 21, 2021.

[35] A small number of vaccines are used to prevent non-transmissible diseases, such as tetanus and rabies.

immunity allows even those who cannot be vaccinated to benefit from the immunity conferred by vaccines because a given disease cannot survive in their communities. Each vaccine is its own numbers game, but the upshot is that contagious, vaccine-preventable diseases can spread if too many people opt out of vaccination. As a result, vaccination benefits others within a community.

Vaccine hesitancy is about choice. Skeptics claim they desire informed consent of all risks of vaccination and the choice of whether to vaccinate.[36] This choice bears a weighty moral dilemma, especially in an era when mass vaccination has successfully vanquished many of the diseases for which we vaccinate. On the one side of vaccine hesitancy, to vaccinate is to risk oneself or child. This side of the dilemma is rooted in a morality of individual freedom. On the other, not to vaccinate is to risk the community, which would violate a morality founded in communitarian values. Both individual freedom and communitarianism are longstanding traditions in American history and the history of disease management.[37] In the case of vaccines, they are at odds. States have, over time, taken this moral dilemma upon themselves, primarily by making most vaccinations mandatory for children to attend public schools. States also decide whether to allow exemptions for non-medical reasons, how and when to use coercion to increase

[36] Many critics have dismissed this as "medical consumerism" in which healthcare "customers" pick and choose among the array of options biomedicine and alternative medicine have to offer, regardless of physician expertise or medical recommendations. See Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth Century America*, 47. Reich argues persuasively that mothers' vaccine hesitancy on behalf of children has been driven by their considerations of an individual child's perceived risks of encountering disease or having an adverse vaccine reaction. Reich, *Calling the Shots: Why Parents Reject Vaccines*, 70, 75–78.

[37] John Fabian Witt, *American Contagions: Epidemics and the Law from Smallpox to Covid-19* (New Haven, CT: Yale University Press, 2022), 36.

voluntary vaccination, how to treat reported adverse events, and whether to acknowledge the reality of vaccine injury.[38] Vaccine-hesitant people believe that vaccines carry more risk of dangerous adverse reactions than they statistically do. They fear the biological effects of unknown ingredients concocted by faceless, uncaring corporations motivated only by profit.[39] The corporatization of healthcare created more animus, justifying individual decision-making.

Ethicists and public health workers have worried about Americans' tendencies toward hyper-individualism, viewing vaccine hesitancy as a breach of social contract.[40] They have feared the "free-rider problem," in which vaccine-resisters reap the benefits of herd immunity without assuming any risk. They lament the "tragedy of the commons," and doubt people's ability to calculate risk accurately and actionably.[41] However, vaccine-hesitant people have worried that without vigilance, governmental overreach might override sacred principles of bodily autonomy. Some identify as potential victims of structural racism and misogyny. Others worry that vaccine mandates and each new vaccine added to the schedule for routine childhood vaccination are dominos falling toward socialized medicine. And many debate the ethics of "sacrificing" a few bodies—

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[38] On risk see Robert Aronowitz, *Risky Medicine: Our Quest to Cure Fear and Uncertainty* (Chicago: University of Chicago Press, 2015); Robert Crawford, "Risk Ritual and the Management of Control and Anxiety in Medical Culture," *Health* 8, no. 4 (2004): 505–28.

[39] Reich finds that vaccine ingredients and distrust of pharmaceutical companies are major reasons for vaccine hesitancy. Reich, *Calling the Shots: Why Parents Reject Vaccines*, 137–42. Heidi Yoston Lawrence discusses the rhetorical and material stakes of the phrase "vaccine injury." Lawrence, *Vaccine Rhetorics* (Columbus, OH: Ohio State University Press, 2020), 93.

[40] Reich suggests reframing vaccines as a social contract to minimize the tendency to understand them as individual decisions. Reich, *Calling the Shots: Why Parents Reject Vaccines*, 236–40.

[41] Katharine Browne, "The Measles and Free Riders: California's Mandatory Vaccination Law," *Cambridge Quarterly of Healthcare Ethics* 25 (2016): 472–78; Garrett Hardin, "The Tragedy of the Commons," *Science* 162, no. 3859 (December 13, 1968).

those who may suffer adverse effects of vaccines—to achieve the mass public health goals of herd immunity. In other words, they bristle at what they see as a "one-size-fits-all" approach to vaccination policies dictated by population-based studies rather than an individual's medical history.[42] This project examines the historical contexts of these quandaries. It also understands them as religious questions that inform, and are embodied by, the entire vaccination process—development to injection, pharmaceutical company to clinic.

Although this project utilizes religion as the primary lens for understanding vaccine hesitancy, it required forays into many fields of study—the histories of biomedicine and public health, vaccine science and law, alternative health movements, anti-vaccine movements, disease, women's and disability health rights, racism in medicine, and the social constructions of motherhood and childhood. Traditionally, religion has been largely ignored in these histories. Yet, religion and constructions of morality are embedded in the cultural, social, scientific, legal, and political systems that constitute each of these areas of life. Biomedical technologies, vaccines included, are fraught with moral questions.

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[42] Ruha J. Benjamin, *People's Science: Bodies and Rights on the Stem Cell Frontier* (Stanford, CA: Stanford University Press, 2013); Harris L. Coulter and Barbara Loe Fisher, *DPT: A Shot in the Dark* (New York: Warner Books, Inc., 1985); Hoberman, *Black and Blue: The Origins and Consequences of Medical Racism*; Wendy Kline, *Bodies of Knowledge: Sexuality, Reproduction, and Women's Health in the Second Wave* (Chicago: University of Chicago Press, 2010); Jennifer A. Reich, *Calling the Shots: Why Parents Reject Vaccines* (New York: New York University Press, 2016), 86.

**What About Science?**

Most public discussion about vaccine hesitancy—from skepticism to rejection—has, for decades, depicted "anti-vaxxers" as "anti-science." In other words, people who are skeptical or opposed to mandatory vaccines are reductively understood as not believing in the scientific paradigm. Yet, as many scholars have shown, vaccine hesitant people put stock in science and the use of the scientific method to determine the facts of biology, the effects of toxic chemicals on the body, and the reliability of statistical analyses.[43] After I presented some of the arguments in this dissertation at the American Academy of Religion's annual conference in November 2019 to a room full of academics with Ph.D.s, a disgruntled man raised his hand to challenge me. He asked loudly, "Yes, but what are we supposed to do about these flat-earthers?" to which I replied that vaccine-hesitant people did not tend to espouse pre-Enlightenment beliefs about the Earth's shape. If we were to "do" anything, by which the questioner meant increase vaccine uptake, I answered, the pro-vaccine majority would need to dispense with pejorative stereotypes and address hesitation seriously, even kindly. The talk ended, and the audience dispersed. Numerous people—notably all middle-aged women—stayed behind to thank me for my presentation. In hushed, confessional tones, they told me that they had been afraid to vaccinate their children when they were young. Sure, we knew

[43] My work follows in a line of scholars who published during the mid-2010s and early 2020s who have taken a more sympathetic view of vaccine-hesitant people by problematizing the reductive "science versus anti-science" paradigm, which falsely equates science with rationality. These scholars include Bernice Hausman, *Anti/Vax*, 2019; Heidi J. Larson, *Stuck*, 2020; Heidi Yoston Lawrence, *Vaccine Rhetorics*, 2020; Mark Navin, *Values and Vaccination*, 2016.

more now, some said, but "back then" there was uncertainty about vaccine safety. They only had one chance to make the right decision.

Too often, we equate science with fact. Mantras to this effect reverberate throughout our fractured society. They are repeated by those considered liberal elites—academics, Democratic politicians, celebrities. Believe in science. The facts are obvious. Trust the scientists. Each of these proclamations, and every Like or Retweet they receive, reinforces at least three lines of fracture. First, that science is something to believe in—a choice, willingly made, with moral implications. Second, that science is the only way, or the correct way, to know something. Third, that to trust scientific facts, such as "vaccines are safe," we must trust the authorities who convey them to us. These statements contradict many of the core characteristics of science.[44]

Science comprises a body of knowledge only because of the consensus of the scientific method and the existence of peer review.[45] Science is not static. "The science" changes, and this can be confounding or even infuriating. Facts accrete and paradigms shift, as experiments are reimagined and methods are reworked.[46] Science is historically and culturally and ethically contingent—the experiments that scientists used decades ago to test certain vaccines, for example, would never meet today's ethical standards, yet millions of deaths worldwide have been prevented because the vaccine prevented disease

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[44] Steven Shapin, *Never Pure: Historical Studies of Science As If It Was Produced By People With Bodies, Situated in Time, Space, Culture, and Society* (Baltimore, MD: The Johns Hopkins University Press, 2010).
[45] Oreskes argues persuasively that the process of scientific peer review is why people should trust in the knowledge scientists offer. Oreskes, *Why Trust Science?*
[46] Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Fourth ed. (Chicago: University of Chicago Press, 2012).

effectively.[47] Science takes us only so far before we are met with moral quandaries. Science gave us the atomic bomb, but it is morality that tells us whether to drop it or not. And in the end, scientists are people—good actors and bad. Authority figures are never, and should never be, universally accepted.[48]

As many have noted, scientific arguments that tout vaccine safety and efficacy do not diminish vaccine hesitancy, even amid a global pandemic.[49] They do not persuade people that the need to reduce carbon emissions is essential and existential. They do not stop people from engaging in self-destructive behaviors that harm their health. The point is not that the facts are wrong or unconvincing, but rather that we speak many different languages founded on values and experiences that are difficult to convey in the specific terms that science requires. These languages are affective—love, guilt, fear, intuition, faith. And they are embodied—anxious, revolted, natural, godly.

**Four Eras of Vaccine History in the United States**

Over three hundred years, vaccine hesitancy has waxed and waned but has never gone away. This project charts a long history of vaccine hesitancy, beginning with the

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[47] Hepatitis B vaccines were tested, without patient or guardian permission, on residents of a New York State facility for children with mental illness. Heidi J. Larson, *Stuck*; Lawrence, *Vaccine Rhetorics*; David J. Rothman and Sheila M. Rothman, *The Willowbrook Wars* (New York: Harper & Row, 1984).

[48] Shapin argues that the scientific method does make scientist more "virtuous" than non-scientists. Steven Shapin, *The Scientific Life: A Moral History of Late Modern Vocation* (Chicago: University of Chicago Press, 2010). Yet, in the stories of agnotology told by Oreskes and Conway, scientists can, and have, contorted data for disingenuous reasons. We must also consider that bioethics have changed over time, forcing us to contend with many inhumanities conducted in the name of scientific pursuit.

[49] Bruce L. Miller, "Science Denial and COVID Conspiracy Theories," *Journal of the American Medical Association*, November 2, 2020; Chris Mooney, "The Science of Why We Don't Believe Science," *Mother Jones*, June 2011; Brendan Nyhan and Jason Reifler, "Does Correcting Myths About the Flu Vaccine Work? An Experimental Evaluation of the Effects of Corrective Information," *Vaccine* 33 (2015): 459–64; Michael Shermer, "How to Convince Someone When Facts Fail," *Scientific American*, January 1, 2017.

Boston smallpox epidemic of 1721-1722 and concluding in the middle of the Covid-19 pandemic in 2022. It follows that history through four eras: the Era of Suspicion (1700-1890); the Era of Promise (1890-1997); the Era of Controversy (1997-2015); and the Era of Politicization (2015-).

It might seem odd that the Eras of Suspicion and Promise encompass most of the three hundred years covered here, while the latter two cover roughly a quarter-century. There are several reasons why vaccine skepticism changed more rapidly in the recent past. First, the number of vaccines, and the rate at which they were developed and added to children's required immunization schedules, increased dramatically at the turn of the twenty-first century.[50] People who were already wary of mandatory vaccination became even more skeptical as new vaccines against less deadly illnesses became the norm. Second, wellness culture grew into a mainstream trend during the 2010s. The leaders of wellness culture, often corporations and online influencers, capitalized on the beliefs, practices, and research that alternative health practitioners had been implementing for decades, if not millennia. Often, wellness advocates popularized concepts, such as naturalism and detoxifying the body ("detoxing"), by commodifying them with products and cure-alls without fully explaining their reasoning to the public.[51] This acculturation and democratization of certain alternative health practices gave rise to more vaccine hesitancy because it made skepticism toward the biomedical establishment more socially

[50] "Vaccine History: Developments by Year," Children's Hospital of Philadelphia, accessed July 7, 2022, https://www.chop.edu/centers-programs/vaccine-education-center/vaccine-history/developments-by-year.
[51] Matthew Schneirov and Jonathan David Geczik, *A Diagnosis for Our Times: Alternative Health, From Lifeworlds to Politics* (Albany, NY: State University of New York Press, 2003); Alan Levinovitz, *Natural* (Boston: Beacon Press, 2020).

acceptable. Last, the growth of social media platforms, the ubiquity of Amazon and its personalized algorithmic shopping experience, and the social capital built by influencers on Facebook, Twitter, YouTube, Pinterest, Instagram, and TikTok allowed likeminded people to congregate online to share vaccine-skeptical information—and misinformation. In short, technology sped up at the end of the twentieth century, creating an environment containing more vaccines and more tools to interrogate them.

The Era of Suspicion, covered in Chapter One, occurred before the discovery of the "germ theory of disease," which named microorganisms as the way that communicable diseases spread.[52] Prior to germ theory, there were myriad paradigms for understanding the cause of diseases. Even without this understanding of the causes of disease, practitioners around the world utilized a technique similar to vaccination known as inoculation. Inoculation was a messy business which required spreading infected pus from smallpox patients into fresh wounds cut into the arms of healthy people who had not already caught the disease naturally. Inoculated people tended to get some minor symptoms of smallpox allowing them to develop immunity. Sometimes, they died from the procedure. Inoculation was controversial. According to the Puritan Christian theology that dominated the New England colonies, for example, epidemics were signs of divine providence sent to punish sinful communities.[53] Disease demanded collective penitential prayer and fasting, not pus-sharing. Later, in the early nineteenth century, some New England localities caused outrage when they mandated inoculation, and then vaccination,

[52] Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, MA: Harvard University Press, 1999), 6.
[53] Tony Williams, *The Pox and the Covenant* (New York: Sourcebooks, 2010), 21.

as a requirement for school attendance. Some funneled this anger into the formation of "anti-vaccination leagues," which published incendiary newspapers, newsletters, and handbills decrying the godlessness of inoculation.[54] They argued that inoculation tainted infant blood and violated nature's rules by polluting people's bodies with impure substances.

Chapter Two continues into the late 1880s, when the germ theory of disease was confirmed by French scientist Louis Pasteur. Aided by the invention of microscopes and the concept of microbiology, Pasteur and other scientists discovered that microbes, invisible to the naked eye, are living organisms that reproduce quickly and spread disease from person to person.[55] Germ theory was a radical departure from contemporary understandings of how disease spread. It was adopted over a relatively short period by biomedical physicians and scientists. Scientists quickly began studying the cellular origins of the major epidemic diseases of the period—cholera, yellow fever, diphtheria. During the early twentieth century, vaccine science developed rapidly. Vaccines fueled the development of epidemiology, which is the scientific study of population health, as well as the field of public health. Scientists guided public health officials to implement policies to reduce incidents of disease transmission.[56] Public health became an official government enterprise with the goals of reducing the prevalence of diseases that many white Americans associated with urban poverty and new immigrant populations. Their

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[54] Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth Century America*, 52.
[55] Alison Bashford, *Purity and Pollution: Gender, Embodiment and Victorian Medicine* (Hampshire, UK: Macmillan, 1998); Kinch, *Between Hope and Fear*, chap. 4; Tomes, *The Gospel of Germs*, 6.
[56] Colgrove, *State of Immunity*, Introduction. For a more theoretical analysis of the public health movement as a state tool for regulating bodies, see Deborah Lupton, *The Imperative of Health: Public Health and the Regulated Body* (London: Sage Publishing, 1995).

tools were sanitation infrastructure, hygiene education, quarantine, and mandatory vaccination—all based on the conceptual understanding of contagion and a communitarian approach to the health of the social body.[57] Mandatory vaccination, again, caused some citizens to feel moral outrage because it infringed on personal freedoms.

The world wars marked the beginning of the Era of Promise. Vaccine opposition dissipated. The United States Military funded research and produced vaccines as biological defenses for troops, making vaccines a source of pride and patriotism for most Americans.[58] Glowing from wartime victories, the nation put its efforts behind defeating polio. The collective effort culminated in two effective vaccines and again reinforced vaccines as a symbol of American exceptionalism during the 1950s. Beginning in the 1960s, the CDC created a recommended immunization schedule for school-aged children, which was backed by the American Academy of Pediatrics and widely enforced at the local level without much angst on the part of the public. Rates of epidemic disease decreased dramatically, although it seemed that chronic diseases were on the rise.

In 1982, the modern vaccine hesitancy movement was born, the subject of Chapter Three. A mother-led effort, it focused on proving that certain children were harmed by the diphtheria-pertussis-tetanus (DPT) vaccine. Its goals were to force manufacturers to create safer vaccines and to secure federal funds for the care of vaccine-

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[57] For histories of these early twentieth century public health endeavors, see Colgrove, *State of Immunity*; John Ettling, *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South* (Cambridge, MA: Harvard University Press, 1981); Alan M. Kraut, *Silent Travelers: Germs, Genes, and the Immigrant Menace* (Baltimore, MD: The Johns Hopkins University Press, 1995); David M. Oshinsky, *Polio: An American Story* (New York: Oxford University Press, 2008); Tomes, *The Gospel of Germs*.
[58] George Dehner, *Influenza: A Century of Science and the Public Health Response* (Pittsburgh, PA: University of Pittsburgh Press, 2012), 68–72.

injured children. Members of the nascent organization Dissatisfied Parents Together used scientific and legal mechanisms to rectify what they saw as widespread medical malpractice.[59] They worked within existing institutions, operating more as consumer rights advocates dedicated to improving the DPT vaccine. Theirs was not yet a movement to avoid vaccines entirely.

The Era of Controversy was marked by the introduction of mercury-autism theory, the topic of Chapter Four. The mercury-autism debate was an international debacle, that fostered fears about vaccinations writ large. It also put doctors and public health officials on the defensive. As more parents worried about possible environmental causes of autism and other intellectual disabilities, a subset grew agitated about the quantity of chemicals and toxins in food, medicine, air, building materials, medicines, and more. Could the cumulative amount of chemical exposure have negative health effects? Vaccines, and the rapidly growing vaccine schedule for children, were targets of concern. Drawing upon the women's health and the naturalist movements of the 1970s, vaccine- hesitant mothers encouraged each other to question their doctors, to trust their maternal instincts, and to protect the sanctity of their children's bodies at all costs.

During the Era of Controversy, mainstream media initially treated vaccination as a legitimate parenting decision with two sides: for and against vaccination. However, as mercury-autism theory was increasingly debunked by established scientists in the early

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[59] Elena Conis covers the federal legislation and vaccination programs from the 1960s through the 1990s in *Vaccine Nation*. On the creation of the Vaccine Adverse Events Reporting System and the passage of the National Childhood Vaccine Injury Act of 1986, see Anna Kirkland, *Vaccine Court: The Law and Politics of Injury* (New York: New York University Press, 2016). Jacob Heller argues that the DPT safety movement was the first time that vaccine critics used "scientific arguments" to make their case. Heller, *The Vaccine Narrative* (Nashville, TN: Vanderbilt University Press, 2008), 96.

2000s, its proponents were labeled pejoratively as “anti-vaxxers.” An already-fringe and increasingly feminized movement went underground, with mothers quietly utilizing state-level religious and personal belief exemptions to allow their children to attend school unvaccinated or under-vaccinated. Vaccine hesitancy was more prevalent among mothers, who were statistically far more likely to oversee medical decisions for children, and because it dovetailed from certain popular parenting styles, such as the natural and intensive mothering movements.

Chapter Five discusses Gardasil, the first vaccine targeting HPV. Gardasil was marketed directly to teenaged girls as an optional vaccine to prevent cervical cancer. Gardasil temporarily broke with vaccine hesitancy’s legacy political bipartisanship, as evangelical Christians and Catholics during the George W. Bush presidency argued that a vaccine to prevent a sexually transmitted disease violated their morals. Preserving virginity, a different state of purity, was the topic at hand. Gardasil pushed religiously conservative people who did not generally object to vaccines to question the morality of a single vaccine. In response, liberal Democrats and the mainstream media touted Gardasil as a feminist medical technology.

It was not only cultural conservatives who objected to optional vaccines, however. Understandings of human bodies, and attitudes toward the medical treatment of them, are not evenly distributed in the American population. Chapter Six explores how racial inequities in healthcare contributed to poor trust in medical authorities and lower vaccination uptake, the term used to quantify vaccination rates. Epidemics of influenza (flu), and routine vaccination against them, provoked many adults to consider their own

immune systems and risk levels. People of color weighed the risks of race-based medical mistreatment against their perceived risks of getting the flu in their calculations about receiving voluntary flu vaccinations. Faced with such considerations, many hesitant people resisted flu shots, believing that their bodies were divinely protected through faith. Instead, they chose to trust that godly connection rather than a vaccine.

Chapter Seven addresses the measles outbreak of 2015, which was traced to an international visitor to Disneyland. This incident was the first of many epidemics of the once-eradicated disease in hotspots around the country. These outbreaks illustrated just how many children were unvaccinated or under-vaccinated all around the country. The chapter looks at how anti-vaccination sentiment led to low vaccine uptake, from the group up. Measles first affected isolated religious communities, such as the ultra-Orthodox Jewish population of Brooklyn and spiritually based Waldorf schools and then the unvaccinated living within the general population. This was the beginning of our contemporary Era of Politicization, in which people's willingness to be vaccinated correlated most to their political identification, which in turn was highly correlated to religious identity.

Chapter Eight examines the measles crisis from the top-down, arguing that an increasingly masculinized, conservative, and religious liberty-focused set of well-funded public figures were directly responsible for spreading misinformation about vaccine safety. They utilized strategies of disinformation to cause a burgeoning schism over mandatory vaccines that came to a head in 2020. They also mounted legal challenges based on religious freedom law, which they argued should cover medical freedom. This

chapter traces how religious and personal belief exemptions were coopted as core conservative issues that were cloaked in the language of religious and medical freedom, appealing to Donald Trump's voter base.

In 2020, when the Covid-19 pandemic broke out in the United States, people immediately responded along politically partisan lines. Democrats believed the pandemic was real, that Covid was deadly, and that it required a collective war-effort to fight it. Republicans largely dismissed the pandemic and its dangers and resisted public health measures, such as social distancing and wearing facemasks in public. When the first vaccines against Covid arrived in early 2021, liberal Democrats waited for hours to receive their shots, refreshed their browsers constantly to schedule vaccine appointments, and boasted about being a member of "Team Pfizer" or "Team Moderna," depending on the manufacturer of the vaccine they received.[60]

Conversely, vaccine uptake among Republicans was slow and low. Among the reasons for this was the spread of misinformation about the safety and biological mechanisms of the vaccines, the motives of their manufacturers, and the loss of religious and medical liberty. Most striking was that the Covid-19 vaccine skeptics were largely new to the cause. Many were brash and angry, flouting public health rules implemented to prevent Covid transmission. They believed conspiracy theories that vaccines would alter people's DNA, that they were a ploy for the government to implant microchips into people's arms to track their movements. Paradoxically, these concerns were less religious

[60] Luke Winkie, "Moderna Mafia? Pfizer Pham? Vaccine Factions Are Forming Online," *Vox*, April 23, 2021.

than arguments against vaccines had ever been. Yet, they were articulated and fought as religious liberty issues. White evangelical Christians devoted to Donald Trump proclaimed that mandating the Covid vaccine violated their religious liberty even though most had never expressed concern about other mandatory vaccines. Discussions of what was sacred and profane, pure and polluted, were far less prevalent. Chapter Nine argues that new vaccine-hesitant discourses revolved around demarcating political identity and libertarian-based claims to individual freedom, which were bound together with conservative Christian, white racial identities.

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If there is one thing this project has taught me, it is that there are many ways to know things.[61] This dissertation provides a historical narrative that centers religion and the spiritual dimension of culture to fill the gaps left by other accounts of vaccine hesitancy over the last three centuries in the United States. Understanding the practices and beliefs surrounding vaccination as expressions of lived religion elucidates how valuable the concepts of embodied intuition, sacrality of motherhood and childhood, medical martyrdom, and fears about tainted bodies are to the story of vaccination and vaccine abstention. They are part of the *something else*, or the religiousness, of vaccine hesitancy. The aim of this project is to tell a new story that is attentive to the subtle ways that religion has shaped vaccine hesitancy. Ultimately, I think reading history through this lens can be beneficial to physicians, nurses, public health workers, lawmakers, and

[61] Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1996), 9; Ashley Shelby and Karen Ernst, "Story and Science: How Providers and Parents Can Utilize Storytelling to Combat Anti-Vaccine Misinformation," *Human Vaccines and Immunotherapies* 9, no. 8 (August 2013): 1795–1801.

anyone deciding whether to vaccinate themselves or their children. My hope is that it aids our collective efforts to overcome both disease and distrust.

# Part I: The Era of Suspicion (1700 – 1890)

# CHAPTER ONE

## Smallpox and the Blood of the Beast

In October 1879, William Tebb, an English merchant, liberal agitator, abolitionist, advocate for vegetarianism, member of the Swedenborgian Church, and ardent anti-vaccinationist, arrived in New York City on a mission. Tebb had been invited to speak at a gathering of fellow businessmen, alternative physicians, and esoteric spiritual thinkers about the hazards of vaccination. In the lecture room of the United States Medical College on East Fourteenth Street, Tebb recounted harrowing experiences of being prosecuted thirteen times by English authorities for refusing smallpox vaccination of his daughter. In England, he told the assembled group, mandates for smallpox vaccinations were heavily enforced by the state. He had been hauled off to jail and paid many fines to protect his daughter from the evil of vaccines.

Tebb was the guest of Dr. Alexander Wilder, an early member of the Theosophical Society, the first United States-based organization devoted to spreading the wisdom of Asian religious traditions in the West.[1] Wilder was also a physician of Eclectic Medicine, a branch of botanical medicine that was briefly institutionalized during the late nineteenth century. When Wilder learned that the New York City Board of Health had passed an ordinance compelling smallpox vaccination for children, he was outraged. He quickly set out to form an anti-vaccination society in the United States,

[1] On the origins and activities of the Theosophical Society, see Stephen R. Prothero, *The White Buddhist: The Asian Odyssey of Henry Steel Olcott*, Religion in North America (Bloomington: Indiana University Press, 1996).

modeled after those founded on similar sentiments throughout England. During the meeting with Tebb, the assembled men founded the First Anti-Vaccination League of America. Tebb became the founder, and Wilder was elected president.[2] The *New York Daily Sun* ran a brief announcement about the new organization, stating, "The object of the society is to awaken the attention of the public to the evils of vaccination and to its inutility, to put an end to its practice, and to prevent legislation for its enforcement."[3]

The League formed just on the cusp of major changes in scientific thought, technology, and medical practice that allowed scientists to invent vaccines against many epidemic diseases, such as yellow fever, cholera, and diphtheria. With these successes, the purview of public health departments expanded to include compulsory vaccination, at least during times of disease outbreak. In many ways, the founders of the First American Anti-Vaccination League were prescient. They represented various esoteric, alternative, and radical worldviews during their time, but their perspectives on vaccination endured.

In the early 1900s, state and local governments were increasingly strong proponents of vaccination. Within a quarter-century of the Anti-Vaccination League's founding, the Supreme Court upheld the right of individual states to enforce mandatory vaccination laws in the case of *Henning v. Jacobson* (1905).[4] The League folded, going

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[2] "Doctors Opposed to Vaccination, An Englishman's Views on the Subject," *New York Times*, October 11, 1879. The First Anti-Vaccination League in America was founded in 1879 in New York City. A similar group, the Anti-Vaccination League of America, was founded in 1906 in Philadelphia by two wealthy businessmen who were also influenced by the Swedenborg Church. James Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth Century America* (Berkeley, CA: University of California Press, 2006), 52.

[3] *New York Daily Sun*, "American Anti-Vaccination League," October 4, 1879.

[4] Allen, *Vaccine*, chap. 3, and Colgrove, *State of Immunity*, 52, each mark the *Henning v. Jacobson* decision in 1905 as ushering in 25 years of increased anti-vaccination advocacy.

the way that many other anti-vaccination groups had since the early eighteenth century. These groups had responded to vaccination, and its cruder predecessor, inoculation, with anger, disgust, and moral revulsion. Yet, they rarely lasted beyond one generation of leadership. Although inoculation saved many lives from the ravages of smallpox, in England and North America, it had been controversial since at least the early 1700s and remained so until the 1930s. Vaccine skeptics of the late twentieth and early twenty-first centuries do not tend to refer to the days of smallpox agitation, but their contemporary arguments bear a striking resemblance to those made against the very first vaccine.

**A Brief History of Inoculation and its Discontents**

The core principles undergirding the practice of vaccination had been in place for centuries across many continents prior to English scientist Edward Jenner's invention of the first official vaccine in 1796. In Asia, India, Africa, and Europe, there are accounts of people practicing what, in English, was called "inoculation," or sometimes, "variolation."[5] Inoculation, much like vaccination, entailed placing a small amount of a weakened live virus into a healthy body to deliberately initiate an immune response that would cause the body to develop antibodies against the virus. If the person who received the inoculation were to encounter the live virus in the future, the viral antibodies would mobilize to prevent infection or to mitigate its effects.[6] Inoculation was used as a

[5] The term "variolation" is derived from "variola," the scientific name for the smallpox virus. Arthur Boylston, "The Origins of Inoculation," *Journal of the Royal Society of Medicine* 105 (2012): 309–13; René Najera, "The History of Variolation," History of Vaccines, June 5, 2021, https://historyofvaccines.org/blog/the-history-of-variolation.
[6] Meredith Wadman, *The Vaccine Race: Science, Politics, and the Human Costs of Defeating Disease* (New York: Viking, 2017), 2.

preventative measure against smallpox (variola), cowpox, and similar diseases in which blistering pustules—pox—appeared on the skin. To inoculate was to puncture a few small wounds into a healthy person's skin and deposit pus from a diseased person's pox into his blood. If successful, the healthy person would develop some pox and other mild disease symptoms that passed quickly. When unsuccessful, inoculation could be deadly and spread contagion.[7] By the eighteenth century, pox inoculation was a familiar practice, and it was often a paid service. The phrase "buying the pocks," was common in the early eighteenth century in England and Scotland.[8] Often, monarchs, nobility, and diplomats were strong advocates of inoculation, inoculating themselves and their children to prevent disease and encouraging the practice in their own countries after learning about it while traveling abroad.[9]

When Jenner invented the smallpox vaccine in 1796, he used the "lymph," or pus, from cowpox blisters as the viral component.[10] Following this discovery, smallpox vaccination in the nineteenth century included calf lymph being injected into open wounds. If funds or time were tight, officials required people to spread the lymph from one person to another by rubbing their open wounds onto the blisters of others. Infants

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[7] Michael Willrich, *Pox: An American History* (New York: Penguin Books, 2011), 36.
[8] Boylston, "The Origins of Inoculation," 311. Paul Starr lists "inoculators" as medical practitioners circa the late eighteenth century. Paul S. Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (New York: Basic Books, 1983), 48.
[9] Catherine the Great and Lady Mary Wortley Montague of Britain are commonly named examples. See Boylston, "The Origins of Inoculation"; Tony Williams, *The Pox and the Covenant* (New York: Sourcebooks, 2010), 209.
[10] Stefan Riedel, "Edward Jenner and the History of Smallpox and Vaccination," *Baylor University Medical Center Proceedings* 18 (2005): 21–25.

were also vaccinated this way.[11] Many people were repulsed by the practice, which was, to many, painful and disgusting. It generated fears that contamination with inhuman matter could fundamentally alter a person's humanity. This alteration, they argued, was unnatural, sinful, and ungodly.

Inoculation was not always accepted by the masses. In early modern England and colonial New England, many people of all socioeconomic stations reviled the practice of inoculation and fought against any moves by governmental officials to make it compulsory, even during epidemics. Organizations and individuals repeatedly spread anti-inoculation and, later, anti-vaccination sentiments through violent protests led by mobs, and through books, pamphlets, handbills, rhyming poetry, and even hymns.[12]

Across these diverse media, there were recurring themes. Regarding vaccines, resisters viewed them to be unsafe because they could cause adverse medical conditions or sicken people with the very disease they hoped to prevent, which was not untrue. They also understood vaccination to be the pollution of a person's physical and spiritual bodies. In their view, the spiritual body, or soul, was distinct yet encased within the physical body. Resisters argued that vaccination mandates, especially for children, were immoral on two counts. First, because vaccines caused this violative double pollution,

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[11] Nadja Durbach has written extensively about Victorian-era anti-vaccination beliefs in England, which were markedly like American beliefs. Nadja Durbach, *Bodily Matters: The Anti-Vaccination Movement in England, 1853-1907* (Durham, NC: Duke University Press, 2005), 3.

[12] "Anti-Compulsory Vaccination Hymn." Anti-Vaccination Society of America, 1800s. The Historical Medical Library of The College of Physicians of Philadelphia. First stanza reads: "Brothers in heart united,/Raise we our voice today/Now let our vow be plighted,/To sweep this law away./Say shall our little children/Suffer around us still,/Curs'd by a cruel custom,/Doomed by a despot will."

mandating them was immoral. And second, mandates compromised people's personal liberties and God-given parental rights to choose how to care for their children.

Following the logic of resisters, since vaccination was immoral, those who promoted or performed it acted immorally, or even out of evil. They referenced classic binaries of good and evil: divine providence versus satanic sabotage. Resisters attacked anyone who promoted vaccines, arguing that they acted upon incorrect facts or deliberately misled others to poison them on behalf of the Devil. They concluded that promoters must be shills for those who performed inoculation or vaccination. Over a century later, some vaccine critics still leveled this accusation at doctors and the pharmaceutical companies who manufactured vaccines, calling them either uninformed or intentionally deceptive.

**Pox and Providence**

In December of 1721 in Boston, Cotton Mather, a well-known pugnacious Puritan minister, heard that a smallpox epidemic was brewing in the Massachusetts Bay colony.[13] Smallpox was a tenacious disease that infected thousands of people, often arriving in the port city by trade ship. When it roared through a community, the disease was devastating—a punishment directly from God. Mather counted himself as a man of science as well as religion, and he had recently learned about the practice of inoculation

[13] For a comprehensive account of this event, see Williams, *The Pox and the Covenant*. For a concise analysis, see John B. Blake, "The Inoculation Controversy in Boston, 1721-1722," in *Sickness and Health in America: Readings in the History of Medicine and Public Health*, ed. Judith Walzer Leavitt and Ronald L. Numbers, 2nd ed. (Madison, WI: The University of Wisconsin Press, 1985).

from Onesimus, an enslaved man that he owned. Together they spoke to other enslaved people from Africa about their experiences with inoculation. Finding that it was common practice on another continent, Mather urged physicians and the city's leadership to inoculate the local population. The physicians of Boston met his suggestion with hostility and disavowed him.

One renegade physician, Zabdiel Boylston, expressed interest in learning to perform inoculation, joining forces with Mather to assemble a test cohort. This small group included a few African slaves, a white adult and child, as well as Boylston's six-year-old son.[14] Boston's selectmen were horrified. Mather and Boylston were excoriated in the press for flagrant disobedience to the selectmen, as well as ungodly experimentation. That Mather's sources of information were enslaved people was likely a contributing factor in the public's hostile reception.[15] Publicly, Mather was mocked for attempting to alter the course of God's will. Most believed that there was nothing to do except pray for penitence and quarantine the infected.

Mather, known for his rigid piety and screeds against sinners, responded forcefully. Like his critics, he believed in divine providence, but he understood God's action in the world in differently. According to Mather, God had given humans both the plague *and* the intellectual capabilities to stem the tide of death themselves. To him, those who refused these rational capabilities out of fear of inoculation were enveloped by a "Satanic fury."[16] This panic and rejection of a preventative measure against a potentially

[14] Williams, *The Pox and the Covenant*, 75.
[15] Williams, 117.
[16] Williams, 91.

fatal disease was, in Mather's eyes, unscientific and unresourceful—two loathsome qualities he believed contradicted God's will.[17] Despite his seemingly unfettered confidence in inoculation, Mather struggled with the decision to inoculate his adult son, Samuel, who had never had smallpox before.[18] Ultimately, Samuel was inoculated and survived the epidemic. Hundreds of people died from smallpox during the Boston epidemic of 1721-1722. Boylston, with Mather's support, inoculated many Bostonians covertly, and he collected and published data about the efficacy of inoculation. He also calculated the number of lives the procedure had saved.

Over a century later, in 1880, anti-vaccination organizers in the London Society for the Abolition of Compulsory Vaccination critically analyzed Boylston's work, disputing his statistical calculations, and undermining his claims.[19] The strategy of reworking data sets with the intention of finding contradictory evidence became common for vaccine skeptics. Anti-vaccinationist leaders sought to establish credibility by emulating the aesthetics of science to present their arguments. Their aim was to plant doubt in people's minds that vaccination was more harmful than its supporters claimed. The tactic of using Boylston's own data set to draw the opposite conclusion was impactful because it characterized scientific practice as shaky and inconclusive. Anti-

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[17] Williams, 83. Historian Robert D. Johnston described this as evidence of a "primal libertarianism" that bolstered democratic beliefs in parental decision-making over children's medical affairs. For Johnston, this democratic philosophy blossomed in the Progressive era. See Robert D. Johnston, "Contemporary Vaccination Movements in Historical Perspective," in *The Politics of Healing* (New York: Routledge, 2003), 260–61.

[18] Williams, *The Pox and the Covenant*, 123.

[19] London Society for the Abolition of Compulsory Vaccination, *The Vaccination Inquirer and Health Review* (1880); Tebb published *A Century of Vaccination and What it Teaches* in which he provided data and statistics from epidemics of smallpox in the United States and England to disprove claims that inoculation and vaccination were effective at stopping disease.

vaccine organizers aimed to prove that vaccine proponents applied their own biases to findings even though scientists presented them as incontestable.

**Vaccinators as Vampires**

During the nineteenth century, a transatlantic culture of anti-vaccine agitation spread throughout England, Canada, and the United States. Anti-vaccine organizations, such as the American Anti-Vaccination League, fought new laws aimed at mandating vaccination in all three of those countries. They circulated literature condemning vaccines, creating a repository of shared resources and ideas. Many such organizations were short-lived. As single-issue initiatives that sprang up to counter local vaccination efforts, they often withered quickly. Yet, their leaders, ideas, tactics, and written materials continued to circulate between groups. These leagues often hosted events with speakers such as Alex M. Ross, the Montréal-based editor of the pamphlet, *The Anti-Vaccinator, And Advocate of Cleanliness*, which he published in English. Ross was part of a subset of anti-vaccinationists who promoted sanitation and cleanliness initiatives as the only ways to prevent disease. This line of thinking took to heart the claim that "cleanliness is next to godliness," an adage that was printed on the front-page header of *The Anti-Vaccinator*.[20]

[20] Alex M. Ross, "Small-pox." *The Anti-Vaccinator, And Advocate of Cleanliness* (October 1885). The sanitation movement was part of the Social Gospel in American Protestantism. On early twentieth century sanitation practices, see Kraut, *Silent Travelers* (1995); Naomi Rogers, *Dirt & Disease: Polio Before FDR* (New Brunswick, NJ: Rutgers University Press, 1992); Brent Rushwick, *Almost Worthy: The Poor, Paupers, and the Science of Charity in America, 1877-1917* (Bloomington, IN: Indiana University Press, 2012).

Vaccines, pro-sanitation activists argued, caused more disease than they could possibly prevent. After all, vaccines literally spread disease. If disease could be prevented with good hygiene and clean food and water, they said, then compulsory vaccination was a "medical delusion" and a "monstrous fallacy."[21] For Ross and his readers, this fallacy stemmed from the immorality that "vaccinators" perpetrated when they stated that vaccines were safe and effective. This made vaccinators deluded, deceitful, or both, qualities that were reprehensible for a medical provider. Anti-vaccinationists assumed the moral high ground in asserting that vaccinators were debased authoritarians who usurped parental rights. In an 1885 editorial, Ross denounced "the Vaccinators [who] deny all connection between the Vaccination and the death, and pronounce death from some other cause. The difficulty is that the witness of the deaths are *only mothers and fathers*, and their testimony is of no weight in scientific scales."[22] Ross' argument was both a historical and an ethical one. He was pointing to a historical shift in which biomedicine was becoming the mainstream paradigms of healthcare. Parental testimonies carried less scientific and cultural authority than they once had. As a result of these societal changes, he argued, the suffering of bereaved parents was blood on vaccinators' hands.[23]

The authors of anti-vaccine literature in the late nineteenth century did not appear to grapple with the potentially life-saving uses of vaccination. Rather, they saw tampering with blood and bodily agency as inherently evil. As local governments passed

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[21] Ross, "Small-pox." *The Anti-Vaccinator, And Advocate of Cleanliness*, October 1885.
[22] Ross, "Small-pox." *The Anti-Vaccinator, And Advocate of Cleanliness*, October 1885.
[23] Personal risk and experience versus population risk and experience is a common binary that epitomizes one of the core moral issues that vaccine skeptics have carried since the earliest days of vaccination. See Arthur Allen, *Vaccine: The Controversial Story of Medicine's Greatest Lifesaver* (New York: W.W. Norton, 2007), 19.

compulsory smallpox vaccination laws throughout the early and mid-nineteenth century––often for soldiers and schoolchildren—those in opposition argued that the vaccine caused humans to become animalistic, idiotic, foul, and "crippled."[24] An English handbill from 1881 evoked the jarring image of pierced skin and oozing blood in true Gothic style, likening a vaccinator to "The Vaccination Vampire," while other cartoons depicted people turning into cows—sprouting horns and hooves—after receiving the cowpox-derived Jenner smallpox vaccine.[25] Horns and hooves were indicative of the Devil, who was often depicted with both, and they also indicated that vaccination transformed the human body into something animastically un-human—half-person, half-beast. Fears that mixing animal with human was corruptive were unique to the Era of Suspicion because of the use of cow lymph to make the smallpox vaccine. However, the idea that vaccine serums forged essential changes in the body endured.

Central to all these arguments was the conviction that unvaccinated blood and unvaccinated bodies were naturally pure. They became polluted when impure vaccines flooded those bodies. Throughout anti-vaccine literature of the period, both informational and satirical, authors employed purity multidimensionally. For them, purity was not merely a medical term. Yes, purity meant a biological state of healthfulness and a

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[24] Durbach, *Bodily Matters: The Anti-Vaccination Movement in England, 1853-1907*, 114. For more on mandatory vaccination laws in the early-mid nineteenth United States, see Jess McHugh, "First U.S. Vaccine Mandate in 1810 Launched 200 Years of Court Battles," *The Washington Post*, December 12, 2021.

[25] Durbach, *Bodily Matters: The Anti-Vaccination Movement in England, 1853-1907*, 138. Erica X. Eisen, "The Mark of the Beast: Georgian Britain's Anti-Vaxxer Movement," *The Public Domain Review*, April 28, 2021.

physical state of cleanliness. But it also meant a spiritual state of sinlessness and a racial state of humanness which was depicted as whiteness.

A booklet written by W. Halket and published by the Medical Reform Society of London bore the ranting title, "Compulsory Vaccination!! A Crime Against Nature!! An Outrage Upon Society!! A Libel Upon the Wisdom and Goodness of the Creator!! A Medical Delusion!! A Legislative Blunder!! And a Dark Blot Upon Our Civilization!!"[26] In its pages, Halket conveyed each of these four understandings of purity—as sin, cleanliness, health, and whiteness—in his appeals to parents. He prompted readers to revile infant vaccinations, urging them to:

> Look at an infant with pure blood, born of pure and healthy parents, its skin clear and shining like a shilling fresh from the mint, considered as it is the emblem of purity, and have also before you a rotten cow suffering from pox…Does not the whole instinct of your nature cry out against bringing the rottenness of that cow in contact with the pure blood of your child—rottenness not even fit to be in the blood of a beast.[27]

Surely, Halket's juxtaposition between a baby's pure blood and that of a diseased cow drew on shock value and commonsense horror. However, it also utilized Christian theology. Illness—and by extension, vaccination—was equal to sinfulness, the degenerate state of the soul. If good health, pure blood, and spiritual cleanliness were all one-and-the same, then individuals achieved good health by practicing upright moral actions. In other words, a sinless person would not need a vaccine to keep them well. Halket and others applied a conservative Christian theology to vaccination in which

[26] W. Halket, "Compulsory Vaccination!!" Medical Reform Society of London. London: G. Meyers (n.d.).
[27] Halket, "Compulsory Vaccination!!" 15.

external actions and comportment, good or bad, represented the quality and character of the soul.

Christian imagery and theology pervaded nineteenth century arguments, as anti-vaccinationists rendered the act of vaccination ungodly. In anti-vaccinator Thomas Duxbury's collection of rhyming poetry, *Vaccination and Other Rhymes*, published in 1887, the ironically named "Pure Lymph," concluded with the following stanzas:

> Let parents then avoid this sin,
> Keep youthful blood from harm
> And poison not the fount of life
> But scorn the fatal charm.
>
> Then man, for whom our Christ hath died,
> Will have some chance to rise,
> And reach the home from whence he came,
> His God and Paradise.[28]

Duxbury urged parents to object to vaccinating their children using a soteriological argument—one concerning how to attain salvation after death. He turned vaccine refusal into an act with communal benefits rather than a selfish choice. Vaccination should be considered a sin that compromised not only individual souls, but also those of all Christians. Duxbury's claim that those who have been vaccinated cannot be resurrected may have been hyperbolic. But, even if read as propaganda, it illustrated how the use of religious metaphors imbued vaccination with moral consequences.

Anti-vaccine agitators and publishers used this binary to benefit their cause. One of their most persuasive tools was to spotlight orthodox physicians trained and licensed in biomedicine who no longer believed in vaccination. An article in *The Anti-Vaccinator*

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[28] Thomas Duxbury, *Vaccination and Other Rhymes* (London: Blackburn, 1887).

about smallpox included citations from ten British doctors who had allegedly stopped vaccinating patients.[29] The conversion narrative in which traditionally-trained physicians became disillusioned by vaccine practices or who considered them unsafe carried—and continues to carry—heavy weight for vaccine skeptics. The argumentative strategy was convincing because it twisted the deference that people held for the authority of medical training back on itself. In essence, orthodox doctors who had been converted to anti-vaccination beliefs were seen as the most trustworthy and unbiased spokespeople for their cause because they had the most prestige, and therefore the most to lose by disavowing orthodox, state-sanctioned vaccine practices.

**Sanitation and Socialized Medicine**

At the turn of the twentieth century, the stance physicians took on vaccines identified them with one of two groups: biomedical orthodoxy or alternative medicine.[30] Physicians who opposed vaccination were increasingly ostracized from the institutions and privileges of the budding biomedical profession, which included membership in the American Medical Association, hospital privileges, and official licensure.[31] Vaccines gained state legitimacy in large part because municipal leaders mandated their use to manage public health emergencies. Disagreements over vaccination bolstered both

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[29] Ross, "Small-pox," *The Anti-Vaccinator*, October 1885.
[30] Alternative health practices included homeopathy, osteopathy, midwifery, botanic medicine, Thomsonism, hydropathy, and myriad forms of folk medicine. Starr, *The Social Transformation of American Medicine*, 95–100; Colgrove, *State of Immunity*, 56; Martin Kaufman, "The American Anti-Vaccinationists and Their Arguments," *Bulletin of the History of Medicine* 41, no. 5 (September 1, 1967).
[31] Paul S. Starr defines a profession as an occupation that "sets its own rules and standards." Starr, *The Social Transformation of Medicine*, 80. On the social climate of professional medical authority, see Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1983), 142.

orthodox and unorthodox health practitioners, owing to the controversial nature of vaccination. Homeopaths, osteopaths, and chiropractors were often opposed to vaccination and lost status among the medically orthodox.[32] But they simultaneously gained status among consumers of "alternative" medicine.

Anti-vaccination agitators were often part of larger social and urban reform efforts which argued vehemently for sanitation as the key to protecting the public's health. Late nineteenth century sanitation programs promised to remove dirt and "filth" from impoverished urban spaces such as tenements, and to rid the air of "impurities." In the process, they would prevent disease. At least in part, pro-sanitation arguments were based on the principles of germ theory and contagion, whether they knew to refer to them in this way or not.[33] Communicable diseases did spread through the air as germs passed from person to person. Factory smoke, unmanaged waste, and other environmental pollutants also sickened people. As such, sanitation efforts were for the benefit of the community, part of social uplift programs that were often rooted in the Protestant Christian social gospel movement. However, sociologist Paul Starr has argued that as germ theory and bacteriology, or the study of bacteria, increasingly influenced solutions to public health problems, officials shifted their focus from environment to individual.[34]

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[32] James C. Whorton, *Nature Cures: The History of Alternative Medicine in America* (New York: Oxford University Press, 2002).

[33] Stephen Prothero argues that cremation practices began to come into use in the United States in the late nineteenth century, in part as a sanitary effort during epidemics for ridding a "pure" society from the "pollution," and later, the "contagion" of disease. See Stephen Prothero, *Purified By Fire: A History of Cremation in America* (Berkeley, CA: University of California Press, 2001).

[34] Starr, *The Social Transformation of American Medicine*, 181.

Sanitation advocates need not have viewed vaccines and urban cleaning as mutually exclusive, yet many did. Physicians viewed vaccination as an individual rather than a communal act, more akin to taking medicine, even though we now know that they would only benefit the public's health if they were treated as a collective endeavor. In northeastern metropolitan centers, vaccines against yellow fever, cholera, diphtheria, and other diseases came into common use during the first decades of the twentieth century by physicians and were stocked by local health departments. According to some anti-vaccination logic of the time, the introduction of these vaccines signaled an appalling shift in policy priorities. Now, the impurities of the environment were being ignored and the biomedical approach to public health was an even more invasive spread of impurity via injections that entered the bloodstream directly.

We cannot overlook that during the early decades of the twentieth century, public health efforts, which were highly localized, were imbued with prejudices about what constituted filth. On the one hand, cities were rife with diseases. Improvements to building ventilation, garbage disposal, sewage systems, and drinking water purification were beneficial and necessary. On the other hand, as many scholars have shown, the language used to discuss disease, contamination, and filth was also used to describe ethnic immigrant groups who were considered non-white. Historian Alan M. Kraut has argued that public health initiatives to prevent disease were a form of "medicalized nativism" motivated by prejudices against foreign-born people and wielded by local

governments to scapegoat the newest immigrants who came to a city.[35] Foreign-born immigrant groups were often accused of bringing epidemic diseases to the United States. Irish in the 1840s were widely blamed for cholera epidemics, Jews were accused of bringing tuberculosis, and Italians brought the scourge of polio.[36] Nativist, anti-immigrant beliefs about disease could inform public health actions. In the summer of 1916, the New York City Health Department cancelled the *festa* of Our Lady of Mount Carmel Church, an Italian American Catholic celebration that included a parade, to prevent the spread of polio during an epidemic. This action was likely an instance in which ethnic prejudice and bigotry were married to a prudent public health strategy.[37] Unsurprisingly, Italian immigrants were often skeptical or terrified of mass vaccination efforts, and they often went to great lengths to avoid shots when officials visited their neighborhoods for campaigns to fight numerous diseases.[38]

By World War I, organized anti-vaccine agitators shifted away from using communitarian moral arguments toward rights-based, individualistic ones. Using the language of democracy and capitalism, a nascent "medical liberty" movement framed individuals as medical consumers who should have the right to choose the medical care they wished to receive or give to their children.[39] As the rates of disease decreased during

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[35] Alan M. Kraut, *Silent Travelers: Germs, Genes, and the Immigrant Menace* (Baltimore, MD: The Johns Hopkins University Press, 1995), 2.
[36] Oshinsky, *Polio*, 21.
[37] Kraut, *Silent Travelers*, 110.
[38] Paul A. Offit, *The Cutter Incident: How America's First Polio Vaccine Led to the Growing Vaccine Crisis* (New Haven, CT: Yale University Press, 2007), 4–9.
[39] Tolley argues that medical liberty leagues "appropriated and expanded the constitutional arguments advanced by the nineteenth-century anti-vaccination societies, arguing that Americans had a constitutional right to choose their own medical treatment and a right to freedom from medical interference." Tolley, "School Vaccination Wars," 185.

these years, thanks in large part to the success of vaccines, those who opposed vaccines focused increasingly on highlighting and exaggerating the risks and dangers of vaccination—both medical and social.[40] Anti-vaccinationists once again feared increased governmental control over medical care and the use of state compulsion to force vaccination on the masses. The National League for Medical Freedom, the Citizens Medical Reference Bureau, and the American Medical Liberty League came and went, latching onto specific issues of the day and, depending on their leadership, to other social or economic concerns, including anti-unionism and opposition to compulsory health insurance, which in their view threatened employers, insurers, and doctors.[41]

Medical freedom was also appealing to marginalized groups who viewed compulsory vaccination as frighteningly paternalistic. Escaped slave and abolitionist Frederick Douglass supported autonomy over one's own body and medical care, noting that he was "on the side of [vaccine] freedom" in a letter to an anti-vaccine doctor. Free Black people, Native Americans, Mexican Americans, and other immigrant communities were as well.[42] Similarly, a vibrant anti-vaccination movement spread throughout the Western states where libertarian instincts were deeply held. In 1900, the Church of Jesus Christ of Latter-day Saints (LDS), "reluctantly" offered an opinion on the controversial topic of vaccination in a formal letter to parishioners, "suggesting and recommending that the people generally avail themselves of the opportunity" to be vaccinated against

[40] Allen, *Vaccine*, 102-3; Colgrove, *State of Immunity*, 46-47; Tolley, "School Vaccination," 181, 185.
[41] On the Progressive era push for public health insurance and labor reform, see Starr, *The Social Transformation of American Medicine*, 243–57.
[42] Johnston, "Contemporary Anti-Vaccination Movements in Historical Perspective," 260.

smallpox.[43] And in Portland, Oregon, agitator Lora Little modeled her activism on the fight against slavery, publishing an anti-vaccination newspaper called *The Liberator*, which she named after William Lloyd Garrison's abolitionist publication.[44]

By the early years of the 1930s, anti-vaccine sentiment waned. The scientific breakthroughs of biomedicine, including its institutionalization as a profession, industry, and the basis of public health, had practically eliminated smallpox and numerous other endemic diseases. The world was at war again, focusing Americans' attentions overseas and toward endeavors that sponsored national unity and patriotism.[45] One of these unifying causes was the fight against polio, a disease that seemed to evade the logic of germ theory and which contradicted engrained beliefs about cleanliness, class, and contagion. By 1953, polio had become the nation's second greatest fear, surpassed only by the atomic bomb.[46] Americans were eager for a polio vaccine.

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[43] Lorenzo Snow, "LDS First Presidency on Smallpox Vaccination," *Deseret Evening News*, November 17, 1900.
[44] For a detailed discussion of Little's work, see Robert D. Johnston, "The Myth of the Harmonious City: Will Daly. Lora Little, and the Hidden Face of Progressive-Era Portland," *Oregon Historical Quarterly* 99, no. 3 (Fall 1998).
[45] Allen, *Vaccine*, 161.
[46] Charlotte DeCroes Jacobs, *Jonas Salk: A Life* (New York: Oxford University Press, 2015), 134; Jane S. Smith argues that polio and the threat of an atomic bomb were closely linked in parents' minds because they were both associated with children going to school. Jane S. Smith, *Patenting the Sun: Polio and the Salk Vaccine* (New York: William Morrow & Co., 1990), 159.

# Part II: The Era of Promise (1890 – 1997)

# CHAPTER TWO

## Polio and the Planned Miracle

Church bells rang out across the country in celebration on the morning of April 26, 1954, as 1.8 million second-grade children rolled up their sleeves to receive a shot of the first vaccine developed to provide immunity against poliomyelitis (polio).[1] The children, dubbed the "Polio Pioneers," lived across forty-five states, and they were participating in the 1954 Poliomyelitis Vaccine Field Trial.[2] The eagerly anticipated test of the efficacy of the brand new polio vaccine developed by Jonas Salk was funded almost entirely by the National Foundation for Infantile Paralysis. The National Foundation, commonly known by its slogan, "March of Dimes," was a non-profit organization founded by future president Franklin Delano Roosevelt, who was disabled by polio.[3] On that April day, no one knew which of the children had received the first polio vaccine and who had received a placebo. The point of the test was simple. Would

[1] Approximately 500,000 children received the Salk vaccine out of a total of 1.8 million participants. The rest received a placebo.
[2] Robert Coughlan, *The Coming Victory Against Polio* (New York: Simon & Schuster, 1954); "Polio Pioneers," *New York Times* (May 11, 1954); Oshinsky, *Polio*, 190. Participants in the trial received cards from March of Dimes certifying them as a "Polio Pioneer." https://www.polioplace.org/history/artifacts/polio-pioneer-card
[3] I use "National Foundation" and "March of Dimes" interchangeably in this chapter. The National Foundation for Infantile Paralysis (NFIP) was incorporated in 1938 and officially changed its name to the March of Dimes Birth Defects Foundation in 1979. "March of Dimes," coined by the comedian Eddie Cantor, was used as a fundraising slogan beginning in 1937 for the NFIP's annual campaigns. As a result, the names March of Dimes, National Foundation for Infantile Paralysis, and the "National Foundation," were virtually interchangeable throughout the organization's history. "Origin of Our Name," March of Dimes, Accessed August 4, 2022, https://www.marchofdimes.org/mission/eddie-cantor-and-the-origin-of-the-march-of-dimes.aspx; Oshinsky, *Polio*, 54-55.

the children who received the vaccine be spared from the paralyzing grip of the disease, nicknamed "The Crippler," when the heat of summer arrived?[4]

The specter of polio loomed over family life during the 1930s, 1940s, and 1950s. One percent of polio patients were paralyzed by the disease, and images of children in leg braces and wheelchairs, or trapped within the hulking respirators known as iron lungs, were deeply scarring.[5] As a survivor recalled, "Polio was the robber of hope for several generations of children. There were many other diseases that were bad for America, but polio broke its heart."[6] Yet, in 1954, after decades of increasing rates of polio cases, Americans were overwhelmingly hopeful that a vaccine was on its way.[7] After the trial data was collected during the peak epidemic period that summer, it took nearly a year for a team of independent scientists to evaluate whether the vaccine was safe and effective. It was intense work. The lead scientist in charge of the blind review, Thomas Francis at the University of Michigan, received personal phone calls alerting him whenever a child in the study diedof polio or other causes.[8] Ultimately, Francis deemed the shots "safe, effective, and potent."[9]

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[4] *The Crippler*, starring Nancy Reagan, produced for the NFIP in 1940, was a short film used for fundraising at movie theaters. While it played, "March of Dimes mothers" collected donations. Oshinsky, *Polio*, 68.

[5] Daniel J. Wilson, "Braces, Wheelchairs, and Iron Lungs: The Paralyzed Body and the Machinery of Rehabilitation in the Polio Epidemics," *Journal of Medical Humanities* 26, no. 2/3 (Fall 2005), 173-190.

[6] Mark Sauer quoted in Nina Seavey et al., *A Paralyzing Fear: The Triumph Over Polio in America* (New York: TV Books, 1998), 19.

[7] A Gallup survey from February 1954 found that "86 percent of Americans thought a cure for polio would be found." Statistic cited in Richard Seltzer, *US Public Opinion Since the 1930s* (Lexington, KY: Lexington Books, 2022), 59; Poliomyelitis Vaccine Evaluation Center, "Evaluation of the 1954 Field Trial of the Poliomyelitis Vaccine" (Ann Arbor, MI: University of Michigan, April 1957).

[8] Five percent of the participating children died of polio and hundreds died of other causes, such as accidents. Oshinsky, *Polio*, 201.

[9] Thomas Francis quoted in Debbie Bookchin and Jim Schumacher, *The Virus and the Vaccine* (New York: St. Martin's Press, 2004), 46.

The Salk polio vaccine field trial represented the pinnacle of public trust in twentieth-century biomedicine—the Era of Promise. As vaccine hesitancy reemerged in the 1980s and grew louder in the 1990s, baffled commentators often presumed that vaccine hesitancy, or "anti-vaccine" sentiments, were new in American life. In fact, most assumed that vaccine trust was the norm and hesitancy the departure—a result of sudden bouts of misinformation or of a faddish distrust in doctors. In truth, the widespread public acceptance of the polio vaccines that became available in the 1950s (a killed-virus injectable created by Jonas Salk) and the 1960s (a live-virus ingestible developed by Albert B. Sabin) were the true anomalies. What was extraordinary was the lack of controversy and exceptionally high levels of faith that Americans had in these vaccines. They wanted a vaccine to combat polio, and they did not hesitate to vaccinate their children once it was available.

This public trust was not there when life-saving shots were developed during the nineteenth century for far deadlier diseases, including smallpox, influenza, yellow fever, and cholera.[10] Two cultural trends catalyzed this midcentury high-water mark in goodwill toward vaccines, and toward biomedicine more generally. Both were direct outcomes of World War II. The first was the growing formation of a "civil religion," a national religio-political collective identity. A civil religion comprises a set of symbols, civic rites, and shared values that imbue a nation with meaning. Although the term "civil religion" is not widely used in popular conversation, its components became ubiquitous in American

[10] Stephen P. Strickland, *Politics, Science, and Dread Disease* (Cambridge, MA: Harvard University Press, 1972), ix.

culture in the 1940s and 1950s, thanks to an alliance between liberal Protestant clergy and government officials.

During World War II these elites aimed to create a national religio-political identity. The result was an understanding of the United States as a three-religion nation of Protestants, Catholics, and Jews united in their shared commitments to God and country. Why? To encourage patriotism through a shared "Judeo-Christian" heritage that united native-born and immigrants alike under a moral canopy. This vision of unity was aspirational and relatively effective. The war effort had already established a communitarian attitude, and the National Foundation capitalized on it deftly. By elevating national interests over individual or familial interests, tri-faith and other ecumenical efforts paved the way for Americans participation in the National Foundation's fight against polio. In every fundraising endeavor for the organization, defeating the disease was imbued with sacred and civic value. The Salk vaccine must be a success.

The second reason that the polio era diverged from other vaccine eras was widespread trust in science and the scientific process. This trust yielded a support and respect for scientists that bordered on sanctification.[11] The military dominance of the United States in World War II, combined with paradigm-shifting scientific and medical developments during the first half of the twentieth century, had fostered a national

[11] Robert N. Bellah, "Civil Religion in America," *Daedalus* (Winter 1967). Bellah theorized the "American civil religion" as a set of beliefs, symbols, and rituals broadly based on Christianity. They enshrine a nation "under God," the symbol of the flag, the Constitution and Declaration of Independence, and the rites of inauguration. My use of "civil religion" draws on Bellah's, but it applies the concept to the 1940s and 1950s, aiming to explain certain events and movements that created, and made sense because of, the existence of a civil religion.

devotion to science. Influential Christian leaders embraced science as a manifestation of God's creation, corporate leaders sought to operate their businesses "scientifically," and journalists chronicled scientific achievements as leading news. In this context, Americans idealized polio researchers, particularly Salk, but also the Nobel Prize-winning team of scientists who discovered how to grow poliovirus in a laboratory, making Salk's work possible.[12]

**A Brief History of the Polio Vaccines**

Polio is a viral intestinal infection that results from contact with human fecal matter and often caused by unsanitary conditions, including unwashed hands, shared food items, and contaminated food and water. It is spread from person to person, and in roughly one percent of cases, the virus enters the brain stem and central nervous system, causing damage and disease to the nerves, motor neurons, and muscle fibers, causing paralysis.[13] Paralytic polio can be temporary or permanent. It can also be deadly.

Polio is most deadly to infants and children, although adults also suffer and die from it. During the peak polio era, summer was the season of "dread disease," and the prototypical case was a "sturdy" young child who "played hard" on a hot summer day—running, swimming, biking. The child, who had no symptoms of illness in the morning, would have a high fever by evening, along with an unyielding headache, back stiffness, and restlessness. Within three days, the fever would subside, and the child would, in the

[12] These scientists were John Enders, Thomas Weller, and Frederick Robbins. Abraham, *Polio: The Odyssey of Eradication*, 41-42; Wadman, *The Vaccine Race*, 25.
[13] "Humans are the only known species to have cells with the receptors poliovirus needs to start an infection," Thomas Abraham, *Polio: The Odyssey of Eradication* (London: Hurst, 2018), 11; Oshinsky, *Polio*, 8-9.

best cases, have muscle weakness that improved after a few weeks before full recovery. In the worst cases, patients' muscle weakness progressed, leaving them paralyzed.[14] Paralysis started in the legs and crept upwards in the body, making it impossible for some patients to use the muscles needed to breathe. In these cases, patients would require an iron lung machine, which used mechanical air pressure fluctuations to mimic the diaphragm muscle as it expands and contracts to breathe.[15]

Polio was an especially evasive virus for researchers in the first half of the twentieth century for two reasons. First, because the most severe cases of polio affected the nervous system, researchers did not suspect that the virus was primarily intestinal and acquired orally. Second, during the 1940s and 1950s, polio affected populations who were unaffected by prior epidemics.[16] In earlier outbreaks, such as the epidemic of 1916 in New York City, polio was blamed on Italian immigrants and other "cellar-dwellers" who lived in the Brooklyn neighborhood known as "Pigtown."[17] But, by the 1940s, polio was more commonly found in middle-class suburbs.[18] Polio had come to affect more suburban, middle-class children than urban children, which contradicted the belief that

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[14] Physician Charles Caverly of Otter Valley, Vermont, first recorded this phenomenon in the United States in 1894. After an epidemic hit his town, Caverly published his observations in the *Yale Medical Journal*. He outlined three types of cases that he witnessed, including: "the sturdy child." See Charlotte DeCroes Jacobs, *Jonas Salk: A Life* (New York: Oxford University Press, 2015), 65-66.

[15] Jacobs, *Jonas Salk*, 65-66. The biography of Frederick B. Snite, one of the first paralytic polio patients to use an iron lung, included description of how the machine functioned. See Leonard C. Hawkins, *The Man in the Iron Lung: The Frederick B. Snite, Jr. Story* (New York: Doubleday, 1956).

[16] Coughlan, *The Coming Victory Over Polio*, 22, 47; Rogers, *Dirt & Disease*.

[17] Oshinsky, *Polio*, 21-22; Jacobs, *Jonas Salk*, 68. Paul A. Offit, *The Cutter Incident: How America's First Polio Vaccine Led to the Growing Vaccine Crisis* (New Haven, CT: Yale University Press, 2007), 6. Roughly 7,000 people died in the 1916 polio epidemic. Despite the containment of "Pigtown," the disease spread outwards from Brooklyn into wealthy suburban areas.

[18] For a state-based case study, see Heather Green Wooten, *The Polio Years in Texas* (College Station, TX: Texas A&M Press, 2009).

germs would spread less easily in more sanitary and hygienic environments. As a result, polio disrupted cultural understandings of germ theory and the importance of sanitation—a marker of socioeconomic and racial privilege. It took many more decades after the 1916 epidemic for scientists and historians to realize that polio was so endemic in urban centers that people had developed immunity from constant exposure.[19] When "wild polio" hit a mostly white, middle-class, suburban town, an epidemic erupted because superior sanitation systems had prevented baseline exposure to the virus, leaving no one with immunity. Older children and young adults were increasingly afflicted, unlike in the past when polio had been most associated with infants.

From 1920 to 1952, polio cases increased roughly ten-fold, peaking in 1952.[20] The mysterious discrepancies helped to catalyze a communal response to the climbing caseloads. Despite this drastic increase, the federal government did not prioritize polio research funding, meaning that almost the entire polio effort was privately led. In 1953, the year before the first vaccine trial, the National Institutes of Health (NIH) spent roughly $75,000 on polio research, compared to the private National Foundation, which spent $2 million.[21]

The path to inventing a vaccine against polio has been widely remembered as a race between Salk and Sabin.[22] Although there were many other scientists working toward this goal, Salk was best documented in the press. This was largely because Salk, a

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[19] Abraham, *Polio: The Odyssey of Eradication*, 17; Seavey et al., *A Paralyzing Fear*, 22.
[20] Oshinsky, *Polio*, 162.
[21] Oshinsky, *Polio*, 189.
[22] Wadman, *The Vaccine Race*, 24-25. There are many comprehensive historical accounts of the polio "vaccine race," which included other scientists besides Salk and Sabin. Also see Jacobs, *Jonas Salk* (2015); Jane S. Smith, *Patenting the Sun: Polio & the Salk Vaccine* (New York: William Morrow, 1990).

scrappy researcher at the University of Pittsburgh, was funded entirely by the National Foundation. As the National Foundation threw its institutional weight and social capital behind Salk, he received tremendous media attention, and each new promising breakthrough in his lab grabbed national headlines. Conversely, Sabin, who worked at the University of Cincinnati, was convinced that Salk's inactivated, or "killed-virus," injectable vaccine (IPV) would not provide enough immunity to prevent polio. Taking a different approach, Sabin was determined to create an oral, weakened "live-virus" vaccine (OPV) that included small amounts of living poliovirus. Sabin was vocal about his doubts, and the press covered his rivalry with Salk like a long-distance race.[23] Salk reached the finish line first with an injectable vaccine that required three shots, which was used for the national field trial in 1954.

Once the trial was completed and Salk's vaccine approved in 1955, the rollout was rocky. There was not enough product to vaccinate the country, and without the government's aid, there was also no infrastructure for mass vaccination. Except for immunizations for soldiers, funded by the military, vaccines did not fall under the purview of the federal government. President Dwight Eisenhower, fearful of any whiff of socialized medicine, did not support a national approach to polio vaccination and refused

[23] It is important to differentiate between the "external" perceptions of the public and the "internal" perceptions within the scientific community. Much reporting and scholarship examines the complexities of Jonas Salk's and Albert Sabin's relationships with colleagues and within the field of virology and medical research. For example, while the media touted Salk's success, many colleagues doubted his vaccine and considered him egotistical. Conversely, Sabin was disliked by the press but highly respected in his field. See Frank Cohn, "Dr. Salk Tells Skeptics of His Vaccine" in *Four Billion Dimes*, Ch. 13; Jacobs, *Jonas Salk*, 118-119; Oshinsky, *Polio*, 166-167; Bernard Seytre and Mary Shaffer, *The Death of a Disease* (New Brunswick, NJ: Rutgers University Press, 2005), 73. On the feud between Salk and Sabin see Bookchin and Schumacher, *The Virus and the Vaccine* (2004).

to have the federal government underwrite the cost of vaccine manufacturing.[24] This insistence on privatized medicine also meant that the government bore no responsibility for vaccine quality control or safety. Only after a public outcry that Eisenhower was mishandling polio vaccine rollout did he sign the Poliomyelitis Vaccination Assistance Act of 1955, which provided some funding to the effort and empowered the CDC to monitor the administration and circulation of the vaccine.[25]

Within one month of the Salk vaccine going into general use, a critical manufacturing error in one facility threatened the success of the entire vaccination campaign. At the end of April 1955, forty thousand recently vaccinated children in California and Idaho became ill with polio.[26] Two hundred of them were permanently paralyzed, mostly in their arms where they received the injection. Ten children died. The infected children were contagious, and they spread polio to family members. The CDC quickly tracked the source of these infections to faulty vaccine batches manufactured by Cutter Laboratories in California and shut down production there. It took many years of investigation to determine the numerous scientific and manufacturing errors that collided to cause the crisis.[27] But it took only days for the public's enthusiasm for the Salk vaccine to disappear.

During the three months surrounding the Cutter Incident, as newspapers called this debacle, liberal Protestant magazine *The Christian Century* reported on the vaccine

[24] Oshinsky, *Polio*, 219.
[25] Conis, *Vaccine Nation*, 5.
[26] For a detailed account of the events of the "Cutter Incident," see Offit, *The Cutter Incident* (2005).
[27] Offit, *The Cutter Incident*, 3.

just three times. In April 1955, the publication called the success of the vaccine "a miracle."[28] Editors lauded Salk and every scientist who contributed to the vaccine's creation as selfless. They also lionized the National Foundation and its donors for raising millions of dollars for research. One month later, at the height of uncertainty over the ill, yet vaccinated, children, the editors suggested that "confidence once lost is never easily regained" and wondered if "the children affected [were] victims of an American lust for spectacular achievements." They went on to insinuate that the National Foundation had rushed the vaccine development process to ensure Salk's victory and its own popularity.[29] Less than two weeks later, the magazine reported that vaccination was resuming and that "the near-panic which swept the country when reports multiplied of death and paralysis after the first inoculations is passing and should presently disappear," although "popular resentment" had flared up toward the federal government for mishandling of the vaccine rollout.[30] These *Christian Century* articles charted the broader shifts in public sentiment––from joy, to fearful rage, to renewed optimism.

Of course, overwhelming excitement and faith in the Salk vaccine was not universally held. Although minimal, the pushback came from the scientific community, in large part because of the divisive perspectives of Salk, Sabin, and other polio vaccine developers, and because of ill will toward the National Foundation for selecting a winner before the data was in. Weeks before the 1954 Salk vaccine national field trial, gossipy news broadcaster Walter Winchell teased a big scoop on his Sunday night radio show,

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[28] "Conquest of Polio—A Forerunner?" *The Christian Century* (April 27, 1955).
[29] "What Happened to the Polio Vaccine?" *The Christian Century* (May 25, 1955).
[30] "Resumption of Polio Shots Leaves Many Questions" *The Christian Century* (June 15, 1955).

announcing "Attention everyone! In a few moments I will report on a new polio vaccine––it may be a killer!" Winchell's take was enough to dissuade some trial counties from participating.[31] And, days before the national field trial, the head of the American Academy of Pediatrics announced that he would not vaccinate his own children with the Salk trial vaccine, owing to dissension within the scientific ranks.[32]

At the grassroots level, Eleanor McBean, a Black American anti-vaccine advocate, had spread misinformation for years. She published numerous books asserting that polio was a human-made disease, that the Salk polio vaccine was poisonous, that the government was intentionally sickening soldiers with toxic foods and cigarettes to cover up for infecting them with polio, and that the March of Dimes was conning Americans and not even using their money to find a cure for polio.[33] Although her work was not widely read at the time, McBean's primary concerns of toxicity and corruption became popular vaccine hesitant arguments over the next few decades.

The Salk vaccine helped bring polio cases down to just one thousand in 1960. Despite Salk's initial victory, Sabin still believed his vaccine was superior. Without American support for a clinical trial, he brought his oral, live-virus vaccine to the Soviet Union (USSR). The Sabin vaccine was administered to 90 million people over two years across the USSR and Soviet-controlled states.[34] Unlike Salk's trial in the United States, there were no placebo controls. The World Health Organization evaluated the results of

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[31] "County in Michigan Cancels Polio Tests," *New York Times* (April 10, 1954).
[32] "Pediatrician Urges Caution," *New York Times* (April 8, 1954).
[33] Eleanor McBean, *The Poisoned Needle*, 1957 (Independently Published, 2021).
[34] Bookchin and Schumacher, *The Virus and the Vaccine*, 70-71; Seytre and Shaffer, *Death of a Disease*, 86.

the study, reporting that the vaccine was safe and provided a higher level of immunity than the Salk vaccine. The Sabin vaccine was stronger, and since it was administered orally, it mimicked the infection route of wild polio.[35]

With such promising results, Sabin was determined to bring his oral vaccine to American children. On three "Sabin Oral Sundays" held in 1960 in Cincinnati, Ohio, 200,000 children received the Sabin vaccine. It was placed directly into their mouths on spoons with sweetened syrup or on sugar cubes. The Cincinnati trial was successful, and the American Medical Association (AMA) threw its institutional weight behind the Sabin vaccine before it was licensed by the Food and Drug Administration (FDA). The Sabin vaccine became the standard polio vaccine in the United States the following year.[36] Sabin Sundays were organized as voluntary events in schools and churches throughout the country, with trusted sacred spaces serving as sites of preventative medical care.[37] Despite the public heartbreak for polio victims and terror in the face of the disease, as polio cases dropped, people became relatively complacent about voluntary vaccination until the polio vaccine was made a state-recommended or mandated vaccine for children beginning in 1963.[38]

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[35] Dorothy M. Horstmann, "The Sabin Live Poliovirus Vaccine Trials in the USSR, 1959," *The Yale Journal of Biology and Medicine* 64 (1991): 499-512; Offit, *The Cutter Incident*, 125; Oshinsky, *Polio*, 252-3.

[36] Oshinsky, *Polio*, 262, 268; Leonard Wallace Robinson, "Now the Sabin Vaccine for Polio," *New York Times*, (September 6, 1959).

[37] Sabin Sunday clinics were organized at the county and district levels. For a detailed description of how nurses coordinated and implemented two voluntary vaccination events in Maricopa and Pima Counties in Arizona, see Hazel P. Shields, "Sabin Sundays," *The American Journal of Nursing* 63, no. 3 (March 1963), 109-111.

[38] In 1963, twenty states, the District of Columbia, and Puerto Rico established vaccine mandates for school attendance. States adopted their own requirements over time. By 1980, all states had requirements that included polio vaccine. Mayo Clinic, "History of Vaccine Requirements and Research Highlights." Kevin

Wild polio was officially eradicated in the United States in 1979.[39] In 2000, the United States discontinued use of Sabin's vaccine, substituting an improved inactivated injectable vaccine that had fewer side effects—and no risk of causing vaccine-induced polio.[40] Polio remains endemic in some countries around the world, and the Sabin vaccine is still in use globally.

**March of Dimes and the Spirit of Collectivism**

Unlike any other disease/vaccine combination in American history, polio and the Salk vaccine were a national cause that commanded collective action. The drive for collectivism was a byproduct of the postwar era as well as a deliberate marketing strategy by the National Foundation.[41] That organization controlled a large budget funded by small donations from regular citizens around the country, making it a grassroots movement. This ground-up structure differentiated the National Foundation from Gilded Age philanthropic foundations built and funded by tycoons such as John D. Rockefeller and Andrew Carnegie.[42]

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M. Malone and Alan R. Hinman, "Vaccination Mandates: The Public Health Imperative and Individual Rights," in *Law in Public Health Practice*, eds. Goodman et al. (New York: Oxford University Press, 2007), 269.

[39] Polio cases still arose because of lack of vaccination or, more commonly, because of infection from the Sabin oral vaccine itself.

[40] In 2000, the United States discontinued use of the oral polio vaccine (OPV) and switched back to an inactivated polio vaccine (IPV). This change was a result of successful global polio eradication efforts decreased the incidence of wild polio far lower worldwide, making the tradeoff between the OPV's potential side effects less necessary. "Polio Vaccination," Centers for Disease Control and Prevention. Updated May 4, 2018. https://www.cdc.gov/vaccines/vpd/polio/index.html, Accessed September 15, 2022.

[41] The National Tuberculosis Association came slightly earlier and provided a partial model for the NFIP.

[42] Daniel J. Kevles, "Foundations, Universities, and Trends in Support for the Physical and Biological Sciences, 1900-1992," *Daedalus* 121, no. 4 (Fall 1992).

In the 1940s, coalitions of religious, governmental, and business leaders initiated numerous efforts to unite Americans around common values and a shared patriotic morality. With the large influxes of Eastern and Southern European immigrants and flagrant nativism, casualties from the Spanish Flu epidemic and from the First World War, the economic implosion of the Great Depression, the divisive New Deal, and structural racial violence, the United States was reeling from chaos and crises. To bolster support for World War II—and later, the Cold War—these leaders worked with the Advertising Council of America to characterize the United States as a tolerant, enterprising, united, and godly nation.[43]

One of the results of this collaboration was the "tri-faith America" campaign, whose strategic messaging fused patriotism and religion, placing them under a metaphorical banner of national "brotherhood." The tri-faith initiative, a derivative of liberal Protestant ecumenical and interfaith projects, symbolically enjoined Catholics, Jews, and Protestants into a nonsectarian, pluralistic religious national identity—a civil religion.[44] The purpose of this civil religion was to present the nation as uniquely communitarian—a tolerant society with strong moral character. The tri-faith campaign utilized national advertising, large voluntary organizations, and events aimed at unifying the country. Practically, there were clear differences that divided these religious groups, but, as sociologist Will Herberg argued in his contemporary book, *Protestant, Catholic,*

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[43] Matthew S. Hedstrom, *The Rise of Liberal Religion* (New York: Oxford University Press, 2013); David A. Hollinger, *After Cloven Tongues of Fire* (Princeton, NJ: Princeton University Press, 2013); Kevin M. Schultz, *Tri-Faith America* (New York: Oxford University Press, 2013).

[44] Steven K. Green, *The Third Disestablishment: Church, State, and American Culture* (New York: Oxford University Press, 2019); Schultz, *Tri-Faith America*, 70; Wendy L. Wall, *Inventing the "American Way"* (New York: Oxford University Press, 2008), 179.

*Jew*, they were united by a "faith in faith."[45] The tri-faith initiative was billed as a modern framework for a faith-filled nation poised for victory and global dominance. Its leaders espoused the idea that the millions of ethnic immigrants who had arrived a generation earlier could be assimilated into the "American Way of Life." Although the "American Way of Life," was "invented" as a national marketing slogan, it operationalized a set of cultural norms and customs which contributed to midcentury civil religion.[46] Among these were belief in God, attending religious services, and incorporating a generic, hegemonic Protestantism into national symbols such as the Pledge of Allegiance, the dollar bill, and school prayer.[47]

Organizations such as the National Conference for Christians and Jews and the Federal Council of Churches helped structure this civil religion from the top down. They embodied the belief that ecumenism and interfaith dialogue were social goods best provided by corporatized charitable and clerical organizations. They fostered shared values, consensus-building, and voluntarism. It was in this communitarian spirit that millions of Americans were encouraged to donate money to the National Foundation, whose twin goals were 1) to discover the cure for polio, and 2) to provide the most robust treatment options available for people living with the disease. Donating even just a dime each year to the March of Dimes was presented as a civic duty, and volunteering a child to participate in a vaccine field trial was intentionally framed by the National

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[45] Will Herberg, *Protestant, Catholic, Jew* (Chicago: University of Chicago Press, 1955), 75, 89.
[46] Wall, *Inventing the "American Way*," 2007.
[47] Kevin M. Kruse, *One Nation Under God* (New York: Basic Books, 2015).

Foundation's president as a moral act.[48] In this way, the National Foundation fostered a "culture of giving" and a "democratic value [that engaged citizens] in a national commitment."[49] Donating to the National Foundation was an investment in a moral community devoted to defeating a disease that "seemed to mock the American dream."[50]

Between 1938 and 1955, the National Foundation spent $233 million on polio patient care and medical bills, for which there was no means-testing.[51] When outbreaks overwhelmed hospital systems, the National Foundation mobilized traveling polio nurses to take over patient care, and in hard-hit locations the organization built many polio wings at hospitals where they trained personnel in treatment methods that were considered unorthodox by many physicians.[52] Barred by local officials in the South from sending white personnel to hospitals for Black patients because of Jim Crow segregation laws, the National Foundation built a large polio facility at the Tuskegee Institute and trained Black physicians and nurses to treat polio cases.[53] The organization also supplied iron lungs and worked with families to coordinate and fund long-term care for paralyzed patients.[54]

The National Foundation raised money through annual drives tied to Roosevelt's birthday each January. Regional chapters threw coordinated "Birthday Balls," to foster a

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[48] Oshinsky, *Polio*, 190. The permission forms that parents signed for children who participated in the NFIP's field trial used explicitly moral language.
[49] Olivier Zunz, *Philanthropy in America* (Princeton, NJ: Princeton University Press, 2012), 44-45.
[50] Abraham, *Polio: The Odyssey of Eradication*, 28.
[51] Oshinsky, *Polio*, 65.
[52] Bruce E. Becker, "Sister Elizabeth Kenny and Polio in America: Doyenne or Demagogue in Her Role in Rehabilitation Medicine?" *Physical Medicine & Rehabilitation* 10 (2018), 208-217.
[53] "Tuskegee Is Aided in Fight on Polio," *New York Times* (January 20, 1945); Oshinsky, *Polio*, 66.
[54] Seavey et al., *A Paralyzing Fear*, 88.

nationwide sense of collective excitement and unity—in the first year, there were six-thousand balls across the country. Arguably, these events functioned as civic holidays. In 1950, the National Foundation launched the annual Mother's March in which mother-volunteers across the country spent one hour on one evening a year walking door-to-door in their neighborhoods to collect money.[55] The call to "Turn on Your Porch Light! Help Fight Polio Tonight!" was particularly effective as news about Salk's breakthroughs made headlines. Most recognizable were the printed advertisements featuring March of Dimes "poster children."[56] Posters featured a local child with polio, often depicted wearing a leg brace or using crutches. Either grinning bravely or staring stoically, each child's facial expression evoked both pity and pride. Alongside the poster child were invitations such as, "Help Me Walk Again! Join the March of Dimes!"[57] Poster children suffered from paralytic polio. Yet, being named one was surprisingly competitive, with parents eager to have their children featured.[58] Taken together, these fundraising efforts were remarkably successful. Between 1951 and 1955, the National Foundation raised $250 million, which was allocated toward patient treatment and Salk's research.[59]

The March of Dimes capitalized on the national spirit of collectivism that had propelled the United States through two world wars plus the Cold War. Charles Massey,

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[55] "Another Drive on Polio," *New York Times* (November 22, 1954). The Mother's Marches were intended to distance the March of Dimes from FDR, who was waning in political popularity, and to encourage participation among women of color, who had been less involved as a demographic, Oshinsky, *Polio*, 88.
[56] William H. Helfand et al. "…So That Others May Walk: The March of Dimes," *American Journal of Public Health* 91, no. 8 (August 2001), 1190.
[57] "Polio Poster Children," *New York Times* (January 16, 1949).
[58] Seavey et al., *A Paralyzing Fear*, 92.
[59] Oshinsky, *Polio*, 87.

a director of the National Foundation, described the coordinated, family-centric volunteerism that fueled the organization:

> The volunteers were really the homemakers. They came from almost everywhere because everybody felt an excitement about the prospect of doing something for this terrible problem…The March of Dimes had affiliations with PTAs, with business and professional women. Most of the men were already tied to the Rotary Club or Kiwanis Club or the Junior Chamber of Commerce, all kinds of organizations of men that had been involved in the war effort so they were already conditioned to do civic work. This brought the mothers into the picture. So you had whole families that were committed, and that was the way things were done in the 1950s.[60]

By the time of the Salk vaccine field trials in 1954, roughly two-thirds of Americans had donated money, and seven million people had volunteered their time to the National Foundation.[61] Religious organizations—churches, synagogues, and national religious associations—were key partners in fundraising. The *New York Times*, which published weekly listings of dozens of church sermons in advance of Sunday services, noted in January 1940 that a National Foundation fundraising letter would be read in local churches as part of "Infantile Paralysis Sunday."[62] In 1954 when *National Foundation News* requested volunteers to help coordinate the vaccine field trial, a plethora of organizations heeded the call, including three-thousand chapters of the National Foundation, the National Council of Jewish Women, and the National Council of Catholic Women.[63]

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[60] Charles Massey quoted in Seavey et al., *A Paralyzing Fear*, 67.
[61] Oshinsky, *Polio*, 188.
[62] "Topics of Sermons That Will Be Heard," *New York Times* (January 27, 1940).
[63] Jacobs, *Jonas Salk*, 145; The NFIP provided a sixty-page manual for how to conduct the field trials. The National Foundation for Infantile Paralysis, "Manual of Suggested Procedures for the Conduct of The Vaccine Field Trial in 1954."

Like interfaith organizations of the era, the National Foundation emphasized inclusivity and voluntarism in the crusade against polio, making the dread disease into the nation's common enemy. The National Foundation was savvy, branding the burgeoning fields of biomedical research and technology with heart and sentimentality.[64] In other words, Americans had, as science reporter Frank Cohn wrote, a "moral imperative" to participate in the charity. Cohn differentiated between the National Foundation and other charitable organizations, saying it provided "a pattern by which we Americans may be able to solve many problems" and added that donating represented "a means of self-expression for thousands of us."[65] In other words, the communal efforts that powered the March of Dimes epitomized Americans' postwar morality and beneficence. The Salk vaccine had come to fruition by faith, good works, and science. According to the director of the National Foundation, it was a "planned miracle."[66]

**The Sacred Scientist**

The second trend that contributed to Americans' midcentury trust in biomedicine was a triumphalist belief in the ability of science to solve social problems. As scholar David Hollinger has argued, many liberal Christian thinkers believed that science provided the tools to better understand God's creation.[67] If science could be applied to

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[64] Robert S. Ellwood argues that faith in science and technology as markers of human progress were core American spiritual beliefs during the 1950s. See Ellwood, *1950: The Crossroads of American Religious Life* (Louisville, KY: Westminster John Knox Press, 2000); Hollinger, *After Cloven Tongues of Fire*, 87.
[65] Frank Cohn, "Causes, Causes, Causes – Are We Suckers?", 128.
[66] Basil O'Connor, director of the NFIP, quoted in Greer Williams, *Virus Hunters* (New York: Alfred A. Knopf, 1959), 270.
[67] Hollinger, *After Cloven Tongues of Fire*, Ch. 4.

some of the most mysterious and devastating crises that humans faced, then modern life might usher in an age of miracles. New fields of medical inquiry, such as virology and bacteriology, applied germ theory to vaccine science in the early twentieth century, initiating rapid discoveries and decreased death rates.

As biomedicine's size and scope ballooned into a modern profession, it split into clinical subspecialties. One of these specialties was pediatrics, which became popular during the 1940s. Pediatrics redefined children's medical care by delineating childhood as a unique period of human development that required specialized healthcare. Middle-class families engaged pediatricians as trusted providers of childcare guidance. As historian of medicine Sydney Halpern has noted, pediatricians "[took] over the traditional functions of neighbors and grandmothers" by "guiding parents—most particularly, mothers—in the emerging science of child management."[68] This claim may seem grandiose. Yet, in the 1930s and 1940s, science, medicine, and technology provided most Americans with a sense of hope and comfort. The Allied victory in World War II, with its blend of successful war technologies on battlefronts and communal endeavors and sacrifices on the home front, solidified this faith in scientific authority.

The media depicted Salk, Sabin, and other researchers as religious characters within a public mythology. Scientists were patient, dutiful saviors, defeating plagues with skills that bordered on the miraculous. Even their personal lives were of public interest. Despite their assertions that religion was not an important factor in their daily lives, the

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[68] Sydney A. Halpern, *American Pediatrics: The Social Dynamics of Professionalism, 1880-1980* (Berkeley, CA: University of California Press, 1988), 13.

media commonly noted, likely with a tinge of anti-Semitic prejudice, that both Salk and Sabin were Jewish.[69] As such, they embodied tri-faith America. Salk was a second-generation American, and Sabin was a first-generation immigrant from Russia. Journalists built Salk into a saint deserving canonization while depicting Sabin as a "promoter of the faith" and a "devil's advocate" whose critiques made Salk's canonization even more deserved.[70] In his 1966 biography of Salk, journalist Richard Carter sanctified his protagonist, touting his humility, diligence, humanitarianism, and selflessness. Regarding the vaccine, he proclaimed on page one, "No medical experiment had ever been carried out with more laborious care than [Salk's]."[71]

According to Carter, all scientists' training and intelligence set them apart from "worshipful humanity" who had developed a "spiritual dependence on the opinion of the scientific community, [as] scientists alone are able to appreciate fully what a Darwin or a Salk talks about."[72] The hierarchy of academic science and the achievement of scientific knowledge was both awesome and esoteric, and journalists fostered personal, loving regard for the polio vaccine scientists within the public's imagination. Scientists, doctors, and medical researchers were on a plain above the lay public. They spoke the foreign

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[69] Some of the fascination with the scientists' Jewish heritage evoked anti-Semitism. See Colgrove, *State of Immunity*, 125). Other media coverage emphasized their Jewishness as evidence of American inclusivity. Richard Carter, *Breakthrough: The Saga of Jonas Salk* (New York: Trident Press, 1966), 42; J.I. Fishbein, "Something to Think About," *The Sentinel* (April 21, 1955); Leonard Wallace Robinson, "Now the Sabin Vaccine for Polio," *New York Times* (September 6, 1959); Williams, *Virus Hunters*, 271.
[70] Williams, *Virus Hunters*, 303.
[71] Carter, *Breakthrough*, 1.
[72] Carter, Breakthrough, 3.

language of science, translating it for the people and applying its gifts to the alleviation of human suffering.[73]

American responses to polio epidemics and vaccines, from the 1930s through the early 1960s, were anomalies in the history of vaccination. The enormous success of the March of Dimes, the millions of Polio Pioneers in the Salk field trial, and the swift recovery of the vaccine operation in the wake of the Cutter Incident, made this period the high point of trust in scientific and medical authorities. The crusade against polio was a direct beneficiary of the American war effort and victory in World War II. As a result, it was propelled by a strong, though fleeting, spirit of collectivism and belief that science, and scientists, would enable progress—even worldly salvation.

In the centuries preceding the polio vaccine, inoculation and vaccines conjured fears of bodily contamination, injury, and spiritual corruption that nurtured vocal dissent and religiously motivated political activism. That the polio vaccine did not stoke those concerns was not because polio was more prevalent, dangerous, or lethal than smallpox or any of the other endemic and epidemic diseases that ravaged towns and cities, killed children, and scarred people physically and mentally. Rather, during the height of the polio era, Americans were primed for success. They had been taught that communal efforts were morally good, and the National Foundation was an ideal channel for middle-class volunteerism and donations. Never had so much of the population been so involved in the process of treating a disease and creating a vaccine to prevent it. As medical research became corporatized by pharmaceutical manufacturers and the medical

[73] Ettling, *The Germ of Laziness*, 202.

profession grew increasingly siloed and doctors more authoritative, the average person became more distant from the processes of creating medicine in modern society. This growing chasm between everyday people and the processes and the profitability of producing medicines fostered skepticism. The public's willingness to treat doctors and scientists as godlike authorities faithfully entrusted with the care of their bodies, and those of their children, was fleeting.

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# CHAPTER THREE

## Testifying for the Injured Child

On a chilly February day in 1985, Gerrie Cohn of Rockville, Maryland, stood on the steps of the United States Capitol Building addressing a pool of reporters. Standing beside Cohn was her fifteen-year-old daughter, Traci, who held onto her mother with one hand and a stuffed monkey with the other. "I am here to speak for Traci, because she cannot speak for herself, nor can she dress or undress herself, wash or comb her hair, read a book, or write her name," Cohn said. "Traci has been deprived of all of this and more, because of what I feel was, and is, enforced ignorance."[1]

Cohn, a member of the grassroots group Dissatisfied Parents Together, had come to the Capitol to bring her daughter's condition to public light.[2] Traci had suffered permanent brain damage resulting from the diphtheria-pertussis-tetanus (DPT) vaccine she had received as an infant, Cohn recounted. "Because I was told not to worry when Traci's temperature soared and she began a high-pitched, non-stop screaming, I tried not to worry…I, like so many mothers, lacked the information necessary to even ask intelligent questions. Instead I trusted the experts."[3] Cohn's statement was reported in a *Washington Post* article about pending federal legislation dedicated to documenting the safety risks of the DPT vaccine. The proposed law would mandate that risks be conveyed

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[1] Sandra Sugawara, "Two Parent Groups Speak Out Against Multiple DPT Vaccine: Side Effects Blamed for Brain Damage," *The Washington Post*, February 8, 1985.
[2] Dissatisfied Parents Together was renamed National Vaccine Information Center (NVIC) in 1991.
[3] Sugawara, "Two Parent Groups Speak Out Against Multiple DPT Vaccine," February 8, 1985.

to parents or guardians before vaccination and establish a no-fault injury compensation fund for vaccine-injured children. This was not Cohn's first testimony about Traci's condition—she had also spoken up at a local hearing concerning the safety of the DPT vaccine three years earlier.[4] Along with parents all over the country, Cohn had been spurred to political action after seeing the television documentary, *DPT: Vaccine Roulette*, which aired numerous times on the NBC Washington, D.C.-metro area affiliate station in April 1982 before being excerpted and shown nationally on *The Today Show*.

An exposé, *Vaccine Roulette* catalyzed a grassroots movement in which parents created networks and took to public forums—television, newspapers, and the halls of Congress—to testify on behalf of their children. These parents told strikingly similar stories of healthy babies whose mental and physical states deteriorated almost instantaneously after receiving a DPT shot. Some of their children had died. Parent-activist narratives expressed a belief that the pertussis portion of DPT, a mandatory childhood immunization, caused their children permanent injuries. In speaking out, they called attention to a crisis of faith in biomedical institutional authorities that had been developing over a few decades. Many factors catalyzed this divergence from the public trust built during the polio era. Different from then was the degree of governmental and corporate involvement, and visibility, in people's experience of healthcare. By the 1980s, healthcare was no longer defined only by physicians and scientific masterminds developing the next miracle. Countercultural activism, especially feminist critiques of biomedicine, had narrowed the delta that had separated doctors and their patients in the

[4] Elsa Walsh, "State Defends Vaccine," *The Washington Post*, June 30, 1982.

1940s and 1950s. Pharmaceutical and insurance companies as well as numerous government agencies were also front and center in people's minds when they thought about and received healthcare.

Vaccines were widely accepted following the success of the Salk and Sabin polio immunizations. This acceptance emboldened public health officials to set their sights on eradicating many other common childhood diseases, such as whooping cough, measles, and mumps using mandatory vaccination programs. Beginning in the 1960s, states implemented mandatory vaccination schedules that increased the number of immunizations given to young children, effectively raising children's civic participation to the status of immunity-providers.[5] As a result of these changes, when the parent-activists of Dissatisfied Parents Together voiced serious vaccine safety issues in the early 1980s, every parent was a concerned party.

Employing personal narratives of transformation such as the one Gerrie Cohn shared on the steps of the Capitol was the primary strategy for converting people to the cause of vaccine safety. Stories, of both a child's failing health and her family's doomed prospects, provided compelling testimonies that shook public trust in vaccine safety and planted seeds of doubt about the validity and sustainability of medical knowledge. They functioned as conversion narratives and testimonies which fueled a grassroots vaccine safety movement. These stories convinced thousands of parents to forego vaccinating their children, and, in some instances, to sue pharmaceutical companies for medical

[5] Elena Conis argues that children's participation in public life became contingent on their vaccination status in the 1960s. Conis, *Vaccine Nation*, 11.

damages for injuries they attributed to vaccinations. The result was a national vaccine crisis—regional outbreaks of whooping cough, vaccine manufacturers exiting the DPT business, and steep cost increases. Many parents' stories were dismissed as anecdotal evidence unable to stand up to the rigors of the epidemiological studies and statistics provided by scientists who studied public health and infectious disease. However, it was precisely this type of evidence that resonated in the public square and moved lawmakers to action.

The stories that circulated through national and local media followed narratives of unsuspecting parents "waking up" to an injured child and facing new realities of how to live, who to trust, and what it all meant. During the 1970s and 1980s, testifying to intimate individual transformations had become a prominent and convincing means of conveying a desire for social changes—a strategy used by various groups, including second-wave feminists in the preceding decades, people with chronic illness, and evangelical Christians. Testimony became a mechanism for cultural shifts that privileged individualism and personal experience. Now, it was also changing vaccine policy and the culture of American healthcare.

## A Brief History of Whooping Cough and the DPT Safety Debacle

Pertussis, commonly known as whooping cough, spreads through the infection of the bacteria *Bordetella pertussis* in humans. Cases of whooping cough last between four and eight weeks, and they are characterized by intense coughing spells during which patients cough until the point that they gasp for breath, emitting a "whoop" sound and

often expelling vomit. Infants do not have the physical strength to "whoop," which makes the disease particularly deadly for the very young, who are more likely to asphyxiate.[6] Prior to the advent of a vaccine to prevent it, whooping cough was a cyclical disease which generally resulted in waves of outbreak every three-to-five years, leaving a high mortality rate in its wake.[7] In the period from 1922 to 1931, there were roughly 1.7 million cases of whooping cough in the United States and 73,000 deaths—mostly of children.[8] Although bacteriologists isolated the pertussis bacterium in 1906, it was not until the 1930s that scientists Pearl Kendrick and Grace Elderling of the Michigan State Health Department were able to innovate a successful vaccine against whooping cough. Still, pertussis was a tricky toxin to isolate, grow, preserve, and introduce into vaccines effectively, and during World War II roughly 3,000 children were still dying of the disease per year.[9] Margaret Pittman, a scientist at the NIH, standardized the vaccine against whooping cough in the 1940s, but safety data published in numerous medical journal articles showed a persistent issue with the vaccine's toxicity and risk of causing encephalopathy, or brain damage.[10] Given that whooping cough was an ongoing childhood scourge, "whole-cell" pertussis was added to a combination vaccine in 1948,

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[6] James D. Cherry, "Historical Review of Pertussis and the Classical Vaccine," *The Journal of Infectious Diseases* 174 (Supplement 3), 1996: S259.
[7] Cherry, "Historical Review," 1996; Nicole Guiso et al. "Pertussis Vaccines: The First Hundred Years," *Vaccine* 28 (2020), 1275.
[8] Cherry, "Historical Review," 1996.
[9] Allen, *Vaccine*, 269.
[10] Allen, *Vaccine*, 270-271; The Institute of Medicine 1991 report notes that the clinical description of "encephalopathy" varies in medical literature. It refers, broadly, to a "constellation of symptoms and signs reflecting a generalized disturbance in brain function," 86.

creating the diphtheria-pertussis-tetanus (DPT) vaccine that remained in widespread, mandatory use in infants until 1991.[11]

Between 1981 and 1985, 219 pertussis injury lawsuits were filed in U.S. courts against pharmaceutical companies who manufactured the DPT vaccine, with an average compensation request of $26 million per case.[12] Given that in 1981 the total size of the pertussis vaccine market was only $2 million, manufacturers of pertussis vaccine, specifically the DPT, determined that the cost of doing business was simply too high. Companies Wyeth and Lederle dropped out of the DPT market in 1983, leaving just one manufacturer, Connaught, to supply the nation's children with DPT doses. With a tenuous hold on the market, the cost of the DPT vaccine skyrocketed from 11-cents-per-dose in 1982 to 11-dollars-per-dose in 1984.[13] Publicity certainly spurred parental action in the 1980s, just as it had during the 1970s in the United Kingdom, where legalized parental choice allowed large swaths of the British population to abstain from DPT immunizations entirely, leading to a whooping cough epidemic there that lasted from 1977-1979.[14]

In the United States, public action took the form of political advocacy and increased litigation rather than vaccine abstention given the strictness of mandatory vaccination laws. In both cases, the medical research record provided ample evidence that

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[11] David Skibinski et al. "Combination Vaccines," *Journal of Global Infectious Disease* 3, no. 1 (Jan-March 2011), 63-72; John D. Grabenstein, "Toxoid Vaccines" in *Vaccines: A Biography*, ed. Andrew W. Artenstein (New York: Springer, 2010), 105-124.
[12] Allen, *Vaccine*, 272.
[13] Allen, *Vaccine*, 283.
[14] Joanne Silberner, "DPT Vaccine: Weighing the Risks," *The Washington Post* (March 27, 1985). During the period from 1977-1979, there were 102,500 cases of whooping cough reported, three times the normal number.

pertussis vaccines carried significant safety risks that had been underpublicized.[15] This was in large part because the pertussis vaccine component utilized whole-cell pertussis—the entire bacterial organism—in order to stimulate a strong immunologic response in recipients. However, research dating back to 1933 noted that whole-cell pertussis, and its vaccines, were "neurologically reactogenic."[16] In other words, they were more likely to trigger a damaging neurological response than other vaccines because whooping cough, the disease, was more likely to cause neurological damage than other childhood illnesses.

By the early 1980s, the American Academy of Pediatrics (AAP) estimated that one-in-310,000 DPT vaccinations resulted in a "serious, permanent neurological disorder."[17] The United States gave 15 million doses annually during that period. In 1991, the Institute of Medicine (IOM) issued a report summarizing the findings of roughly fifty years of data on the safety of pertussis and rubella vaccines, respectively. Considering data for twenty potential adverse reactions, the report concluded that, "the evidence is consistent with a causal relation between DPT vaccine and acute encephalopathy and shock and 'unusual shock-like state,' and indicates a causal relation between DPT vaccine and anaphylaxis [and] between the pertussis component of DPT vaccine and protracted, inconsolable crying."[18] That year, the DPT vaccine was replaced in U.S. vaccination schedules by the DTaP (diphtheria-tetanus-acellular pertussis), which used

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[15] Jacob Heller, *The Vaccine Narrative*, 87
[16] For overviews of these papers, see: Skibinski et al., "Combination Vaccines," *Journal of Global Infectious Diseases,* Jan-Mar 2011; 3(1): 63-72; Cherry 1996; Guiso et al. 2020. For a brief overview of the differences between whole-cell and acellular pertussis vaccine, see Institute of Medicine, 1991, 17-18.
[17] Silberner, "DPT Vaccine," March 27, 1985.
[18] Institute of Medicine, 1991, 8.

only pieces of pertussis bacteria rather than the whole-cell pertussis bacteria used in the DPT.[19]

The switch to the DTaP vaccine was a direct result of *Vaccine Roulette* and the politicization of vaccine injury. As vaccine injury stories crossed the airwaves, Barbara Loe Fisher, Kathi Williams, and Dan Schwartz, three parents who met after watching the documentary, co-founded the organization Dissatisfied Parents Together. The founders intentionally used the same acronym as the DPT vaccine in their choice of name (for clarity, I will refer to the organization by its full name and the vaccine by its acronym). The group mobilized on two fronts. First, organizers built a network of sympathetic parents (and lawmakers) to draw attention to potential DPT-related injuries by listening to the stories of parents who called the group's headquarters in suburban Washington, D.C. Second, they researched the safety, efficacy, and risks of the pertussis vaccine by doing a deep dive into medical literature.

The group's goals were threefold: 1) legalize vaccine choice, called "informed consent"; 2) spread credible, scientifically based information about vaccine safety; and 3) implement a system of financial accountability on the part of pharmaceutical companies and the government to cover medical costs associated with vaccine injury.[20] These goals, as well as the speed and effectiveness with which Dissatisfied Parents Together

[19] Along with the DTaP, there is a booster for adolescents and adults called the Tdap also uses the acellular pertussis bacteria. The College of Physicians of Philadelphia, "Whooping Cough," History of Vaccines, April 18, 2022. https://historyofvaccines.org/diseases/pertussis-whooping-cough

[20] Kirkland, *Vaccine Court*, 103; Donna Hilts, "TV Report on Vaccine Stirs Bitter Controversy," *The Washington Post* (April 28, 1982).

organized, were doubtlessly influenced by *Vaccine Roulette*'s original media market.[21] The group's first official meeting took place in the Capitol office of Representative Dan Mica (R-Florida), whose nephews were featured in *Vaccine Roulette*.[22] Dissatisfied Parents Together found a sympathetic ear in Congress.

When it came to informed consent, Dissatisfied Parents Together and other upstart vaccine-choice advocates argued that parents should legally be allowed to make decisions about which vaccines their children received without being penalized for breaking state laws that prohibited under-vaccinated children from enrolling in schools. At the core of their arguments was reasoning that both represented parental rights writ large *and* parents' abilities to do the proper research—and therefore make proper decisions—for their own children. Again, this empowerment to do their own research and draw sound conclusions, misguided or not, was a result of a structural privilege that was baked into the Dissatisfied Parents Together brand. However, the organization's reliance on data to prove their claims exemplified its overarching faith in the scientific method. During the early days of DPT hesitancy, activists' common belief was that corruption was the problem and science the solution.[23]

Dissatisfied Parents Together and other similar groups of the 1980s primarily appealed to the reasonability of legal vaccine choice. They argued that, if the DPT

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[21] Washington, D.C. is fertile ground for viewers versed in the workings of government and bureaucracy. Schwartz was an environmental attorney who had worked at the Department of Health & Human Services and Fisher was a publicist by training.

[22] Allen, *Vaccine*, 254. Allen argues that the founders of Dissatisfied Parents Together were politically well-connected, allowing them access to leaders it would have been otherwise difficult to meet.

[23] Heller argues that there was a "force assault on the conclusions of the experts," emphasizing that it was the assessment, not the data itself, that allowed Dissatisfied Parents Together to be taken more seriously by the medical profession. Heller, *The Vaccine Narrative*, 96.

vaccine carried clear safety risks but was required for school attendance then there should be an avenue to refuse the shots. In most states, the only way to avoid vaccines was to claim a religious or "personal belief" objection. At the time, most safety advocates did not identify with this method because their focus was not on vaccines as impure or soul-altering substances. Rather, they believed that giving a vaccine to a child should follow a similar course as reviewing safety and crash data before buying a car. In an ideal world, they noted, vaccine manufacturers would provide information about each vaccine's side effects, risks, and efficacy in an accessible note packaged with every syringe. Then, pediatricians, nurses, and public health workers would not only provide the manufacturer's statement, but also discuss it with parents before administering shots. Advocates implied that if parents were given the "full story" of a vaccine's safety risks, they will make an appropriate individual choice, thereby preventing the number of vaccine injuries. This has remained a standard argument among proponents of vaccine choice for decades, but it carries questionable rationale. Advocates presume that parents can accurately assess risk of harm, and that the "right" parents would do this correctly. In other words, the logic of informed consent is that parents of children who are likely to have a vaccine reaction would know this about their children ahead of vaccination and refuse the procedure. Informed consent also implies that any risk of adverse event is unacceptable, which disregards the communal nature of mass vaccination as well as the dangers of the diseases that vaccines are intended to prevent.

Vaccine-safety advocates argued that since a standardized protocol for risk assessment did not exist, parents should be entrusted with the responsibility to use both

medical research *and* each other's experiences of vaccine injury as trustworthy sources to inform their decision-making.[24] Both approaches—personal research and anecdotal evidence-sharing—were individualistic. They were based on the deeply rooted American ideal that commonsense leads the way to truth. This sensibility derived in large part from the school of Scottish Commonsense rationalism, which informed evangelical Christianity and the broader culture of the early American Republic. Early Republicans held a prevailing distrust of authority figures and institutions. Devotees who espoused commonsense morality believed that the fewer layers of interpretation between the source and the believer, the better. Commonsense theology idealized the individual and his ability to discern truth—God's presence, the meaning of the Bible, democratic principles—without the aid of intellectual authorities.[25] Authorities would only interfere with the common individual's innate commonsense. Although commonsense theology gave way to a period of devotion to "the expert" during the Era of Promise, in the 1980s, vaccine-safety activists asserted a new spin on commonsense rationality. They argued that what they could see with their own eyes or heard from own stories was at least as true as scientific studies that analyzed thousands of cases. This was the critical point where vaccine-safety advocacy diverged from traditional scientific research. While parent-advocates relied on the fruits of peer-reviewed scientific findings to substantiate their claims, they did not want—or could not get—their own conclusions submitted to the

[24] At U.S. Senate hearings on the topic of the pertussis vaccine's safety held in 1982 and 1983, public health officials noted that at least fifty percent of childhood vaccines nationwide were administered by private pediatricians whose vaccine practices were unregulated—there were no mandatory rules ensuring that private-practice pediatricians provided vaccine safety information or reported adverse effects from vaccinations.

[25] Mark Noll, *America's God* (New York: Oxford University Press, 2002), 11.

same rigor required for acceptance in scientific or medical communities. This was a fact that many could never accept, and it led to increased skepticism and distrust toward the biomedical establishment, and later, to conspiracy theorizing about its motives.

During the 1970 and 1980s, many women's frustration over this discrepancy between the trained expert and the self-taught, or even the embodied, expert provoked the feminist health movement. In an article published by *Mothering* magazine, Carol Miller, a public health consultant and rural health advocate, took issue with the concept that parents' own research did not deserve a legitimate legal standing regarding vaccination policy. Writing in 1983, Miller argued:

> It's unacceptable to say, 'I read 25 articles in medical journals, three newspaper articles, and saw on *The Today Show* that the pertussis vaccine has serious side effects and for this reason I don't want my child to have the pertussis vaccine.' Such a statement is not reason enough from a legal standpoint to refuse to immunize your child against pertussis. This is one of the most serious problems with immunization policy; in order to legally refuse any single immunization, it is necessary to be opposed to all immunizations on religious grounds. Scientific evidence against the effectiveness of particular immunization is insufficient.[26]

Essentially, Miller pointed out that "unscientific" claims, such as religious beliefs, were more effective for achieving vaccine abstention, even if those personal beliefs were lies. In contrast, research and attempting to speak the language of scientists was ineffective. For many, this irony was maddening.

Miller made another important argument. Her focus on the pertussis vaccine illustrated two of the most animating aims of the early vaccine-injury movement: to make transparent the safety risks of the *pertussis* component of the DPT vaccine and to be able

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[26] Carol Miller, "Immunizations and Informed Consent," *Mothering* no. 26, Winter 1983 in *Vaccinations: The Rest of the Story*, Peggy O'Mara, ed. (1992), 54.

to opt out of *just* the DPT, or even the pertussis portion, and still have children vaccinated against polio or measles, for example. In citing the concept of vaccine abstention on "religious grounds," Miller implied that religious objections to vaccination were both categorical and unscientific in nature. Quite simply, the only legal option was not applicable to vaccine safety. By advocating for informed consent, Miller emphasized how parent-activists in the 1980s remained largely in favor of vaccines as a part of childhood healthcare, but their focus was on vaccine safety and accountability. As one doctor said, members of Dissatisfied Parents Together wanted "vaccination a la carte."[27]

As leaders of Dissatisfied Parents Together dug into decades of medical research concerning pertussis vaccine safety, their findings were unsettling and confirmed their suspicions. Japan and Sweden had already decided that whole-cell pertussis vaccines were too risky. Those countries were developing an acellular option which used only part of the pertussis cell. The acellular vaccine would be less reactogenic, although slightly less effective at providing immunity against whooping cough. As leaders of Dissatisfied Parents Together conveyed to their networks, the DPT vaccine their children received was considered unsafe in other developed countries. They demanded to know why the United States government was not following the data.

Just weeks after *Vaccine Roulette* aired, Senator Paula Hawkins (R-Florida) convened the first congressional hearing to investigate the safety of the pertussis vaccine. Members of Dissatisfied Parents Together had lobbied successfully for the investigation,

[27] Sue Chastain, "Calling the Shots," *Chicago Tribune*, May 19, 1991.

and some testified, telling their own vaccine-injury stories.[28] The hearings yielded useful information about how a new federal policy was negatively affecting vaccine manufacturing. Although the FDA had recently adopted more stringent safety and efficacy requirements for new vaccines, these standards did not apply to ones already on the market. In effect, manufacturers were disincentivized from investing in newer acellular vaccines because they would have to meet stricter safety criteria. As journalist Arthur Allen summarized, "The FDA hoisted itself—as well as kids who were being injured by the old vaccine—by its own petard…For the companies it was cheaper and easier to make the bad old vaccine than to make a new better one."[29]

Lawmakers who spoke during the hearings agreed that mandatory childhood vaccination programs had initiated miraculous successes in public health and expressed the belief that vaccines had almost limitless potential to improve human life. They must be protected. Because of this potential, they argued, the government should admit that vaccines could cause harm in anomalous cases. This admission would spare the vast majority of children from vaccine-preventable illness as long as restitution was made for harms done to the very few.[30] For the anomalous cases, the government should fund healthcare and living expenses for the remainder of the victim's life. After a total of three hearings held between 1982 and 1985, President Ronald Reagan signed the National Vaccine Injury Compensation Act (NVICA) into law in 1986, much to his chagrin. The

[28] U.S. Senate, Hearing Before the Subcommittee on Investigations and General Oversight of the Committee on Labor and Human Resources, 97th Congress, May 7, 1982.
[29] Allen, *Vaccine*, 274
[30] Paula Hawkins, U.S. Senate Subcommittee Hearing, 1984, 7.

legislation initiated a no-fault compensation program designed to streamline vaccine injury claims out of the tort system. Cases of alleged vaccine injury would be the purview of special masters in the United States Court of Federal Claims, now commonly known as "vaccine court."[31] Vaccine injury awards would be funded by an excise tax on every dose of vaccine sold.[32] Another result of the NVICA was the formation of the Vaccine Adverse Event Reporting System (VAERS), a national surveillance system operated by the CDC and FDA.

Prior to VAERS, there were no formal national mechanisms to report a suspected vaccine injury, nor were independent physicians required to report adverse reactions to shots they had administered. VAERS, a public database, included a passive reporting component available to any person who wished to report an "adverse vaccine event," as well as an active mandate to all medical providers to report certain types of adverse reactions. This two-part reporting system was designed to empower individual patients to report their own suspicions and to tell their doctors about them. Sociologist and legal scholar Anna Kirkland has argued that these systems effectively "legalized" vaccine injury by forcing the federal government to take account of potential adverse reactions to the vaccines that it mandates.[33] Despite feeling an initial victory over the passage of the

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[31] For a historical account of the implementation of the NVICA system, see Anna Kirkland, *Vaccine Court*, 2016.
[32] Kirkland, *Vaccine Court*, 5, 122; Seth Mnookin, *The Panic Virus*, 148. The Reagan Administration was wary of the NVICA largely because of the excise tax and a potential "domino effect" in consumer rights litigation. See: Mike Robinson, "Reagan Under Pressure from Doctors, Drug Makers to Sign Vaccine Bill," *Associated Press*, October 28, 1986. In 1987, Congress debated shifting the source of funding again. See: U.S. House of Representatives, "Funding of the Childhood Vaccine Program," Hearing Before the Subcommittee on Select Revenue Measures of the Committee on Ways and Means, March 5, 1987.
[33] Kirkland, *Vaccine Court*, 6

NVICA, Dissatisfied Parents Together and other vaccine skeptics quickly became frustrated and cynical. Over decades, Fisher, who was instrumental in passing the law, has argued to repeal it. The systems and promises of vaccine injury compensation were tested time and again, typically frustrating all parties involved.[34]

**Storytelling is Believing**

Why were vaccine-injury narratives so compelling? In short, they were testimonies of horrible events that could affect anyone. The pain they conveyed was palpable, and they served as warnings to listeners and readers to "wake up" to the possibility that something sacred—a child—could be harmed irreparably by a medical professional and a routine procedure entrusted to assist a growing family to thrive. Parents of vaccine-injured children acted as "wounded storytellers," a phrase coined by medical sociologist Arthur Frank to describe people living with chronic illness who "witness," or tell the stories of their illnesses, to others.[35] As caretakers of children, these wounded storytellers articulated the dual experiences of living in—and caring for—bodies that cannot recover. Wounded storytelling is an act of self-empowerment that helps people overcome some of the stigma and silence associated with chronic illness. As Frank described, it is also a moral deed, as wounded storytellers say, "'I will tell you not what you want to hear but what I know to be true because I have lived it. This truth will

[34] Kirkland argues that what "counts" as evidence of vaccine injury is legally labile and often frustrating for those who bring cases and those who arbitrate them," Kirkland, *Vaccine Court*, 56-57. Arthur Allen, "Shots in the Dark," *The Washington Post* (August 30, 1998); Paul A. Offit, "Inoculated Against Facts," *New York Times* (March 31, 2008); Mnookin, *The Panic Virus*, 148.
[35] Arthur Frank, *The Wounded Storyteller* (Chicago: The University of Chicago Press, 2013, 2nd Ed).

trouble you, but in the end, you cannot be free without it, because you know it already; your body knows it already."[36]

In conversion stories, testimonies, and illness narratives, truth and chronicity are subjective. The same is true of illness narratives. When an evangelical Christian "witnesses," or discusses being "born-again" to others, that person's life events are narrated into larger-than-life, supernatural histories, biblical archetypes, and a distinct, dramatic "before" and "after."[37] When "wounded storytellers" talk about the trauma of chronic illness, their stories convey an altered sense of time that is "wrecked because its present is not what the past was supposed to lead up to, and the future is scarcely thinkable."[38] Parents' vaccine-injury stories employed many of these stylistic frameworks and flourishes. Their intention was to guide, or shock, an uninformed person into seeing the medical world in a different, more frightening, light for their own safety.

Vaccine injury stories resonated most with parents who had similar experiences but who lacked interpretive frameworks with which to understand or contextualize them. They were the parents who, after seeing *Vaccine Roulette* or reading *A Shot in the Dark*, came to identify themselves as parents of a vaccine-injured child. With this new self-identification, parents gained different frameworks for understanding their children's ailments—frameworks that moved a family out of isolation and into a new community with new beliefs or understandings about vaccines, specifically, and the medical system

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[36] Frank, *The Wounded Storyteller*, 63.
[37] Susan Friend Harding, *The Book of Jerry Falwell* (Princeton, NJ: Princeton University Press, 2001) 37, 58.
[38] Frank, *The Wounded Storyteller*, 55.

or government, more broadly. Parents who had a suddenly ill or "damaged" child recounted being changed instantaneously. Yet, until there were publicly available frameworks to identify with, their experiences lacked validation, explanation, and meaning. Telling and hearing emotional stories of injury—as opposed to illness—created conversion narratives for those who believed their children were injured by the DPT vaccine. They fostered similar insights and transformations for many who listened to them, as well.[39]

**The Vaccine-Injured Child Narrative**

Packaged together, the images and stories depicted in the televised *Vaccine Roulette* documentary constructed a narrative of the "vaccine-injured child." Parents who spoke out or brought lawsuits on behalf of their children in the 1980s recounted medical histories that followed clear narrative arcs. A healthy, developing baby receives one of her four DPT injections (spaced every two months beginning at four months old), and within hours she is running a high fever and is inconsolable, screaming at a frighteningly high pitch, and often convulsing. The child's parents call their pediatrician, typically off-hours, and the pediatrician assures them that the child will be fine. He says that these symptoms could be a normal reaction to the DPT shot, but they are likely coincidental. Unconvinced and panicked, the parents rush their child to the emergency room. The child must be reacting to the shot, they tell the doctors. They are met with disbelief, and often

[39] As philosopher David Carr has argued, stories are "told in being lived, and lived in being told," meaning that people live their stories again and again.[39] Carr, "Narrative and the Real World: An Argument for Continuity," *History and Theory* 25, no. 2 (May 1986), 126.

dismissal, at the hospital. The story ends in one of two ways. In most cases, the child grows up with serious developmental deficits later diagnosed as "retardation," chronic seizure disorders, or encephalopathy.[40] The parents struggle to care for the child medically, educationally, emotionally, and financially, their marriage suffers, and the child's siblings are overlooked. In the alternate scenario, the child dies shortly after the DPT shot. Her death is attributed to sudden infant death syndrome (SIDS), "a diagnosis of exclusion" that is "inherently imprecise."[41] The diagnosis provides little space for emotional closure, and parents blame themselves for their child's death. Both versions end in tragedy and confusion.

The "vaccine-injured child" narrative, as it is often referred to by scholars of vaccine skepticism, combined emotionally disturbing images of babies battling death and parents experiencing the crises of a lifetime, with medicalized language and disturbing, irreversible diagnoses.[42] *Vaccine Roulette* is often denigrated by scholars and vaccine advocates as unbalanced and incendiary, which it is.[43] The documentary presented the DPT vaccine as dangerous, while overlooking the communal threat of whooping cough. Scholars have argued that *Vaccine Roulette* was the beginning, or cause, of a broadly conceived "anti-vaccine" movement. This was not the case. Rather, DPT-related parental

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[40] For examples of the injured child narrative, see Coulter and Fisher, *A Shot in the Dark*, 1985.
[41] James R. Wright, Jr. "A Fresh Look at the History of SIDS," *Academic Forensic Pathology* 7, no. 2 (June 1, 2017), 146-162. The Institute of Medicine's meta-analysis of medical studies concerning pertussis vaccine safety found no causal relationship between the DPT vaccine and SIDS. IOM 1991, 8.
[42] Bernice Hausman and Anna Kirkland both argue that the "injured child story" is popular in literature by both vaccine skeptics and vaccine promoters. See Hausman, *Anti/Vax*, 12; Kirkland, *Vaccine Court*, 49. Robert Johnston characterized "injured children" as a "huge part of the of iconography of the [DPT] movement." Johnston 273. In the 1990s and early 2000s, parents employed this narrative to chart a cause-and-effect between the measles-mumps-rubella (MMR) vaccine and the onset of autism.
[43] Allen, *Vaccine*, 255; Reich, *Calling the Shots*, 59.

demands for vaccine product and policy changes were part of the larger context of consumer and patient rights advocacy that churned during the 1970s and 1980s.[44] The activism that the film spurred was not a sudden turn against vaccines or the use of vaccination as a valuable public health tool. Rather, it launched a consumer rights movement. The film suggested that the DPT vaccine, portrayed as a medical product, was likely defective and harmful, and that its defectiveness was intentionally concealed by the biomedical establishment. For parents who saw their own child in the stories depicted in *Vaccine Roulette*, the vaccine-injury narrative was personally eye-opening, enraging, and validating. It was worth sharing. It became a model for catalyzing collective action that allowed people directly affected by child injury, and those who feared or empathized with it, to create meaning out of the terror and grief of losing a child.[45]

In depicting the "before-and-after" of the vaccine-injured child narrative, *Vaccine Roulette* posited a cause for the sudden onset of childhood developmental illness. By providing a cause, even if it was a scapegoat, the narrative offered bereaved, confused parents a larger-than-themselves reason for their suffering. This dynamic, of creating meaning out of even the most incomprehensible of events, reflects what sociologist of religion Peter Berger called the human need for a "plausible theodicy."[46] Theodicy refers

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[44] Julius Duscha, "Nader's Raiders Is Their Name, and Whistle-Blowing Is Their Game," *New York Times* (March 21, 1971); Allen, *Vaccine*, 257.

[45] Scholars of social movements use the framework of a "model for collective action" to explain how some narratives compel group action. Anna L. Peterson argues that religious narratives are "most powerful" because "they include the sacred: forces, ideas, and events with meaning, location, and/or value beyond (but not necessarily opposed to) the human. Like any narrative, religious narratives tell a story, but one in which 'real' history is linked in some way to sacred history." Peterson, "Religious Narratives and Political Protest," *Journal of the American Academy of Religion* 64, no. 1 (Spring 1996), 29-30.

[46] Peter L. Berger, *The Sacred Canopy* (New York: Anchor, 1967), 58.

to the cognitive dissonance that humans feel when they are faced with evil in a world created by the divine. Finding a plausible theodicy is applicable to the need to find reasonable explanation in the most destabilizing phenomena of life—the catastrophes that prompt people to question their faith or to fear that life is meaningless. In other words, a "plausible theodicy" explains how something evil could occur in an otherwise good, sensible world. Functioning in this way, the vaccine-injured child narrative provided a template for parents to narrate experiences of their own child's mysterious illness.

Shortly after its airing, Maryl Levine of Chevy Chase, Maryland, was interviewed by *The Washington Post* about her feelings after watching the piece on television. The article summarized her reaction: "[Levine] said she now believes the DPT shots caused her 14-year-old son's severe brain damage. She said that she compared notes she made at the time her son became ill with descriptions of the reactions reported in the television show and found them almost identical."[47] In effect, Levine, whose son Sam had been sick for over a decade at the time of the documentary's airing, was given a meaningful narrative, a plausible theodicy, with which to understand her child's regression.

A few years later, Maryl and her husband, Bill Levine, were interviewed again, this time for a controversial book called *DPT: A Shot in the Dark*, authored by L. Harris Coulter and Barbara Loe Fisher, a co-founder of Dissatisfied Parents Together. In the text, Maryl reiterated her initial reaction noting, "When we watched the program, we were stunned. We have taken Sam to various kinds of special schools and programs, but the only time we have ever seen a collection of children who looked and behaved like

[47] Donna Hilts, "TV Report on Vaccines Stirs Bitter Controversy," *The Washington Post*, April 28, 1982.

Sam was when we saw *Vaccine Roulette*." Bill added, "We had stopped thinking about what had caused Sam's condition, and that television program was like a bolt out of the blue fourteen years after the fact. Now that I know he was hurt, I think I feel better. Of course, that does not take away from the fact that the pertussis vaccine is an inherently neurotoxic vaccine and parents haven't known it."[48] Bill's explanation of his feelings about his son's illness illustrates the power of the documentary's messaging in catalyzing a change in his views, first about his own family's trauma, and second, about the DPT vaccine. That Sam was "hurt" placed him in a larger pattern of meanings that made life more comprehensible. The Levines were no longer alone. They were victims of errors far larger than themselves, and their suffering had a reason.

In concluding that the pertussis vaccine was "inherently neurotoxic," Bill narrated a major shift in his understanding of the vaccine based on what outside information he had. When he had no reason to doubt it, the DPT vaccine was innocuous. Upon seeing the images and hearing the descriptions of other parents who blamed the DPT vaccine for their children's ills, the vaccine was poisonous. Implicitly, Bill argued that if he or any other parent had *known* of its "neurotoxicity," they would have fought to have their child abstain from it, vastly improving the course of their families' lives. By their own testimonies, the Levines experienced an awakening to the "truth" behind Sam's suffering from watching *Vaccine Roulette*, and that awakening provided them with new language to understand his decline, an altered view of the vaccine in question, as well as suspicions that systemic problems were causing parents to be deceived about vaccine risks.

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[48] Harris L. Coulter and Barbara Loe Fisher, *DPT: A Shot in the Dark*, 181.

Stories such as the one told by the Levines brought the vaccine-injured child narrative to life to outsiders. They served as testimonies of conversion to a reality in which there were explanations for the inexplicable, and the ramifications of bad medicine or negligent safety protocols were dire, painful, personal, and transformative. As individuals' stories grew into large-scale concerns about the childhood vaccination program during the 1980s, they wore holes in the clear order that biomedicine had provided for roughly a half century. The void of medical explanations for young children's developmental disorders or deaths effectively forced parents to find cause in DPT shots, rather than accept the fuzzy world of correlation or catch-all diagnoses such as "mental retardation" or SIDS.

The path to the passage of the National Vaccine Injury Compensation Act was filled with storytelling.[49] The experiences of parents who identified with the injured-child narrative took on new meanings when they were channeled into activism. This was a significant difference from the tactics used by nineteenth and early twentieth century anti-vaccination groups, which circulated impersonal screeds written almost exclusively by men. In contrast, the vital avenue by which membership in local chapters of Dissatisfied Parents Together grew was the sharing of intimate testimonies—often by women—both privately between family and friends, and publicly in books, the news, or in Congress.

[49] There is rich literature on the use of narrative for social change which informs my analysis. See Ruth Braunstein, "Storytelling in Liberal Religious Advocacy," *Journal for the Scientific Study of Religion* 51, no. 1 (March 2012), 110-127; Ziad Munson, "When a Funeral Isn't Just a Funeral: The Layered Meaning of Everyday Action," in *Everyday Religion*, ed. Nancy T. Ammerman (New York: Oxford University Press, 2007), 121-135; Francesca Polletta, *It Was Like a Fever* (Chicago: University of Chicago Press, 2006).

The dialogic process of telling and retelling their stories created the conditions for parents to, first, convert to the identity of parent to a "vaccine-injured child," second, to attach meaning to that identity and the events that surrounded it using a common narrative, and third, to form a moral community with others with similar experiences. This moral community was simultaneously connected to the existential and spiritual dimensions of child loss as well as to concrete advocacy work, including witnessing to others.[50]

The tactic of storytelling using the framework of personal conversion narrative that spurred the growth of organizations such as Dissatisfied Parents Together was effective because it had recently gained cultural salience. During the 1970s, for example, both second-wave feminists and evangelical Christians used similar strategies to find members and organize social movements, despite their mutual antagonism.[51] Each valued individual experience and claimed that stories of personal transformation were worthy of public attention and useful for collective mobilization. These groups' use of personal testimony and insistence on the rights of the individual to discern their own truths within or against a society full of experts helped lay the groundwork for vaccine injury activists to be well-received in spite of their unpopular message.

During the 1970s and 1980s, numerous evangelical Christian leaders took to radio and television airwaves to build ministries that transcended denominations and, more

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[50] Ziad Munson argues that actions and identities are "polysemous," in that they can have multiple or even competing meanings for participants. Munson, "When a Funeral," 126.

[51] On the cultural clash between second-wave feminism and evangelicalism in the 1980s, see Donald T. Critchlow, *Phyllis Schlafly and Grassroots Conservatism* (Princeton, NJ: Princeton University Press, 2005); Seth Dowland, *Family Values and the Rise of the Christian Right* (Philadelphia: University of Pennsylvania Press, 2015).

importantly, regional constraints. Televangelists utilized the power of spoken testimony to illustrate how conversion, or dedicating one's life to Jesus Christ, could radically change a person from the inside out. While conversion and testimony were nothing new in evangelical and fundamentalist churches, the reach and ubiquity of these religious practices and discourses *was* new.[52] Being "born again," experiencing miracles in everyday life, hearing the voice of God, and testifying to a new faith were no longer private sensations to be experienced by an individual alone or witnessed only inside a church.[53] These practices became part of a larger confessional culture in the United States in which personal transformation stories carried more cultural capital.

The "second-wave" of the feminist movement occurred from the late-1960s through the early 1980s. Early leaders held small-group meetings known as "consciousness-raisings" to provide safe spaces for women to exchange personal stories. The intent was to help women "awaken," or comprehend, the role that endemic, structural misogyny played in their lives and in society at large.[54] This raising of consciousness to the oppression of sexism was painful, but at least for some, it was motivating and transformative in their worldviews and actions, fostering a sense of "sisterhood" with other women. Sisterhood functioned, at least ideally, as a moral community, which in turn cultivated the strategic tools needed to sprout a social movement capable of working

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[52] Harding, *The Book of Jerry Falwell*, 80; Razelle Frankl, *Televangelism: The Marketing of Popular Religion* (Carbondale, IL: South Illinois University Press, 1987); Jeffrey K. Hadden and Charles E. Swann, *Prime Time Preachers* (Reading, MA: Addison-Wesley Publishing Company, 1981).
[53] T.M. Luhrmann, *When God Talks Back* (New York: Vintage, 2012); Steven P. Miller, *The Age of Evangelicalism* (New York: Oxford University Press, 2014), 20-30.
[54] Carol P. Christ and Judith Plaskow, eds. *Womanspirit Rising: A Feminist Reader in Religion* (San Francisco: HarperSanFrancisco, 1979, 6-7; Sara M. Evans, *Tidal Wave* (New York: Free Press, 2003), 44-46.

toward complex goals. A subset of feminist activists focused on a "women's health movement," which was strongly influential to the later vaccine injury movement.

One well-known subset, the Boston Women's Health Book Collective, produced the book *Our Bodies, Our Selves*, which was first published in 1969. The authors argued that women, not doctors, must be authorities over their own bodies. They advocated for self-driven research on women's anatomy and health conditions, making the case that doctors and the biomedical establishment did not have women's best medical interests in mind.[55] Women had unique embodied experiences that required personalized medical care in which providers trusted women's intuitions about their own bodies. Within two decades, the foundational beliefs of the women's health movement were almost seamlessly applied to vaccination concerns by mothers who saw both their maternal roles, and their children, as sacred. For these women, doctors were not the true experts of health, and pediatricians were no longer the trusted authorities on childrearing that they had been for their mothers' generation.

Writing in 1979, feminist public health scholar Sheryl Burt Ruzek suggested that the tactics of the women's health movement—sharing personal experiences among women to raise consciousness of the systemic injustices of patriarchy and providing information specifically about women's bodies directly *to* women—could be applied beyond gynecology and obstetrics, into the broader arena of medical care. "Clients," as

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[55] Barbara Ehrenreich and Deirdre English, *For Her Own Good* (Garden City, NY: Anchor Books, 1979); Wendy Kline, *Bodies of Knowledge* (Chicago, The University of Chicago Press, 2010); Robert Mendelsohn, *Malepractice: How Doctors Manipulate Women* (Chicago: Contemporary Books, 1981); Jennifer Nelson, *More Than Medicine: A History of the Feminist Women's Health Movement* (New York: New York University Press, 2015).

Ruzek referred to patients, could extend their actions beyond improving one-on-one interactions with their providers by banding together as groups to bring about "changes on a societal level."[56] Ruzek, characterizing the agitations of the 1970s, observed that, "Despite professionals' desire for unquestioning acceptance of their authority, clients no longer obey simply on faith. In fact, conflict between professionals and clients—particularly clients from subordinate or subjugated groups—is a dominant theme of this era."[57] In her assessment, Ruzek pointed to an intentional break from a dated medical authority structure solidified during World War II in which doctors were experts and patients accepted advice and prescriptions without question, or "on faith." By classifying doctors as "professionals" and patients as "clients," Ruzek analogized medical care to consumerism, drawing on the language of consumer rights advocates. This analogy desacralized biomedical practices by way of feminist and consumer rights tactics, which expressly privileged individual experience and testimony over institutional knowledge. It was immediately applicable for mothers who understood their children to be extensions of themselves and who needed a framework for discrediting the widespread scientific and public consensus that vaccines were safe and necessary components of pediatric and public healthcare.

[56] Sheryl Burt Ruzek, *The Women's Health Movement* (Westport, CT: Praeger Publishing, 1979), 2.
[57] Ruzek, *The Women's Health Movement*, 5.

**Sacrifice and Science**

During the 1980s, many concerned parents who listened to public testimonies by aggrieved parents, heard unsettling news from abroad, learned about problematic research findings, or read about the shaky vaccine marketplace and rising costs of vaccines concluded that there was a logjam in American vaccine development, and their children were paying the price for governmental and pharmaceutical inadequacies. Each of these factors contributed to growing unease about the pertussis vaccine's safety *and* the biomedical establishment's role and responsibility in protecting children. Parent-activists worried that their own doctors were part of a heartless establishment unable to combat malfeasance. Was the vaccine problem both more local and more structural than they had realized?[58]

This question reverberated through debates about vaccine safety that occurred in the media, in Congress, and in doctors' offices. Applying many of the ideals of the women's health movement to children's healthcare, activists likened doctors and medicine to a God-like status to convey the level of deference that each commanded in society—and why it was so difficult when their experiences ran counter to medical wisdom. In *A Shot in the Dark*, a mother named Janet discussed her son Richie's death, which she blamed on a reaction to a DPT shot he received. She had made a connection between the DPT vaccine and Richie's death at two-months-old after her sister-in-law

[58] Francesca Polletta argues that groups' collective political interests are not always long-standing. Rather, they change as opportunities arise. In the case of Dissatisfied Parents Together, the issue of DPT safety opened the door to more and more layers of structural critique. Polletta, *It Was Like a Fever: Storytelling in Protest and Politics* (Chicago: University of Chicago Press, 2006), 17.

saw the January 12, 1983, episode of the *Phil Donohue Show* and called her. Less than a year after *Vaccine Roulette* aired, the popular daytime talk show dedicated an episode to DPT vaccine injury, again featuring parents with heartrending cases of child illness pinned to the vaccine. A few months after Richie's death, Janet reflected,

> We are so conditioned to the idea that our doctor's word is to be trusted without question we don't think for ourselves. I am a nurse. I watched my son die that day, and I didn't even know what was happening until it was all over…If this had not happened to my baby, I would still be part of the uninformed public. I would still be taking my doctor's word as the word of God, like most mothers do.[59]

Another mother, Katherine, discussed feeling an immense loss of faith in doctors after her child's shots. "I feel like I have been lied to by those I trusted. People look up to doctors and think they're godlike…Doctors are powerful socially and are given a lot of respect. You think your doctor is always someone you can turn to, but I have lost that image. I see many doctors more as businessmen now, instead of people who care."[60] Katherine's account narrated a feeling of personal betrayal giving way to a broader change in her understanding of doctors. Essentially, she argued, doctors' moral standing was compromised. Her statement in *A Shot in the Dark* was a warning to question doctors' motivations before following their advice.

Encouraging parents to question scientific authorities by employing scientific evidence was the primary aim of Coulter and Fisher's project, and they set their sights on discrediting epidemiological and peer-reviewed studies, the bedrock of twentieth-century

[59] Coulter and Fisher, *DPT: A Shot in the Dark*, 8.
[60] Coulter and Fisher, *DPT: A Shot in the Dark*, 108.

biomedicine. In a chapter titled "Political Immunology" near the end of *A Shot in the Dark*, they asked readers:

> Are parents really to believe in large-scale studies when they know that those conducting the study failed to explore the details of each case? Are parents to stop worrying about their children dying or becoming brain damaged after a DPT shot because, upon the basis of 'double-blind' and 'controlled' studies, doctors proclaim the benefits of the pertussis vaccine clearly outweigh the risks? Will parents continue to be pacified by doctors who dismiss as 'anecdotal' their descriptions of the devastating brain injuries their once-normal children sustained shortly after receiving a DPT shot?[61]

These questions formed the bedrock of two parallel streams each that fed into the maturing vaccine-injury movement. In the first, activists argued that anecdotal evidence should be treated as valid empirical evidence to identify underlying problems with scientific data and medical care. In the second, activists explained that firsthand and secondhand anecdotal experiences had the power to cause distrust, or disbelief, in science. As these streams converged, a third argument emerged. Although the principles of science and biomedicine as paradigms were true, the practice of each was corruptible, and even unjust. The takeaway was that science and biomedicine, as they formed the foundation of modern society, were not worthy of unmitigated faith. Fisher and the leaders of Dissatisfied Parents Together continually attested to their belief in science and biomedicine. Yet, they also questioned vehemently the CDC's guidelines for mandatory pertussis vaccination, as well as doctors' fulfillment of that mandate.[62] Their project was, at least rhetorically, to create a gap between science, which was generally considered to

[61] Coulter and Fisher, *DPT: A Shot in the Dark*, 230.
[62] Heller, *The Vaccine Narrative*, 96.

be true and trustworthy, and its messengers, interpreters, and implementers, who could be negligent, or even nefarious.

Parent-activists framed their vaccine-injured children as voiceless and uncounted––easily, or willfully, forgotten by the medical establishment, and even the public. Speaking on behalf of "silent children," they posed ethical questions that were only made possible by Dissatisfied Parents Together's persistent activism. Why was vaccination presumed to be risk-free? Was mandatory mass vaccination so valuable that it was worth subjecting some children and families to adverse effects? And, if you had a choice, would you sacrifice your own for the greater good? Despite Dissatisfied Parents Together's messaging about the risks of the pertussis vaccine and the American medical establishment's inertia in responding to documented safety risks, the DPT debacle of the 1980s did not cause widespread distrust in science. Rather, it was most influential in fostering fears among parents of young children about the safety and necessity of the pertussis vaccine. Because their early goals were relatively conservative, they were successful in prompting legislative action and the legalization of "vaccine-injured" people as group deserving of government protections.

Yet by the end of the decade, Dissatisfied Parents Together saw fit to question all vaccine safety. Likening immunization laws to mandates "requiring parents to sacrifice their babies for society," an increasingly militant Barbara Loe Fisher was firmly in favor of vaccine choice. Speaking as though she had given up hope for "safe" vaccines, Fisher argued in *USA Today* that "we shouldn't be forced to play vaccine roulette with our children; we should have the right to become educated about vaccines and make

vaccination decisions without being threatened by anyone."[63] With this statement, Fisher invoked biblical imagery of child sacrifice, in effect raising the stakes of what mandatory vaccination laws required morally from American citizens. Whom do we trust with our children's wellbeing when the circumstances appear to be life or death? For the thousands of members of Dissatisfied Parents Together around the country, having blind faith in vaccines was difficult if you were paying attention. It was impossible for parents like Fisher, whose son, Christian, had purportedly suffered extensive brain damage after receiving his fourth DPT shot over fifteen years earlier, to trust that the DPT was safe.[64] In retrospect, Fisher felt she had "sacrificed" him for the cause of public health by complying with vaccine law and standard medical practice.

In 1984, Donna Middlehurst published an open letter in *DPT News*, the newsletter published by Dissatisfied Parents Together, following the death of her daughter, Julie. Middlehurst, wife of co-founder Jeff Schwartz, compared vaccine-related injuries and deaths to those sustained by soldiers in war. Why were there days dedicated to national remembrance for veterans and countless memorials to war dead but no such public acknowledgments of those who lost lives because of faulty vaccines, she wondered. Middlehurst noted, "In the case of the war against this particular disease, my child is a casualty, and no one cares…It is true that we are winning the war against disease, but no one is counting the bodies of the dead and wounded or honoring them in any way."[65]

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[63] Barbara Loe Fisher, "Vaccinating Our Kids: Make it Optional, Save a Child," *USA Today*, September 2, 1988.
[64] Chastain, *Chicago Tribune*, May 19, 1991.
[65] Donna Middlehurst, "An Open Letter to Parents," *DPT News* 1, no. 2, (1984), 8-9.

Congressman Henry Waxman (D-CA) echoed this sentiment at a subcommittee hearing to fund the NVICA years later. Waxman, who had helped write the NVICA, appealed to the committee using strikingly similar imagery:

> The particular tragedy and the paradox of vaccine injuries is that these children really are hurt in the line of public duty. They are required to receive vaccinations, not just for their own protection but also for the group immunity necessary to protect the population from disease and from the catastrophic medical costs of epidemics. But unlike veterans who are injured in a war or workers who are hurt on the job, these children have no place to file their grievances or turn to for care if they are hurt.[66]

That a prominent congressman spoke this way in his role as a policymaker was a sizeable accomplishment for parent-activists in the 1980s. Waxman's statement shined a new light on vaccinated children that recognized them as citizens, not only as disease vectors. Waxman assured the assembled committee that he and other lawmakers maintained a view of mass vaccination as a public good, an insurance policy against preventable deadly epidemics. But, as with insurance, there was a cost.

Parent-activists wanted doctors to openly acknowledge vaccine risks in ways that honored their children's experiences—they wanted the vaccine-injured child narrative to become a part of individual patient care. This has remained an unreasonable proposition in the minds of public health and medical professionals who followed standardized vaccination protocols and minimized discussion of risk to maintain high vaccine uptake. As many scholars have shown, people are unable to accurately calculate medical risk.[67]

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[66] Henry Waxman, Testimony, "Funding of the Childhood Vaccine Program," Subcommittee on Select Revenue Measures of the Committee on Ways and Means, U.S. House of Representatives, March 5, 1987, Washington, D.C.

[67] Aronowitz, *Risky Medicine*, 2015; Crawford, "Risk Ritual and the Management of Control and Anxiety in Medical Culture," *Health* 8, no. 4 (2004), 505-528; Reich, *Calling the Shots*, 75-86.

They falsely equate correlation with causation, and the miniscule percentages of "adverse events" found in population-based studies defy understanding. The DPT vaccine safety project posed a conundrum for vaccine policymakers and physicians. How could they reassure the public that, while activists had been correct about the DPT shot, they should accept other vaccines that had been on the market for decades? This was an impossible task, especially given that vaccines had such a long history of inciting fear and distrust among the masses.

Even in the wake of the implementation of VAERS, the adverse event reporting system, activists set their sights higher. They wanted vaccine choice, or the ability to abstain from a vaccine if they chose to. Dissatisfied Parents Together broadened its scope, rebranding itself the National Vaccine Information Center (NVIC) in the early 1990s. Vaccine choice became increasingly fraught as vaccine safety concerns diffused among various movements in American culture in the 1990s. Public health and consumer protection demands grew more radical and less scientific. Although the pertussis issue was largely solved by the switch to the acellular DTaP vaccine, the next battleground vaccine was for another trio of childhood illnesses: measles, mumps, and rubella (MMR). After the publication and retraction of Andrew Wakefield's fateful article, the vaccine-injured child narrative became a mainstay of autism awareness advocacy. In a similar vein, as the natural health movement grew alongside the natural mothering movement of the 1990s, children and their care were made sacred, causing a widespread interrogation, and shunning, of purportedly toxic, impure ingredients. The questions that DPT activists brought to the national conversation in the 1980s about the costs of herd immunity and

the trustworthiness of scientific messengers came to be seen as fringe when activists radicalized. Unfortunately, the window to debate important ethical questions was closed tightly.

# Part III: The Era of Controversy (1997 – 2015)

# CHAPTER FOUR

## Mother Warriors

"I hope you realize that this is not a book about autism. It's a book about faith. It's the story of a mother who believed anything was possible and never stopped looking for answers," wrote Jenny McCarthy in 2007 in the final paragraph of her bestselling book, *Louder Than Words*.[1] McCarthy, an actress, model, and comedian, had previously published irreverent books about pregnancy and first-time motherhood. With *Louder Than Words*, she established herself as an activist and, to many in the media, an anti-vaxxer. McCarthy recounted the horrors she believed the measles-mumps-rubella (MMR) vaccines had visited on her son Evan. Around the time of his MMR vaccinations, he developed autism (known as autism spectrum disorder as of 2013), a neurodevelopmental disorder of unknown origin with no medically recognized cures.[2] McCarthy employed the vaccine-injury narrative of the 1980s—Evan was a perfectly well toddler until he had one of his routine MMR shots. Later that day, he started having seizures, and gastrointestinal problems, and intellectual regressions followed. He also began repeatedly performing the same actions as though in a trance. McCarthy was distraught and, according to her narrative, Evan's doctors belittled her and dismissed his symptoms as unconnected—to each other and to the vaccine.

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[1] Jenny McCarthy, *Louder Than Words: A Mother's Journey in Healing Autism* (New York: Plume, 2007), 191.

[2] In 2013, the DSM-5 designated this disorder as "autism spectrum disorder." I use the term "autism" throughout this chapter to maintain historical accuracy and to differentiate the understanding of autism in the 1990s from autism spectrum disorder, which is discussed in Chapter Eight.

This was a familiar story in the 1990s, but McCarthy's version had a different ending. Instead of complete devastation, she reported that, with the relentless hope and the devoted persistence that only a mother could endure, she had healed Evan of autism with unorthodox detoxification methods and environmental and dietary changes. In this new Era of Controversy, which was driven by mercury-autism theory, vaccine hesitancy became identified with alternative and holistic medicine. During the 1990s and early 2000s, vaccine hesitancy was also maternalized. Hesitant communities recognized mothers as bearers of sacred knowledge about their children who were obligated to maintain, or regain, purity for vaccine-polluted children.

McCarthy blamed the MMR vaccine for causing Evan's autism despite doctors telling her otherwise and scientific evidence disproving mercury-autism theory. Because of her celebrity, she became the most recognized face of vaccine hesitancy in the early 2000s. Her activism—she wrote popular books on autism, co-founded the organization Generation Rescue, and shared her experiences in public forums such as *The Oprah Winfrey Show*—fueled vaccine skepticism debates among mothers. And her exampled caused many to search for exemptions from school vaccination requirements and to research alternative vaccination schedules, or to find therapies to "detoxify" their vaccinated children.

McCarthy emphasized two claims that characterized vaccine skepticism in the 1990s and early 2000s. First, mothers of children with autism (now read within hesitant communities as a vaccine injury) were "mother warriors" embodying such sacred traits as

the ability to discern the cause of their children's illness.[3] Second, vaccine *ingredients* were toxic pollutants that contaminated children's otherwise pure, healthy bodies. Different from the anti-smallpox vaccination skeptics from a century earlier who condemned the practice of *vaccination* as unnatural, the new MMR skeptics of the late 1990s and early 2000s castigated the adjuvants, or preservatives, that were in vaccine serums. Although most skeptics accepted the concept of building an immune response using vaccines, they became increasingly concerned about the delivery mechanisms. This was because alternative health communities considered chemicals and toxins to be the culprits causing a spate of confounding, life-altering illnesses.

Vaccination against routine childhood illnesses may have become a common part of growing up in the United States, but during this Era of Controversy, a diverse set of activists cast doubt on its merits. They feared that the costs of vaccination outweighed the benefits. They blamed the toxins in vaccines for causing drastic increases in cancer diagnoses, mental illness, developmental disorders, and chronic conditions that did not have cures.[4] Most importantly, they cast mothers as mother warriors whose maternal intuition was more useful than scientific or medical expertise, which was tainted by pharmaceutical and chemical industries. They believed that their own sick children were

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[3] Jenny McCarthy, *Mother Warriors: A Nation of Parents Healing Autism Against All Odds* (New York, Plume, 2009).

[4] Jeffery P. Baker, "Mercury, Vaccines, and Autism," *American Journal of Public Health* 98, no. 2 (February 2008); Wullianallur Raghupathi and Viju Raghupathi, "An Empirical Study of Chronic Diseases in the United States: A Visual Analytics Approach to Public Health," *International Journal of Environmental Research and Public Health* 15, no. 434 (2018). Skeptics also discussed this: Thomas Cowan, *Vaccines, Autoimmunity, and the Changing Nature of Childhood Illnesses* (White River Junction: Chelsea Green Publishing, 2018); Dan Olmsted and Mark Blaxill, *The Age of Autism* (New York: Thomas Dunne Books, 2010), 2.

the canaries in the coalmines of a polluted, immoral industrial world, signaling that public health programs had gone awry.[5]

**A Brief History of Measles, Mumps, Rubella Immunizations**

Measles is a highly contagious airborne virus that causes a red, bumpy rash, high fever, and respiratory symptoms that last roughly one or two weeks after infection. According to the CDC, if one person has measles, ninety percent of people near the infected person will become infected if they are not already immune.[6] Young children have a higher risk of severe complications, such as measles-induced encephalitis. In the decade prior to mass vaccination, roughly five-hundred Americans died of the measles per year, and there were three to four-million cases annually. Almost every child had the disease by age fifteen.[7] The mumps virus causes a low-grade fever, respiratory symptoms, and severe swelling in the salivary glands. Prior to the advent of a vaccine, mumps was a leading cause of deafness in adults. Rubella, a relatively minor viral infection characterized by a mild rash in most childhood cases, is most dangerous when transmitted in utero.[8] Congenital Rubella Syndrome can cause a woman to miscarry or have a baby with severe birth defects.

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[5] McCarthy, *Mother Warriors*, 76. McCarthy co-founded The Canary Party in 2011 with leaders of the alternative autism community. Its mission is "To stand up for the victims of medical injury, environmental toxins and industrial foods by restoring balance to our free and civil society and empowering consumers to make health and nutrition decisions that promote wellness." The Canary Party, "Homepage." Accessed August 8, 2022, https://canaryparty.org.

[6] "Measles Transmission," CDC (Reviewed November 5, 2020), https://www.cdc.gov/measles/transmission.html, Accessed August 21, 2022.

[7] "About Measles," CDC, last reviewed November 5, 2020, https://www.cdc.gov/measles/about/history.html.

[8] https://www.mayoclinic.org/coronavirus-covid-19/history-disease-outbreaks-vaccine-timeline/mumps

During the first half of the twentieth century, measles, mumps, and rubella were known as routine childhood illnesses. Children's picture books published in the 1950s with titles such as *Have a Happy Measle, a Merry Mumps, and a Cheery Chickenpox* and *Dear Little Mumps Child* portrayed the diseases as rites of passage—the itchy, uncomfortable inconveniences of an average middle-class childhood.[9] In these books, curling up in bed, missing school, and enjoying mother's chicken soup made weathering the measles or mumps a tolerable, or even enjoyable experience. However, when vaccines became available for measles (1963), mumps (1967), and rubella (1969), and then were combined into the MMR (1971), federal officials campaigned heavily for mass immunization, with the goal of measles eradication.[10] To beat measles would signify a new modern way of life.

Physicians and media around the country advanced a campaign that attempted to capitalize on the remaining "medical optimism" of the postwar period.[11] Messaging portrayed vaccination as a vital component of modern living and targeted mothers as the key decision makers, reinforcing gendered expectations about parental responsibilities and placing childhood vaccination decisions squarely within the mother's sphere. Measles, mumps, and rubella were relatively mild illnesses. As such, pro-vaccine campaigns pitched vaccination as a life improvement for both mother and child to

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[9] Jeanne Bendick, *Have a Happy Measle, a Merry Mumps, and a Cheery Chickenpox* (New York: Whittlesey House, 1958); Marguerite Rush Lerner, *Dear Little Mumps Child* (Minneapolis, MN: Lerner Publishing Group, 1959).
[10] Children's Hospital of Philadelphia, "Vaccine History: Developments by Year," March 30, 2021, https://www.chop.edu/centers-programs/vaccine-education-center/vaccine-history/developments-by-year.
[11] Conis, *Vaccine Nation*, 52-53. Conis argues that national officials grew confident that the vaccine technology and a comprehensive strategy for immunization would make eradication possible.

prevent the "nuisances Americans no longer needed to tolerate."[12] Implied was that vaccination would result in reduced sick days—less time spent caring for ill children, and less time away from work. In the context of women's workforce precarity, the appeal to gender equality was striking. Despite these stated practicalities and marketing efforts, MMR vaccine uptake was low throughout the 1970s.

As historian Elena Conis has argued, if people were going to voluntarily vaccinate their children against measles, mumps, and rubella, then parents needed to be convinced that what they remembered as nonthreatening illnesses from their own childhoods were truly dangerous, even deadly.[13] Under the growing threat of a measles epidemic in 1972, physician and popular medical writer Walter C. Alvarez entreated mothers to vaccinate. "Today, every mother who loves her children will get them vaccinated both against rubella and against ordinary measles," he asserted.[14] Insisting that vaccination was proof of maternal love exemplified the emotional pulls used to increase interest in the MMR vaccine. Alvarez's language of prescriptive precaution espoused older, postwar paternalistic reasoning. In the 1970s, mothers had a choice: vaccinating against childhood "nuisances" or spending the emotional and financial labors of increased caretaking. To scientists and vaccine makers, this seemed to be an easy contest. For some mothers, the decision was anything but self-evident.

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[12] Conis, *Vaccine Nation*, 79.
[13] Conis, *Vaccine Nation*, 54-55, 63-64. Conis argues that for measles, mumps, and rubella, the relative seriousness with which the diseases were portrayed was directly correlated to the availability of a vaccine.
[14] Walter Alvarez, "Epidemic of Measles Feared," *Los Angeles Times*, January 6, 1972.

The cultural landscape of ideal mothering was shifting away from the expertise-driven scientific mothering of the midcentury period. Second-wave feminist activism focused on destabilizing patriarchal authority, including that held by doctors and the medical establishment. Feminist and patients' rights advocates argued that personal experiences with their own bodies were legitimate, authoritative, and should not be relegated to the medically insignificant bin of anecdotal evidence. For decades they pointed out the sex bias in medical research and the inherent sexism of clinical guidelines.[15] Studies had long used only male bodies to formulate generalized diagnostic criteria and medication dosing, presuming that women's bodies were the same.

Now, there were many new mothers, including a subset who self-identified as "natural mothers," who were politically liberal, feminist, and environmentally conscious. They envisioned themselves as part of a "radical social movement" that idealized mothers exerting tight control over their families' consumption.[16] They did not trust institutions or outside experts. As a form of resistance against the norms of scientific motherhood, more women opted to "de-medicalize" pregnancy and childbirth, arguing that these were essential, natural, and sacred women's experiences that had been coopted by the biomedical establishment.[17] These natural mothers asserted a woman-centered approach

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[15] Barbara Ehrenreich and Deirdre English, *Complaints and Disorders: The Sexual Politics of Sickness* (New York: The Feminist Press, 1973); Katherine A. Liu and Natalie A. DiPietro Mager, "Women's Involvement in Clinical Trials: Historical Perspective and Future Implications," *Pharmacy Practice* 14, no. 1 (January-March 2016): 1-9; Alison M. Kim et al., "Sex Bias in Trials and Treatment Must End," *Nature* 465 (June 10, 2010): 688-689.
[16] Chris Bobel, *The Paradox of Natural Mothering*, 26.
[17] Pamela Klassen, *Blessed Events: Religion and Home Birth in America* (Princeton, NJ: Princeton University Press, 2001); Jacqueline H. Wolf, *Deliver Me From Pain: Anesthesia and Birth in America* (Baltimore, MD: The Johns Hopkins University Press, 2012).

that gendered biomedicine as masculine and denounced it as unnatural. In the "natural birth" movement, women conceptualized childbirth as a spiritually rewarding reclamation of women's lifegiving powers that, for millennia, had been the domain of women, but in recent centuries had been usurped by the institutions of patriarchy. Some women chose not to give birth at a hospital, opting instead to labor at home or at a birthing center, where they were aided by hired midwives and doulas instead of nurses and doctors. These women tended to embrace breastfeeding as naturally superior to artificial formula-feeding.[18] Like the environmentalists of their day, they celebrated the power of nature and its organic rhythms.

The safety of the MMR vaccine came under intense scientific and public scrutiny, both in the United States and England, because of two important, unrelated events in the late 1990s. The first was the passage of the FDA Modernization Act of 1997. This multifaceted legislation included a directive to the FDA to assess the safety of every food and medical product that included any form of mercury, including the vaccine adjuvant thimerosal, which contained ethylmercury. Thimerosal was a component of the MMR, flu, and hepatitis B vaccines at the time. Organizations such as the NVIC were up in arms. The CDC explained publicly that thimerosal was not harmful to humans in the small quantities used in vaccines and was cleared quickly from the body. It was also different from the almost identically named *methylmercury*, which was indeed harmful to

[18] Popular medical doctor and newspaper columnist Robert Mendelsohn argued that breastmilk was a key to providing immunity to babies and skipping vaccines. Mendelsohn, *How to Raise a Healthy Child…in Spite of Your Doctor*, 238, 251. Bernice L. Hausman, *Mother's Milk: Breastfeeding Controversies in America* (New York: Routledge, 2003).

human health. However, distilling the truth about thimerosal did little to assuage the concerns that vaccine skeptics held about toxic chemicals building up in young bodies.[19]

Concerns multiplied in 1998 when *The Lancet* published Andrew Wakefield's article linking bowel disease in children to autism *and* correlating the joint-onset of these disorders to MMR shots. As the journal's longtime editor Richard Horton admitted, the article "ignited one of the most sectarian debates in modern scientific history."[20] The article sparked a firestorm of public opinion against a biomedical establishment increasingly viewed as a "for-profit medical industrial complex."[21] During the 1990s, observers noted an unprecedented rise in the rates of cancer and chronic medical conditions that biomedical models of disease and treatment were ill-equipped to handle. Demand for complementary and alternative medical practices to treat non-infectious, chronic medical conditions was high. These practices included developmental disorders, autoimmune diseases, chronic pain, gastrointestinal disease, and some cancers.[22]

Many leaders in the newly publicized and diverse field of alternative medicine expressed concerns about the environmental causes of illness, such as ingesting chemicals from pesticides and other toxic materials, inhaling polluted air, and even

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[19] Mnookin, *The Panic Virus*, 125-126. Centers for Disease Control and Prevention, "Thimerosal and Vaccines," last modified August 25, 2020, https://www.cdc.gov/vaccinesafety/concerns/thimerosal/index.html.

[20] Richard Horton, *MMR: Science and Fiction*, xiii.

[21] George L. Engel wrote in 1977 that the entire field of biomedicine was "in crisis" because of "an adherence to a model of disease no longer adequate for the scientific tasks" at hand. In other words, biomedicine was failing to adapt to changing population health problems. Engel, "The Need for a New Medical Model: A Challenge to Biomedicine," *Science* 196, no. 4286 (April 8, 1977): 129-136; Arnold S. Relman, "The New Medical-Industrial Complex," *The New England Journal of Medicine* 303, no. 7 (October 23, 1980): 963-970.

[22] David M. Eisenberg et al. "Unconventional Medicine in the United States," *The New England Journal of Medicine* 328, no. 4 (January 28, 1993): 246-252.

receiving vaccines.[23] These were contemporary versions of the worries that had driven pro-sanitation activists in the early twentieth century, and they resonated most with people who suffered from constellations of physical and mental symptoms that eluded biomedical treatments or explanations.[24] In the works of medical doctors-turned-alternative medicine ambassadors such as Deepak Chopra, Andrew Weil, and Christiane Northrup, environmental causes helped contextualize illnesses and provide meaningful narratives to address issues of ultimate concern that were crying out for attention.

Unsurprisingly, parents searching for causes and cures for autism were drawn to these ideas as explanations for their children's disorders. As McCarthy articulated in books and interviews, traditional medical specialists could not offer a reason for her son's developmental regression or debilitating physical symptoms. The treatment options they suggested, such as speech therapy, were not aimed at fixing root causes, and they did not incorporate a mother's "emotional guidance system."[25] The Wakefield article was instrumental in inspiring a coalition of doctors and parents that became known, broadly, as the "alternative autism community." This community saw the MMR vaccine, including the thimerosal it delivered and the toxin overload it caused, as the root cause of autism.[26] They believed that if the environment had injured their children, then the

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[23] Deepak Chopra, *Quantum Healing* (New York: Random House, 1989); Christiane Northrup, *Women's Bodies, Women's Wisdom* (New York: Bantam, 1995); Andrew Weil, *Spontaneous Healing* (New York: Knopf, 1995).
[24] Eula Biss, *On Immunity*, 40; Frank, *The Wounded Storyteller*, 2013; Robert C. Fuller, *Alternative Medicine and American Religious Life* (New York: Oxford University Press, 1989); Candy Gunther Brown, *The Healing Gods* (New York: Oxford University Press, 2012); Harrington, *The Cure Within*, 2008.
[25] Kashana Cauley, "I Used to Be an Anti-Vaxer," *The Atlantic* (March 6, 2015); McCarthy, *Louder Than Words*, 30, 40.
[26] Mark Berman, "Jenny McCarthy Says She Isn't Anti-Vaccine. Here Are Some Other Things She Has Said About Vaccinations," *The Washington Post*, April 16, 2014; McCarthy, *Louder Than Words*, 83.

environment could heal them as well, with strict diets that eliminated toxins and other "detoxification" protocols. Mainstream biomedical practitioners witnessed drop-offs in MMR vaccination in their practices and fielded demands for unapproved treatments and services that they could neither provide nor medically justify.

When compared to the focus and practicality of DPT safety activism in the 1980s, vaccine skepticism in the late 1990s and early 2000s was more existential and revolutionary. Parents formed moral communities that focused, not on fixing one potentially faulty vaccine, but on revolutionizing the concept and practice of routine childhood vaccinations.[27] Because their concerns were much broader, they were often referred to as anti-vaxxers. That is not quite right. They were a moral minority who desired vaccine reform fighting against a majority that did not see a need for reform at all. Most of these skeptics followed the law by vaccinating their children when required by their local school districts. But they did so hesitantly and not without fear that the science they were being told by doctors was unreliable or inaccurate (or both). Activists called for research studies that compared the health outcomes of fully vaccinated children to unvaccinated children—studies that, for ethical reasons, would never be entertained by established researchers.[28] They considered their individual children's unique health histories, opting to vaccinate them according to schedules that differed from the ones

[27] Olmsted and Blaxill, *The Age of Autism*, 5.
[28] Reich, *Calling the Shots*, 142-3. A study of this kind is considered unethical because it would deny vaccination to children and put them at increased risk of contracting life-threatening diseases.

recommended by the CDC.[29] They demanded "informed consent" about the risks of all vaccines and their ingredients.[30]

In 1999, the American Academy of Pediatrics and the Public Health Service responded to public concern about ethylmercury in the MMR vaccine. In their joint statement, both groups argued that the amount (and type) of mercury present in thimerosal-containing vaccines posed a "probably much smaller risk" to young children than abstaining from vaccination. In short, the risk of contracting a vaccine-preventable disease was much higher than any potential reaction to thimerosal. Nevertheless, they vowed to work with vaccine manufacturers to remove thimerosal-containing vaccines from the market "as soon as possible," noting that European officials and manufacturers were doing the same.[31] The statement described the removal of thimerosal from vaccines in terms of public perception rather than medical necessity—a response to the dangers of *anti-vaccination*, not the dangers of mercury.

Rather than quell anxieties about toxicity and vaccine schedules, the official statement had the opposite effect on concerned parents. Even though their agitation had effected a desired change that made the MMR more consumer-friendly, more mothers saw the FDA's actions as an admission of guilt that the prior vaccine *was* harmful. In

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[29] Kirkland refers to this reasoning as the "vulnerable minority framework." Kirkland, *Vaccine Court*, 104; Reich, *Calling the Shots*, 83-86.

[30] Berg et al. argue that there are at least three working definitions of "informed consent." Informed consent prioritizes patient decision-making about medical procedures and treatment, requiring physicians to disclose risks. Jessica W. Berg et al. *Informed Consent: Legal Theory and Clinical Practice* (New York: Oxford University Press, 2001), 16. Also Reich, *Calling the Shots*, 69-70.

[31] "Thimerosal in Vaccines: A Joint Statement of the American Academy of Pediatrics and the Public Health Service," July 9, 1999, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm4826a3.htm. Thimerosal has not been used in childhood vaccines since 2001, https://www.cdc.gov/vaccinesafety/concerns/thimerosal/faqs.html but it is used in some influenza vaccines.

effect, the change amplified and leveraged grassroots fears about vaccine safety that had been percolating in parent advocacy groups.[32] The government forcing a vaccine change served to legitimize vaccine hesitancy, ceding the moral high ground to activists. After all, they argued, thimerosal was not the only chemical in vaccine adjuvants.

Thimerosal was the tip of the iceberg. According to these activists who came from all areas of the political spectrum, chemicals were not only toxic. They were, variously, *morally* impure because they caused unnecessary ecological trauma, increased chronic disease, and even disturbed children's spiritual balance.[33] The idea that what entered the body could change a person—body and soul—reignited the concept of vaccines as pollutants that had been popular during the late nineteenth century with the smallpox vaccine. This time, instead of cow lymph, skeptics feared chemicals. They also worried that some children had genetic predispositions to adverse vaccine reactions.[34]

For a few years following the Wakefield article, many in the media portrayed vaccination as a parental choice even though state vaccination mandates were no less stringent. On talk shows such as *The Oprah Winfrey Show* and *Larry King Live*, people asked questions that ranged from the specific to the existential. Is the MMR to blame for rising autism cases? Did the increasing number of vaccines for children cause toxic overload? Do you believe in vaccines? These public discourses moved many discussions about vaccination outside of the pediatrician's office and into the home as mothers

[32] David Kirby, *Evidence of Harm*, 58.
[33] Bellasco, *Appetite for Change*, 60-68; Miller, *Building Nature's Market*, 117; Jacqueline Verrett and Jean Carpenter, *Eating May Be Hazardous to Your Health* (New York: Anchor Books, 1975).
[34] Biss, *On Immunity*, 39; Reich, *Calling the Shots*, 75.

engaged with McCarthy and vaccine-hesitant doctors through their televisions and book discussions with friends.[35] Unsurprisingly, the more credence that vaccine skeptics were given in the media, the more people became skeptical. Some utilized nonmedical exemptions for their children under state-level protections for religious or personal beliefs, citing objection to vaccination, and others found doctors who were willing to diverge from the CDC vaccination schedule and put more space between shots than was recommended.[36] In 2003, just over twenty percent of parents had opted for an alternative vaccination schedule for their children.[37] As a result of these actions, there were more unprotected populations vulnerable to the measles and mumps, ultimately threatening herd immunity protections.[38]

After numerous scientific studies disproved Wakefield's thesis and his colleagues disavowed him and thimerosal was removed from the MMR vaccine, the media aligned itself more firmly with the institutions of biomedicine and public health. For officials, the damage was already done. The media tacked toward biomedical orthodoxy, providing platforms in the 2010s for staunchly pro-vaccination medical doctors such as Paul Offit at the Children's Hospital of Philadelphia and Peter Hotez at Baylor College of Medicine. Being against, or vocally skeptical of the MMR, was bad citizenship, ignorant, irrational, and fringe. Espousing pro-vaccine sentiments and trusting the MMR represented good citizenship and being well-educated, rational, and normal. To most Americans, Jenny

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[35] McCarthy, *Mother Warriors*, Ch. 1.
[36] Varun K. Phadke, et al. "Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States," *Journal of the American Medical Association* 315, no. 11 (2016): 1149-1158.
[37] Philip J. Smith et al., "The Association Between Intentional Delay of Vaccination Administration and Timely Childhood Vaccination Coverage," *Public Health Reports* 125, no. 4 (August 2010): 534-541.
[38] Yamiche Alcindor, "Anti-Vaccine Movement Is Giving Diseases a 2nd Life," *USA Today* (April 6, 2014).

McCarthy and Andrew Wakefield were crazy, narcissistic, and even villainous.[39] The vaccine debate was over. However, to a vocal minority, they were prophetic figures sounding the alarm about medical malpractice of the highest order.[40] For those who felt alienated from the establishment, being pro-vaccine was mindless and passive, while being skeptical of vaccines, especially the MMR, was active and warrior-like.

The MMR-autism debacle fueled a subgenre of books that covered "anti-vaxxing" from both sides of the debate.[41] In 2021, researchers quantified the effect that the Wakefield article had on media coverage, adverse event reporting, and negative beliefs about the MMR vaccine. They concluded that the number of MMR adverse events reported in the United States doubled in the six years after the publication, and confidence in the safety of the MMR vaccine plummeted. Eleven years after the 2010 retraction—and twenty-three years after the publication—one-in-three Americans believed that the MMR vaccine was a cause of autism.[42] While the United States government had once confidently projected that measles would be eradicated by 1967, it

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[39] Susan Dominus, "The Crash and Burn of an Autism Guru," *New York Times*, April 20, 2011; Azeen Ghorayshi, "The World's Most Notorious Anti-Vaxxer Wants a Second Act," Buzzfeed News, October 1, 2017; Karl Tao Greenfeld, "Jenny McCarthy and Autism-Vaccine Debate Divides Parents," *Time*, February 25, 2010.

[40] Priyanka Boghani, "J.B. Handley: No Study Shows Vaccines Didn't Cause My Son's Autism," PBS News, April 27, 2015. The "Age of Autism" blog, founded in 2007, is a repository of autism-related vaccine hesitancy. Its authors were strongly influenced by Wakefield. Accessed August 11, 2022, https://www.ageofautism.com.

[41] For a few contrasting arguments about the MMR-autism controversy, see Richard C. Horton, *MMR: Science and Fiction*; Seth Mnookin, *The Panic Virus*; Paul Offit, *Autism's False Prophets*; David Kirby, *Evidence of Harm: Mercury in Vaccines and the Autism Epidemic*; Dan Olmsted and Mark Blaxill, *The Age of Autism: Mercury, Medicine, and a Man-Made Epidemic* (New York: Thomas Dunne Books, 2010).

[42] Matthew Motta and Dominik Stecula, "Quantifying the Effect of Wakefield et al. (1998) on Skepticism About MMR Vaccine Safety in the U.S.," *PLOS One* (August 19, 2021).

was not until 2000 that the goal was achieved.[43] Eradication was possible only because the MMR vaccine was mandatory for schoolchildren in every state. Even then, eradication was short-lived.

**Mother Warriors**

When Jenny McCarthy proudly identified as a mother warrior in her 2008 book of the same name, the epithet resonated with many mothers who were vaccine hesitant. The vaccine hesitancy that followed from mercury-autism theory was an embodied religious practice in which mothers embraced their maternal intuitions allowed them to read and interpret their children's bodies and cognitive development. Combining instinct with scrutiny, mother warriors claimed to be practically omniscient about their children's unique needs. They also fought relentlessly on behalf of those needs, demanding to be recognized by doctors and other health experts. Mother warriorhood was a subset of the larger cultural trend of "intensive mothering," which was the dominant social construction of proper culturally condoned parenting during the 1990s and early 2000s.[44]

According to sociologist Sharon Hays, intensive mothering entailed "methods [that were] child-centered, expert-guided, emotionally absorbing, labor-intensive, and financially expensive."[45] In this cultural milieu, vaccine skeptics built their reasoning

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[43] Elena Conis, "Measles and the Modern History of Vaccination," *Public Health Reports* 134, no. 2 (2019): 118-125; Alan Hinman et al. "Evolution of Measles Elimination Strategies in the United States," *The Journal of Infectious Diseases* 189, Supplement 1 (May 2004): S17-S22.
[44] Sharon Hays, *The Cultural Contradictions of Motherhood* (New Haven, CT: Yale University Press, 1998), Molly Ladd-Taylor and Lauri Umansky, eds. *Bad Mothers: The Politics of Blame in Twentieth-Century America* (New York: New York University Press, 1998).
[45] Hays, *The Cultural Contradictions of Motherhood*, 8.

upon the foundation of the mother-child relationship. Accordingly, mothers, ought to care for children as sacred entities who were born pure, natural, and untainted by the pollutants of modern life. However, because vaccine hesitancy is an expression of distrust in experts and established authority figures, vaccine-hesitant mother warriors diverged from the intensive mothering mold by turning their attentions into the home, instead of toward external experts.[46] They elevated their own intuition into a form of sacred wisdom that superseded the orthodox medical knowledge of the time. In an interview with Oprah Winfrey, McCarthy famously refuted a CDC statement that asserted the scientific basis of the MMR vaccine's safety, saying, "At home, Evan is my science."[47]

This was not a simple retort. It was an assertion of her mothering as an embodied religious practice in which she used her felt-sense intuition, care, and prayers to discern what environmental factors were affecting Evan and to heal him. Turning inward, McCarthy followed her "emotional guidance system" to direct her to the next alternative medical practitioner. She sacralized the thankless rote tasks of single parenting a son whose selfhood, she believed, was locked away, the key buried deep in his cells. Her work of preparing dairy-free, nut-free, soy-free, gluten-free meals to root out potential allergens, of toting Evan to specialists, speech pathologists, and behavioral therapists to encourage him to regain his speech, of holding his body back as he repeatedly banged his head against the wall, was enshrined with meaning. And she prayed. In *Louder Than Words*, McCarthy recounted her thought processes, punctuating them with near-constant

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[46] Reich, *Calling the Shots*, 166.
[47] McCarthy, *Mother Warriors*, 9; "Mothers Battle Autism," Oprah.com, September 18, 2007, https://www.oprah.com/oprahshow/mothers-battle-autism. Accessed August 12, 2022.

prayers to God. She prayed for help. She prayed for God to give her signs that her intuition was working.

The sentiment was subversive. Grounding her knowledge in the domestic sphere of the home, McCarthy asserted her primacy over Evan's well-being. Combining spiritual and scientific logic, McCarthy believed that Evan embodied science, or truth. As his mother, McCarthy was the seer who was able to discover him, to deduce the mysteries wreaking havoc on his brain, body, and behavior. Implied was that she did not require guidance from scientists and their communicators, although she proudly relied on, and amplified, the voices of alternative medical knowledge. McCarthy knew that sharing the sources of her knowledge, and the conviction that the MMR vaccine had triggered autism in Evan, was socially and scientifically transgressive. Portraying herself as a reluctant prophet, she explained, "I believe in manifestations…and I believe that the collective energy of all the women who had been waiting for someone to speak for them had manifested me as the one to do it…These moms needed a mom who went through hell and back to save her kid."[48]

Going to hell and back required mothers to assume the duties of the outside experts they distrusted. In *Mother Warriors*, McCarthy quoted a letter sent to her by a mother named Coral Bergmann, who wrote:

> I am my son's full-time researcher, biochemist, pharmacist, educator, doctor, nutritionist, and chef. I control all aspects of his environment down to the smallest detail. They say that the children who fully recover [from autism] have fanatical parents. I smiled when I first read this and told my son: 'You are so in! I am fanatical.'[49]

[48] McCarthy, *Mother Warriors*, 25.
[49] McCarthy, *Mother Warriors*, 187.

Fanaticism was the currency of mother warriorhood. It was the vaunted capacity to watch over, even control, all aspects of children's lives. This impulse was deeply felt and embodied, coming from "deep inside."[50] Sociologist of religion Nancy Ammerman refers to this type of knowledge as "extra-theistic" spirituality, in which an individual derives knowledge of the immanent from "the inner core of individual self-worth" and requires "no authority beyond the person's own experience."[51] For mother warriors, maternal instincts were infallible ways of knowing what a child required. Vaccine-hesitant parents characterized these instincts as innate knowledge-states that physicians and traditional scientists could never master. As such, maternal fanaticism was a necessary mindset for protecting children from outside harms, and it described the ability to perform a sacred duty and access restricted truths.

In all cultures, parental roles are socially constructed and change over time. The constraints of reproductive biology—themselves changing over time—obscure the social, and often religious, influences on contemporary ideals of family life, childrearing advice, and even parent-child relationships. However, scholars have accounted for changing perceptions of mothers and motherhood, children and childhood, throughout American history. Their studies highlight the intertwining influences of religion, race, gender, class, and science in establishing and changing the norms and ideals that influence the social value of mothers, fathers, and children. To understand vaccine hesitancy, it must be both

[50] Bobel, *The Paradox of Natural Mothering*, 89.
[51] Nancy Tatom Ammerman, *Sacred Stories, Spiritual Tribes: Finding Religion in Everyday Life* (New York: Oxford University Press, 2013), 34-35.

historicized as a response to vaccine practices and fears in a specific time *and* interpreted according to the archetypes of maternal roles that are shaped by cultural constructions of mothers, children, and childrearing.

From the mid-twentieth century through the 1980s, parenting guidebooks, such as those by Dr. Benjamin Spock, taught new mothers the principles of "scientific mothering" in which mothers learned to heed the advice of scientific and medical experts in every aspect of childrearing.[52] Women's intergenerational knowledge about childbearing and raising was less valuable when there were medical doctors using scientific evidence to provide advice. The proper mother was a passive learner who followed medical expertise instead of centuries-honed maternal instincts when it came to raising their children. Children were believed to embody the modern future, and therefore needed modern care.[53]

By the 1970-80s, scientific motherhood was deeply challenged by the insurgent women's rights movement, which questioned the authority of experts, traditional gender roles, and gender equality. Despite ongoing cultural clashes over proper gender roles between feminists and religious conservatives, a new cultural understanding of ideal mothering took a broad hold in the United States during the latter decades of the twentieth century which, ironically, reinforced a more conservative, "separate spheres"

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[52] Rima D. Apple, *Perfect Motherhood: Science and Childrearing in America* (New Brunswick, NJ: Rutgers University Press, 2006). According to Apple, scientific motherhood was characterized by trust in external, expert advice on childrearing methods and the perception that there is a correct, or scientific, way to raise healthy and prosperous children, tapered off owing to the growth of second-wave feminism in the 1970s. Barbara Ehrenreich and Deirdre English, *For Her Own Good* (New York: Anchor Books, 1978), 240.

[53] Lee Edelman, *No Future: Queer Theory and the Death Drive* (Durham, NC: Duke University Press, 2004).

approach to family life in which mothers were the primary caretakers of children and the home. Just as women broke glass ceilings and gained access to previously male-dominated spaces in business and government, the idealized form of mothering became *more* hands-on. It should be intensive and expensive.

This new understanding of mothering was most often exemplified by white, affluent homemakers, but studies have shown that people of color and those with fewer economic and cultural resources often "mothered intensively" using emotional energies.[54] Advice columns and guidebooks espoused the values of intensive mothering by promoting practices that required an unyielding focus on children. These practices ranged from cooking organic plant-based meals, to scheduling extracurricular activities, to researching vaccine ingredients. Intensive mothers believed that the correct way to love their children was to devote as much time, emotional and physical energy, and money to them as possible. Critics in the early 2000s dismissed maternal intensity as "helicopter parenting," arguing that excessive "hovering" caused children to lack independence as young adults.[55] American parenting became fear-based and "synonymous with worry."[56] Much of this worry was felt by mothers, whose own social value was directly linked to their children's wellbeing. With so much agency over their mothering, vaccination was just one area of special concern. Having matured during the 1980s and 1990s, these mothers bore the intellectual and emotional weight of seeing the vaccine-injured child

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[54] Sinikka Elliott et al. "Being a Good Mom: Low-Income, Black Single Mothers Negotiate Intensive Mothering," *Journal of Family Issues* 36(3), 2015: 351-370.
[55] Margaret K. Nelson, *Parenting Out of Control: Anxious Parents in Uncertain Times* (New York: New York University Press, 2010). Psychologist Holly Schiffrin has researched the effects of "helicopter parenting" extensively.
[56] Apple, *Perfect Motherhood*, 1; On parental anxieties, see Biss, *On Immunity*, 35.

movement in the news and feeling the doubt and fear that accompanied it. For intensive mothers, every choice was high-stakes and fearsome.[57] When it came to the MMR vaccine, many feared terrible consequences if they made even one wrong decision. Vaccines, in concept and in practice, were easy objects on which to project these fears. After all, vaccination was a decision you could never take back.

The pages of *Mothering* magazine, a popular resource for "natural mothers," were often filled with critiques of mandatory vaccination, which authors and editors condemned as governmental overreach. *Mothering* editorials promoted maternal authority in caring for children's bodies. The magazine also published letters to the editor written by loyal readers. Over decades, readers mailed their letters to *Mothering*, sometimes to express vaccine hesitancy, and more often to ask questions of, or offer advice to, other readers, forming a community based on shared practices and beliefs.[58] Sarah Logan, writing to *Mothering* from Waco, Texas, in 1992, expressed that choosing not to vaccinate her two sons had been a difficult decision. She and her husband wanted to protect their children from illness, but they feared adverse effects from immunizations. Logan wrote that, in lieu of vaccinating, she had breastfed each of her sons for three years to strengthen their immune systems. She believed that this had allowed the boys to stave off illnesses and remain unvaccinated. Logan concluded:

> For me and my family, far too many questions have not been asked, much less answered, to justify adherence to AMA vaccination guidelines. We have endured

[57] Elena Conis, "A Mother's Responsibility: Women, Medicine, and the Rise of Contemporary Vaccine Skepticism in the United States," *Bulletin of the History of Medicine* 87, no. 3 (2013): 407-435.
[58] Reich also demonstrates how building communities of likeminded mothers creates social capital for vaccine hesitancy as a cause. See Jennifer A. Reich, "'We Are Fierce, Independent Thinkers and Intelligent': Social Capital and Stigma Management Among Mothers Who Refuse Vaccines," *Social Science & Medicine* 257 (2020): 1-9.

> criticism for our decision—something far more bearable than the guilt we would suffer were we to vaccinate and find out later how damaging this practice is. In our hearts, we know we have made the right choice.[59]

Logan's letter exemplified many of the core characteristics of both intensive and natural mothering. Using her maternal intuition, Logan had identified vaccines as a potential danger to her children. Her conviction was strong enough that she had researched and gone against medical convention and doctor's orders. Still, she wanted to provide her children with the benefits of vaccination, so she chose extended breastfeeding, presumably to transfer some of her own antibodies to her children—a very physically demanding effort. In the end, the Logans took responsibility, and paid steeply, to protect their kids against a very unlikely outcome. In the pages of *Mothering*, the Logans' case marked empowered, authoritative, and activist parenting. Extended breastfeeding, intrinsically an "intensive" maternal activity, was imbued with a sacred value. It was a sacrifice or duty coded as morally responsible. Quite literally, only a mother could protect her child—from illness and from a derelict medical system.

Intensive, or sacred, mothering practices created a dilemma for mothers. Their values, inherited from the feminist women's health and patients' rights movements, empowered mothers to trust themselves above all others when it came to their children's wellbeing. Yet, this responsibility saddled them with fear, anxiety, ill-will, and tremendous emotional labor—it was a sacrifice of their own selfhood for that of their children. Their rationale poses many questions about just how empowered an intensive,

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[59] Letter from Sarah Logan to *Mothering* magazine, 1992, printed in *Vaccination: The Issue of Our Times*, ed. Peggy O'Mara, 1997, 203.

vaccine-hesitant mother could be. Mothers claimed ownership over sacred knowledge, but the costs of this responsibility were high. They were largely constrained to the domestic sphere, where children were valued more highly than themselves, and they performed labors whose value was socially unrecognized and financially uncompensated. In effect, intensive mothering resuscitated the cultural value of separate, gendered, spheres that harkened back to the mid-nineteenth century.[60] In this light, the trend of intensive mothering could be viewed as backlash *against* second-wave feminism, with its effects trickling down to vaccine hesitancy and increased abstention. Ironically, feminism enabled sacred mothering, empowering mothers to reclaim their children's care from uncaring professionals in white coats. Yet, it also reinforced the paradigm of gendered "separate spheres" that feminists had fought so hard to break.

Vaccine-abstaining mothers justified their decisions with three turns of logic. First, they equated vaccination with vaccine injury, or at least, a higher likelihood of vaccine injury. In legitimizing the data of anecdotal evidence and vaccine-injury narratives, they created a false equivalence to scientific, population-based data.[61] Second, they weighted the hypothetical outcome of "vaccine injury," typically imagined as their children developing autism, as far worse than catching a vaccine-preventable disease.[62]

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[60] Ann Douglas, *The Feminization of American Culture* (New York: The Noonday Press, 1977); Christine Leigh Heyrman, *Southern Cross: The Beginnings of the Bible Belt* (Chapel Hill, NC: The North Carolina University Press, 1997), 158; Kathi Kern, *Mrs. Stanton's Bible* (Ithaca, NY: Cornell University Press, 2001), 85-86; Barbara Welter, "The Cult of True Womanhood: 1820-1860," *American Quarterly* 18, no. 2 (Summer 1966), 151-174.

[61] Reich, *Calling the Shots*, 166. See also Heller, *The Vaccine Narrative*, 104; Johnston, 273-4.

[62] Imber, *Trusting Doctors*, 114. Many argue that vaccines are victims of their own success and that vaccine risks "become more salient as the diseases prevented by vaccines disappear." See Conis, *Vaccine Nation*, 12.

Third, if a mother chose vaccination and an adverse event occurred, she was morally responsible. As Sarah Logan expressed to *Mothering* readers, the sacrifices she made to have her child remain unvaccinated were "far more bearable" than the guilt she would feel if she sacrificed both herself and her child. Imagined guilt over a statistically miniscule outcome was worse than the personal sacrifices required to keep her children unvaccinated.

This was because intensive mothers inhabited a moral world of childrearing in which maternal sacrifice was both a "symbolic and a practical requirement" for expressing ideal morality and motherhood.[63] The idea and practice of sacrifice is indelibly religious. From offerings to temple gods in ancient cultures spanning from India to Greece and Mesoamerica to China, to the story of Abraham and Isaac in the Hebrew Bible, to Jesus as the sacrificial lamb redeeming the souls of humanity in the New Testament, sacrifice is paradoxically violent, even monstrous, yet purifying.[64] It is necessary, periodically, because it restores the social order, which is life-affirming, good, and natural. With their sacrifices, these intensive mothers reasoned that they were not only protecting their children, but also themselves from guilt and sorrow.

But what of mothers who heeded the advice and vaccination schedules that their pediatricians presented? Could they be *less* anxious because deferring to the experts decreased their personal responsibility for an adverse event? In the case of mandatory

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[63] Pam Lowe, *Reproductive Health and Maternal Sacrifice: Women, Choice, and Responsibility* (London: Palgrave Macmillan, 2016), 203.
[64] David Frankfurter, "The Construction of Evil and the Violence of Purification," in *The Oxford Handbook of Religion and Violence*, ed. Mark Juergensmeyer et al. (New York: Oxford University Press, 2013), 521-532.

vaccination, could passivity make a mother feel *more* empowered? These questions went largely unasked during the Era of Controversy. Why? Because vaccine-hesitant activists understood mothers' sacred intuitions, and the practices of intensive mothering that they required, as fundamentally at odds with the axioms of the biomedical establishment. In critical writings, vaccine skeptics portrayed the medical system as a powerful sham "religion" run by doctors acting as priests. These doctor-priests prescribed drugs and vaccines in a one-size-fits-all gospel to blind followers—the herd.

Vaccine-hesitant activists used this metaphor to urge parents to take control of their children's healthcare and to be mother warriors. This rhetoric encouraged personalized, feminized care that utilized their sacred knowledge.[65] A "one-size-fits-all" paradigm for children's vaccines violated the ideals of individualism and attention to difference that fueled the feminist health movement, intensive mothering, and in turn, vaccine hesitancy.[66]

Vaccine skeptics commonly opposed "one-size-fits-all" vaccinations, and many found workarounds for aspects of vaccine uniformity by following the advice of influential vaccine hesitant medical doctors, such as Robert W. Sears, known popularly as "Dr. Bob." In 2007, Sears published an "alternative vaccine schedule," which spaced immunizations out over a longer time than did CDC recommendations. Following the alternative schedule entailed that parents ask their doctors to use fewer combination

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[65] Sue Fisher, *In the Patient's Best Interests: Women and the Politics of Medical Decisions* (New Brunswick, NJ: Rutgers University Press, 1986).

[66] Robert S. Mendelsohn, *Malepractice: How Doctors Manipulate Women* (Chicago: Contemporary Books, 1981). For more on vaccine critics' concerns about "one-size-fits-all" vaccination, see Kirkland, *Vaccine Court*, 26; Reich, *Calling the Shots*, 73, 81, 84; Sun, "Anti-Vaxxers Face Backlash," *The Washington Post*, February 25, 2019.

vaccines and to minimize the number of immunizations administered per visit.[67] Sears pitched the schedule to vaccine-hesitant parents who were concerned about vaccine safety but needed to adhere to school attendance laws. For these parents, the safest and most cautious way to vaccinate was to treat each shot as a personal experiment.

Following the Sears alternative vaccination schedule was a laborious undertaking, emblematic of mother warriorhood. Only a mother warrior would be willing and able to sacrifice her time and energies to bring babies to the doctor more often, to endure more needle-induced crying and post-vaccine fussiness, to manage a complex immunization calendar, and to incur the judgments, or even anger, of pediatricians and nurses. Falling off the schedule could also result in being banned from certain pediatric practices that, increasingly, required patients to follow CDC immunization guidelines.[68] Vaccine skeptics viewed this as prejudice against them, arguing that CDC recommendations maximized efficiency, not because it was medically superior or necessary, but because it compensated for inferior parenting and inaccessible healthcare. They used the this perceived prejudice as fuel to prove the establishment wrong.

Public health policymakers do maximize efficiency when they write guidelines to catch as many people as possible in the safety net of protections.[69] Vaccine policies are designed to minimize the number of doctor's visits needed to reach target immunity for

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[67] Robert W. Sears, *The Vaccine Book: Making the Right Decision for Your Child* (New York: Little, Brown, Spark, 2011).
[68] Carey Goldberg, "Five Downsides to Spacing Out Your Child's Vaccines," WBUR News, September 9, 2011; Melody Gutierrez, "Dr. Bob Sears' Views on Vaccines Have Inspired Loyal Followers—and a Crush of Criticism," *Los Angeles Times*, September 3, 2019.
[69] Largent, *Vaccine: The Debate in Modern America*, 22.

the maximum number of vaccine-preventable diseases.[70] Babies are vaccinated against so-called "adult illnesses," such as hepatitis B, because they routinely visit the doctor while many adults do not.[71] Skeptics read coded meanings into these policies, which are reviewed and updated often based on epidemiological data. These coded meanings often advance classist and racist prejudices. Angry with policies that they see as overly aggressive, some mother warriors expressed dismay that the government was punishing *their* children for the misdeeds of *other* parents, ones who do not mother intensively.[72]

The public health policies that vaccine-hesitant parents disliked were, in part, designed to protect poor parents, often people of color, who could not financially afford to mother intensively. They aimed to reach underserved populations lacking access to routine medical care over the life course.[73] Poorer mothers were not necessarily rejecting intensive motherhood, but vaccine skeptics judged them as though they were. In doing so, they drew boundaries within their moral community that reflected and reinforced structural socioeconomic and racial barriers to medical care and choice. In other words, though mother warriors brushed up against the biomedical establishment's prescriptions, they fully collided against the core strategies and principles of public health. One-size-

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[70] Paul A. Offit and Charlotte A. Moser, "The Problem with Dr. Bob's Alternative Vaccine Schedule," *Pediatrics* 123, no. 1 (January 2009); "Multiple Vaccines at Once," Centers for Disease Control and Prevention, last reviewed August 14, 2020, https://www.cdc.gov/vaccinesafety/concerns/multiple-vaccines-immunity.html. Accessed August 17, 2022.

[71] Hepatitis B is a commonly cited example of a mandatory child's vaccine that is primarily used to protect adults. Centers for Disease Control. "Hepatitis B Virus: A Comprehensive Strategy for Eliminating Transmission in the United States through Universal Childhood Vaccination: Recommendations of the Immunization Practices Advisory Committee (ACIP)," *Morbidity and Mortality Weekly Report* 40; RR-13 (1991), 1-19.

[72] Biss, *On Immunity*, 24.

[73] Kirkland argues that vaccines for babies are relatively easy to administer, far easier for healthcare systems than providing continuity of care in underserved areas. Kirkland, *Vaccine Court*, 43; Race-based vaccine policy decisions dated back to the 1950s. Conis, *Vaccine Nation*, 60, 108.

fits-all policies may have hindered individualistic parenting, but they also prompted persecution complexes that scapegoated indirectly condemned the morality of less privileged people.

In the vaccine-hesitant moral universe, pharmaceutical companies were villains. In the second edition of *The Vaccine Book*, published in 2011, Sears was forced to update his alternative vaccine schedule because the pharmaceutical company Merck had stopped manufacturing single measles, mumps, and rubella vaccines, which he had recommended to patients and readers. Taking issue with the company's decision, Sears wrote, "[Stopping because of lack of demand] may be partly true, but I have to wonder if they also wanted to take this choice away from parents and force them into getting the full MMR according to the regular vaccine schedule."[74] Sears personalized Merck's decision and advanced an agenda of doubt in which pharmaceutical companies withheld crucial information that would allow responsible doctors and parents to make informed choices about vaccines. While subtle, the concept of pharmaceutical companies engaging in vaccine conspiracy was accepted in vaccine-hesitant circles through the following decades. Conspiracy theories increased skeptics' feelings of embattlement, often causing hesitation, skepticism, and fear to transform into negative beliefs about vaccines. People who held these beliefs were less concerned about vaccine safety and sacred knowledge about children, and more concerned that their parental rights were threatened. To borrow

[74] Sears, *The Vaccine Book*, 94.

a phrase from sociologist of religion Christian Smith, intensive mothers were "embattled and thriving."[75]

**Soul Toxins**

The persecution that vaccine-hesitant people felt from mainstream media, doctors, and pharmaceutical companies during the height of the Era of Controversy did not diminish their confidence. Rather, it had the opposite effect of increasing their certainty, both intuitively and morally. This "embattled and thriving" mentality fueled renewed public activism in the name of vaccine safety in the wake of MMR-autism theory and the thimerosal debacle. Activists in the late 1990s and early 2000s drew on the principles of "clean living" that were the hallmarks of countercultural environmentalism and the natural health movements of the 1960s. The earlier movements had embraced "back to the land" aesthetics and idealized nature when it was untouched by the hands of industrialized modernity. Environmental scientist Rachel Carson and others sounded warnings about the horrors of the "dangerous chemicals that every human being is now subjected to…from conception until death."[76] Building on this legacy, later activists opposed even more dangerous "toxins," "pollutants," and "chemical preservatives," which could be found in food, cleaning products, personal care products, and medications. As cultural anthropologist Jill Dubisch has argued, health food devotees

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[75] Christian Smith, *American Evangelicalism: Embattled and Thriving* (Chicago: The University of Chicago Press, 1998). Smith referred to evangelical Christians of the 1990s, but the concept of "embattled and thriving" was a more broadly useful characterization of some group dynamics in relation to mainstream culture. We might refer to these are "moral minority" groups.

[76] Rachel Carson, *Silent Spring* (New York: Houghton Mifflin, 1962), 24. Earlier pioneers of these views were Adelle Davis and J.I. Rodale, who each published prolifically.

followed a set of principles and practices that categorized foods either as proper, beneficial, and natural or as improper, destructive, and unnatural.[77] Employing this classification helped mother warriors in their efforts to prevent their children from consuming almost-unavoidable contaminants. Doing so would heal their children, or keep them clean, pure, and good.[78] Living a natural, healthy lifestyle was to live a morally well. It was a sign of good interior character, and some even called it a new religion.[79] The idea that what one took into her body had moral ramifications was perhaps most evident in the dire and confusing directives to pregnant women to avoid eating canned tuna fish because it contained high enough levels of the heavy metal mercury to harm a fetus.[80] What stronger moral imperative could an expectant mother have to "watch what she eats" than to protect her unborn baby?

In the wake of post-World War II industrialization and mass production, chemicals were, as Carson lamented, unavoidable. They had invaded agriculture, farming, food, and consumer product manufacturing, which meant that porous human

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[77] Jill Dubisch, "You Are What You Eat: Religious Aspects of the Health Food Movement" in *The American Dimension: Culture Myths and Social Realities*, 2nd ed. Eds. W. Arens and Susan P. Montague (Sherman Oaks, CA: Alfred Publishing, Co., 1981): 118.

[78] Many scholars have noted that during the early twenty-first century, the term "natural" was imbued with sacred meanings that imputed positive moral qualities. See Warren J. Bellasco, *Appetite for Change: How the Counterculture Took on the Food Industry* (Ithaca, NY: Cornell University Press, 2007), 32; Alan Levinovitz, *Natural* (Cambridge, MA: Beacon Press, 2020); Laura J. Miller, *Building Nature's Market* (Chicago: University of Chicago Press, 2017).

[79] Dubisch, "You Are What You Eat." Other scholars have demonstrated how foodways are understood to convey interior morality. See Lynne Gerber, *Seeking the Straight and Narrow: Weight Loss and Sexual Reorientation in Evangelical America* (Chicago: The University of Chicago Press, 2011); R. Marie Griffith, *Born Again Bodies: Flesh and Spirit in American Christianity* (Berkeley, CA: University of California Press, 2004).

[80] Initial guidance on mercury levels in tuna as health hazards for pregnant women came out in 1999. It has been revisited many times by various groups. Nancy Beth Jackson, "Groups Debate Safety of Canned Tuna for the Very Young," *New York Times*, May 11, 1999.

bodies were vulnerable to invasion, too. Natural living devotees attempted to shield themselves from contaminants by taking personal actions in the places they could—the grocery store and the doctor's office. Many have argued that micro environmental concerns, such as organic eating and vaccine abstention, were selfish and shortsighted in the grander scheme of environmental and health hazards. For example, sociologist Andrew Szasz has argued that environmentalists' shift in focus from the macro-environment of the planet to the micro-environment of the individual body resulted in an "inverted quarantine" in which individuals enjoyed the privileges of affluent consumption even as they neglected the potential communal and long-term benefits of pursuing wider social or environmental reforms.[81] During the early 2000s, vaccine-hesitant people who agitated politically did pursue an agenda of chemical reform, but its driving purpose was a regard for the body as "the environment."

Political activism brought vaccine safety to Congress again. Beginning in August 1999, Republican Congressman Dan Burton of Indiana chaired the first of twenty congressional hearings on vaccine safety, mercury toxicity, and autism held over the course of a decade. Burton had begun to question the safety of vaccines after his grandson was diagnosed with autism. Burton's public hearings legitimized arguments for further governmental oversight of vaccines and amplified a fear of mercury. As Burton

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[81] Andrew Szasz, *Shopping Our Way to Safety: How We Changed from Protecting the Environment to Protecting Ourselves* (Minneapolis, MN: University of Minnesota Press, 2017). Other scholars offer similar critiques of hyper-individualism and "eco-consumerism" or "ecopiety." See Andrew N. Case, *The Organic Profit: Rodale and the Making of Marketplace Environmentalism* (Seattle: University of Washington Press, 2018); Julie Guthman, *Agrarian Dreams: The Paradox of Organic Farming in California* (Berkeley, CA: University of California Press, 2014); Sarah McFarland Taylor, *Ecopiety: Green Media and the Dilemma of Environmental Virtue* (New York: New York University Press, 2019).

noted, "certainly anything that you inject into your body that has mercury is a contaminant."[82] High-profile vaccine skeptics from opposite ends of the political spectrum voiced outrage that the government was condoning the mass poisoning of children. Fundamentalist activist Phyllis Schlafly, best known for her religious opposition to communism, abortion, and the Equal Rights Amendment, asserted that the use of thimerosal in vaccines was evidence of political corruption.[83] Robert F. Kennedy Jr., the liberal environmental lawyer and nephew of the former President Kennedy, published incendiary books and articles that promoted anti-vaccination arguments and drew further attention to child pollution and neurotoxicity. He argued that vaccines were causing both chronic diseases *and* government corruption.[84] The vast cultural, political, and generational differences between Schlafly, Kennedy, and McCarthy were evidence that, in a polarized country, there was at least one issue that could assemble inconceivable allies. All feared contaminating the otherwise pure brains and bodies of babies.

Concerns about bodily purity are often expressed in rhetoric concerning the cleanliness of the soul or spirit. The famed eighteenth-century Protestant preacher John Wesley reminded listeners that "cleanliness is next to godliness." Printed across the header of the nineteenth century newspaper, *The Anti-Vaccinator*, the meaning was plain: vaccines were unclean and ungodly. In the early twentieth century, that axiom manifested in the American public imagination in advertisements for soap and advocacy for urban

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[82] Melissa Attias, "Hearing Gives Burton a Last Shot at Autism Issue," *Roll Call*, November 27, 2012.
[83] Phyllis Schlafly, "Emerging Scandal," The Eagle Forum, July 28, 1999, https://eagleforum.org/column/1999/july99/99-07-28.html. Accessed August 20, 2022.
[84] Robert F. Kennedy, "Deadly Immunity," *Rolling Stone*, July 14, 2005; Robert F. Kennedy, Jr., ed. *Thimerosal: Let the Science Speak* (New York: Skyhorse, 2014).

sanitation reform.[85] Calls for cleanliness were never simple admonitions to cleanse our bodies or scrub our toilets. They were moral directives that built boundaries between what was pure and what was impure. Cleanliness was akin to purity, and in turn, to moral virtue. Dirtiness was akin to impurity and moral badness. Given that purity and impurity are moral categorizations, to cross these boundaries required ritual as well as physical cleansing. Contamination of the body extended to contamination of the spirit, or soul, and activist parents believed that both forms of individual impurity polluted the social realm, too. As the writer Eula Biss noted in her 2014 essay that reckoned with her own maternal vaccine hesitancy, "the natural body meets the body politic in the act of vaccination, where a single needle penetrates both."[86] In other words, one's vaccination decisions invisibly affected society.

In many religious traditions, purity and pollution are viewed symbolically and purification is achieved with ritual practices. Hindus bathe in the Ganges River in India, which is the physical manifestation of a goddess, to rid their souls of spiritual pollution and to show the goddess respect. The river's sacred powers are soul-cleansing, and the ablutions are cleansing, too. In the twenty-first century, bathers partake in this ancient practice even though they know that the Ganges is ecologically polluted and contains feces and other seemingly impure substances.[87] The two understandings coexist—the sacred and the profane are physically the same, yet symbolically opposite. This example

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[85] Kathryn Lofton, *Consuming Religion* (Chicago: The University of Chicago Press, 2017), 93. Lofton argues that early twentieth century advertisements for soap promoted a "cleanliness achieved through a theological hygiene and a consumer training" which both muddled and reinforced a Durkheimian sacred/profane distinction.
[86] Biss, *On Immunity*, 126.
[87] Alistair Scrutton, "Hindus Defy Pollution to Bathe in Ganges Festival," *Reuters*, January 21, 2007.

demonstrates how something can be ritually pure and physically polluted. In understanding vaccine ingredients as pollutants, vaccine skeptics flipped the biomedical script in which vaccines were tools of public health that literally fought off germs.

This mainstream narrative, which included no mention of toxins or pollution, established vaccination as a ritual that upheld the public good. Childhood vaccinations were repeated acts that marked transitions within a young person's life. They were rituals that transformed a child—a vector for disease—into a public health citizen, a person who literally embodied the very tenets of commitment to community.[88] The technologies that bring about this transformation resemble magic. When a child is first brought to a doctor's office or health clinic, she is vulnerable to a multitude of contagious, deadly diseases. With one or two or three injections, she becomes swiftly immune to these diseases. According to the social theorist Mary Douglas, the human body symbolizes the bounded system of society.[89] If this is true—if social structures are reproduced in microcosm on the individual body—we can understand mass vaccination of individual bodies as a morally beneficent ritual protection against invasive forces that threaten to disrupt the social body.

However, the ritual of mass vaccination, even if it protects the social body, nonetheless threatens to pollute the individual bodies by disrupting their natural rhythms and biological processes. That said, if Douglas's idea is inverted and "the environment"

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[88] This metaphor for ritual is based on Victor Turner's "ritual process." Turner, *The Ritual Process: Structure and Anti-Structure* (New York: Aldine de Gruyter, 1995).
[89] Mary Douglas, *Purity and Danger*, 142. Focusing on the act of injection, Biss argues that vaccination is a violent act representative of social violence. Biss, *On Immunity*, 12.

is not the external ecosystem but rather the interior of an individual body, then pollution, the violence of forced penetration, and immorality becomes indistinguishable from the injected person. This was the view of vaccine skeptics, and in a culture that prized individualism, the idea of passively allowing a sacred child to become polluted was immoral. Purity was to be toxin-free and morally resolute. This state of purity or pollution was shared between mother and child, affecting the character of the mother and the body and soul of the child.

From this perspective, vaccines were the antithesis of pure or natural. Vaccine skeptics described the ingredients in adjuvants as invasive contaminants that overwhelmed children's bodies and corrupted their normal functions. They were to blame for developmental disorders, such as autism, as well as allergies and autoimmune diseases. In some MMR-autism narratives, parents and alternative autism specialists even argued that children lost their souls after being vaccinated. In a letter that McCarthy published in *Mother Warriors*, Melanie Glock described the decline of her daughter, Maisie, after she received her third MMR shot. "Three shots, all containing mercury...The Maisie from her baby book vanished. There was still a child who required feeding, washing, and minding, but there was no soul in that child. She was invisible."[90] In the preface to *Louder Than Words,* the alternative autism doctor, Jerry Kartzinel, wrote, "Autism, as I see it, steals the soul from a child; then, if allowed, relentlessly sucks life's marrow out of the family members, one by one."[91] In these understandings, bodies were

[90] McCarthy, *Mother Warriors*, 80.
[91] McCarthy, *Louder Than Words*, xvi.

both clearly distinct from, and indelibly connected to, souls. Mercury and the MMR were imbued with the same powers that the vampires of nineteenth century anti-vaccination lore possessed—they stole souls and left wounded, impure bodies behind.

Alternative health providers and authors responded to toxicity concerns by creating detoxification protocols for children who had been vaccinated. In the 2010s, "detoxing" for adults became a common wellness trend, borrowing the same logic that a "high toxic load" was contaminating the body's natural cleanliness or internal purity. Detoxing, or cleansing, improved bodily functions, encouraged mental clarity, hastened weight loss, and elevated mood.[92] For vaccine-hesitant parents, detoxing was a ritual to restore a child's body back to its pure, baby-like state. Natural health writers instructed parents to use combinations of botanical ingredients, such as essential oils, herbal supplements, charcoal, or bentonite clay, to create "detox baths" or "detox remedies," which would help the body excrete toxins and mitigate the harmful effects of vaccines.[93] These protocols gave mothers the ability to "right the wrong" of a vaccination.

Essayist Eula Biss has lamented that, once shared, parental fears were practically contagious. "If another parent says they're afraid of something, you almost can't answer that," she noted, referring to contemporary parenting culture as "fear-promoting" and "fear-encouraging."[94] Learning that her peers had concerns about vaccine toxins gave the argument to abstain from vaccinating a mask of legitimacy that was almost impossible to

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[92] For example, Gwyneth Paltrow, "The Power of Detoxification and How to Get Clean," Goop, Accessed August 20, 2022, https://goop.com/wellness/detox/clean/.
[93] Megan Redshaw, "A Gentle Detox for Children," Living Whole Blog, July 23, 2019.
[94] Amanda Paulson, "Vaccination Expert: Culture of Fear in Parenting Oppressive," *Christian Science Monitor*, February 6, 2015.

remove. As a result, just a shred of doubt about one's convictions could be enough to skip vaccinating. Biss, who opted to vaccinate her son, concluded that parents were "in a weird unproductive place around our own fear."[95]

Fear is only unproductive if it prevents people from taking the "right" action. For vaccine skeptics, however, fear could be very productive. It often informed their decisions to act by not acting, by having a child skip the MMR shots, for instance. Parents who experienced fear over vaccination often expressed a desire to "leave well enough alone" by keeping their children unvaccinated (or under-vaccinated). For mother warriors, fear was the protective emotional, moral, and spiritual response to information that compelled them to tap into their own sacred instincts. In the sacred realm of the home, vaccine hesitant mothers were sacred actors performing sacred duties to ensure their children remained innocent and pure. As members of a moral community, vaccine skeptics perceived high boundaries between the sacred and profane, and they were determined to stay on the side of the sacred. Doing so protected them from guilt associated with choosing to vaccinate and it garnered the approval of others with whom they shared values.

During the MMR vaccine debates of the 1990s and early 2000s, vaccine skepticism was "maternalized." In vaccine debates, mothers emerged as key medical, moral, and religious actors. Activism against the MMR vaccine was driven by mothers who understood their children's bodies as pure yet vulnerable. Although the media derided these activists for fearmongering and perpetuating "junk science," their actions

[95] Paulson, "Vaccination Expert."

were moral and religious acts that reinforced understandings of the mother as sacred and the child as pure.[96] They helped to uphold the sacred order of the healthy family.

[96] Julia Belluz, "Oprah's Long History With Junk Science," *Vox*, January 9, 2018.

# CHAPTER FIVE

## Gardasil, Girlhood, and Moralizing Children's Bodies

"I'd like to help you, but I can't…There's absolutely no way I can sign off on any mandatory vaccine — and especially one associated with STDs," wrote Fran Eaton, a prominent conservative writer and parents' rights advocate, in a February 2007 post on the *Illinois Review* blog.[1] Recounting a pressured phone conversation with the CEO of the Republican National Committee, Eaton took to the blog to explain her refusal to endorse state mandates for Gardasil, a new vaccine branded as a cervical cancer preventative. Eaton was serving on the Illinois Immunization Advisory Committee, and her decision meant breaking ranks with her party and disappointing a major national power player, which she did not take lightly. She concluded her post—the first of many writings about Gardasil mandates—by excoriating what she perceived to be a corrupt cycle of promotion and profits shared between legislators, the media, and pharmaceutical companies. "If this pattern [of mandating new vaccines] is not stopped with this vaccine, it won't ever happen. The slope will have become too steep and slippery. There will be no place to stop, and we will have no choice but to force medication on our children and ourselves at the whim of any and all drug companies."[2]

Gardasil, a vaccine originally targeting four strains of human papillomavirus (HPV) manufactured by Merck & Co., debuted on the United States market in 2006. The first vaccine to be marketed directly to consumers, Gardasil reignited classic culture war

[1] Fran Eaton, "A Vaccine-Induced Nightmare," *Illinois Review Blo*g, February 7, 2007.
[2] Eaton, "A Vaccine-Induced Nightmare," 2007.

debates over sexual mores, family values, and the role of government in medical decision making. The HPV vaccine was politicized in ways that prior vaccines had never been before—along traditional political Left-Right divides stemming from differing beliefs about the roles of religion and government in American life.[3] Many conservative Christian writers and groups challenged proposed Gardasil mandates for school-aged children. They argued that forcing—or even recommending—a vaccine to prevent HPV, a sexually transmitted infection (STI), was immoral because it tacitly affirmed premarital sex and undermined religious teachings and divinely-appointed parental authority. Supporters of Gardasil argued that the vaccine was medically progressive, even feminist, because it destigmatized women's sexuality and reproductive health.[4]

Gardasil also evoked broad concerns about the role of pharmaceutical companies, known pejoratively as "Big Pharma," in Americans' lives at many levels. These qualms were directed at Merck for advertising directly to adolescent girls, at the FDA for quickly approving Gardasil, at lobbyists and legislators in red and blue states for rushing to mandate HPV vaccination for sixth-grade girls, and at doctors and public health officials for recommending an expensive medical intervention when there were clear issues of

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[3] *The Greater Good*, Documentary, 2011, https://greatergoodmovie.org. In the film, Barbara Loe Fisher lamented the increased politicization of vaccines in the 2010s in comparison to when she started her vaccine safety activism in the 1980s.

[4] S.D. Gottlieb, *Not Quite a Cancer Vaccine* (New Brunswick, NJ: Rutgers University Press, 2018), 49-53. Gottlieb discusses how cervical cancer support groups celebrated Gardasil because it was destigmatizing for women's health *because* it distanced cervical cancer from sexual behaviors and sexually transmitted infections. Ironically, these same groups perpetuated stigmatization of sexually transmitted infections through their actions. Other scholars have contested this classification of the HPV vaccine as feminist. See Monica J. Casper and Laura M. Carpenter, "Sex, Drugs, and Politics: The HPV Vaccine for Cervical Cancer," *Sociology of Health & Illness* 30, no. 6 (2008): 886-899; Ellen M. Daley et al. "The Feminization of HPV: How Science, Politics, Economics and Gender Norms Shaped U.S. HPV Implementation," *Papillomavirus Research* 3 (2017): 142-148; Marie Thompson, "Who's Guarding What? A Poststructural Feminist Analysis of Gardasil Discourse," *Health Communications* 25 (2010): 119-130.

inequity in access and public health necessity.[5] Each of these issues was knotted together into a long thread of fears about loss of bodily autonomy, on the one hand, and uncertainty about who to trust about healthcare, on the other. In short, many conservative Christian parents felt Merck had executed an end-around of their right to control their children's sex education and sexuality.

At the center of all of these debates were 11-12-year-old girls, the original target population for HPV vaccination. The public health implications and sexual ethics of this vaccine became enmeshed with longstanding cultural conceptions of girlhood as inherently dangerous and morally thorny. When Gardasil entered the market, many asked if the vaccine was part of the problem or part of the solution to girlhood's moral precarity. Evangelicals and conservative Catholics had not been drivers of past vaccine hesitancy movements. Although some had historically worried about the ethics of using vaccines created using aborted fetal cell lines, Catholics had been repeatedly told by the Catholic Church to vaccinate, and all but the most conservative Protestants saw vaccination as a greater good. People who received vaccines were not complicit in the original abortion.

Consequently, when they engaged with the HPV vaccine in overtly religious ways in the early 2000s, conservative Christians had a politicizing effect on vaccine conversations nationally, creating new alliances and foes. Previously, most vaccine skeptics had employed subtly religious ideas and practices concerning purity, morality,

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[5] Sigrid Fry-Revere, "The Rush to Vaccinate," *New York Times*, March 25, 2007; Keith Wailoo et al., *Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine's Simple Solutions* (Baltimore, MD: The Johns Hopkins University Press, 2010), xxix.

and sacrifice in their activism and decisions. However, during the presidency of George W. Bush and the resurrection of "family values" social policies that offended liberals, such as opposition to abortion, gay rights, and the implementation of faith-based initiatives, the role of religion in politics was polarizing. As a result, when conservatives appealed to Christian morality, vaccine skeptics who identified as liberals or feminists, were forced into a more accepting stance on Gardasil than they might otherwise have been.[6]

HPV vaccines evoked fear and disgust in conservative Christians first and foremost because they, like the hepatitis B vaccine, inoculated children against a set of diseases caused by so-called risky "adult" behaviors—sex and injection drug use, respectively.[7] Evangelical Christians and conservative Catholics asked: Why should *my* child be inoculated against diseases that are caused by *immoral behaviors*? In asking this question, these groups projected innocence, embodied as both physical and spiritual cleanliness, on their children's bodies. This projection juxtaposed them with the implicitly immoral, impure, and unclean bodies of wayward adults. These adult bodies were coded as liberal and secular, as well as promiscuous, queer, poor, non-white, or derelict. The "adult" disease argument emphasized a crucial difference between a vaccine that prevented against a physical-contact-based virus, such as HPV, and the traditional

[6] For example, liberal Jewish parents in New York City were hesitant, but not publicly. Marjorie Ingall, "Why Are So Many Jewish Parents Opting Not to Vaccinate Their Kids for HPV?" *Tablet Magazine*, July 5, 2013.
[7] Barbara Loe Fisher, "Hepatitis B Vaccine: The Untold Story," The Vaccine Report, National Vaccine Information Network (September 1998).

vaccines that protected against airborne viruses, such as measles.[8] This distinction was most plain in the context of state mandates requiring, or recommending, certain vaccines for school attendance. As Catholic activist Debi Vinnedge argued in 2007, "The purpose of vaccinations in children at school was to prevent the spread of communicable disease. There's nothing wrong with doing that sort of thing…But [HPV] is not a disease that is spread any other way than direct sexual intercourse."[9]

Conservatives were infuriated by state mandates because they implied that all girls carried the same risk of contracting HPV or eventually getting cervical cancer. Their arguments about sex, morality, and purity were often implicitly racialized. A *National Catholic Register* article differentiated between HPV infection rates and cervical cancer incidence and asked, "Why is Merck trying to vaccinate *American* girls when they face the least risk of any nationality? Lack of screening is the most important risk factor associated with cervical cancer."[10] Here, the emphasis on "American" drew national, and even racial, lines around who should be receiving an HPV vaccine. Similarly, the *Illinois Review* put a sharper point on this racialization, charging that, "Either there really is collusion between lawmakers and Merck/Glaxo, or lawmakers are subjecting all our girls to political correctness, unwilling to mandate vaccines solely for those truly at risk: poor, minority, and rural children."[11] In both instances, a multi-pronged specter was raised: Big Pharma was calling the shots on medical care for children, legislators could not be

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[8] R. Alta Charo, "Politics, Parents, and Prophylaxis: Mandating HPV Vaccination in the United States," *The New England Journal of Medicine* 356, no. 10 (May 10, 2007): 1905-1908.
[9] Vinnedge quoted in "HPV Mandates Face Federal Money Ban," *World News Daily*, February 17, 2007. Note: HPV is spread through sexual skin-to-skin contact, not exclusively through sexual intercourse.
[10] Susan E. Wills, "HPV Vaccine," *National Catholic Reporter*, March 13, 2007.
[11] "Mandated HPV Vaccines: Why IL? Why Every Girl?," *Illinois Review Blog*.

trusted, and white girls were being inappropriately sexualized in order to prevent a cancer that would not affect them.

Debates about the social effects of HPV vaccines simmered down over the course of a decade, and concern shifted from the explicitly religious and sexually charged to more familiar vaccine-skeptical concerns about safety, personal risk, and the morality of sacrifice and victimhood. However, while mothers were the primary witness to vaccine injury in babies and young children when it came to DPT and MMR shots, adolescent girls and young women took up the mantle of witnessing about vaccine injury and the chronic side effects that they attributed to their own shots. These girls—their voices, faces, stories, social media posts, and memorials—created a gendered and embodied form of medical martyrdom that resonated with vaccine skeptics who feared that they, or a loved one, would be sacrificed for the cause of public health.[12] The moral baggage of girlhood again fostered HPV vaccine skepticism. Skeptics employed the tropes of Christian martyrdom to argue that Gardasil was not a shot worth taking.

**A Brief History of the HPV Vaccines**

Human papillomavirus (HPV) is a set of roughly one hundred strains of common viruses that infect the reproductive tract and organs, as well as the mouth and throat. They are transmitted through sexual contact. Most sexually active women and men are infected with an HPV at least once in their lives, and most of these infections clear,

[12] Barbara Loe Fisher in *The Greater Good* documentary: "How many are being sacrificed for the greater good? How many?" (2011).

without knowledge of infection or medical intervention, within one month and two years. Some strains of HPV create infections that do not self-clear, and if they go undetected, they can cause pre-cancerous cellular lesions that develop into cancers of the cervix, vagina, anus, penis, and throat. These lesions develop over a fifteen- or twenty-year period if not removed.[13] Cervical cancer is the most common of these cancers, affecting over 500,000 women globally per year, the majority of whom live in developing countries. Roughly 4,000 American women die of cervical cancer annually, generally because they have not received standard cervical screenings known as Pap tests.[14] Other strains of HPV cause highly infectious genital warts that flare and remit periodically. Unlike some STIs which can be prevented from spreading by using condoms or other barrier methods, transmission of HPV occurs far more easily and does not require intercourse to spread from an infected person to an uninfected person.

In 2005, Merck developed a vaccine to ward against four strains of HPV: two that cause roughly 70% of all cervical cancers, and two that cause genital warts.[15] Taking a relatively new marketing tack, Merck treated Gardasil similarly to other expensive pharmaceuticals by advertising it directly to their intended consumers: adolescent girls (and sometimes their mothers).[16] That year, the company launched an informational

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[13] German virologist Harald zur Hausen first hypothesized that HPV was a cause of cervical cancer in 1976. This was proven correct over the next few years. "Cervical Cancer," World Health Organization, last modified February 22, 2022, https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-and-cervical-cancer.

[14] Tara Haelle, "The Great Success and Enduring Dilemma of Cervical Cancer Screening," *NPR*, April 30, 2015.

[15] "Human Papillomavirus Vaccines," National Cancer Institute, last modified May 25, 2021, https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-vaccine-fact-sheet.

[16] C. Lee Ventola, "Direct-to-Consumer Pharmaceutical Advertising," *Pharmacy & Therapeutics* 36, no. 10 (October 2011): 669-684.

marketing campaign called "Make the Connection" to educate girls about the "connection" between HPV and cervical cancer.[17] Within a year, Merck launched the Gardasil vaccine with a splashy direct-to-consumer advertising campaign that spotlighted active, diverse adolescent girls telling viewers that they wanted to be "one less" cervical cancer victim.

The takeaway was that girls, ages eleven and twelve, not only *should* be vaccinated with Gardasil to avoid dying of cervical cancer, but also that they *wanted* to be vaccinated. In early 2007, the trade publication *Pharmaceutical Executive* named Gardasil its first Annual Brand of the Year, proclaiming that Gardasil "turned a medical success story into a campaign of empowerment for a generation of girls and young women…[It] broke the mold, creating a host of logistical and policy challenges that it had to go about solving before women showed up in their doctors' waiting rooms. It made a market out of thin air…"[18] The hype surrounding Gardasil's campaigns extended beyond the pharmaceutical industry, as coverage of a cervical cancer vaccine for girls made national headlines. Scholars in disciplines ranging from sociology to public health to communications dissected Gardasil as a "gendered biomedical technology" and questioned the extent to which cervical cancer was "constructed as a visible, tangible, and yet solvable problem for women."[19] Feminist scholars were concerned that because Gardasil's marketing was gendered feminine, ads implied that HPV, and the risk of

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[17] "Brand of the Year," *Pharmaceutical Executive*, February 1, 2007. Adolescent girls who saw ads were directed to a website to order free bracelet kits with which to string together beads representing HPV and cervical cancer.
[18] *Pharmaceutical Executive*, "Brand of the Year."
[19] Lundy Braun and Ling Phoun, "HPV Vaccination Campaigns: Unmasking Uncertainty, Erasing Complexity," in *Three Shots at Prevention*, 41.

cervical cancer, were a woman's burden.[20] Scholars also noted that the messaging used to sell Gardasil obscured the fact that HPV is a sexually transmitted infection by overplaying the risks of cervical cancer for American girls.[21]

Public health officials and policymakers quickly implemented Gardasil into vaccine policy and medical care guidelines. The Advisory Committee on Immunization Policy (ACIP) of the CDC added Gardasil to its list of recommended childhood vaccines in June 2006, the same month it became available to the public. And, within its first year on the market, forty-one state legislatures considered bills to recommend or mandate Gardasil for girls entering sixth grade.[22] Only two states, Rhode Island and Virginia, passed a mandate, though. The speed with which legislators decided that Gardasil was "the right tool for cervical cancer prevention" alarmed a range of parties, ranging from conservative Christians and parents' rights activists to public health advocates.[23] Some critics homed in on Merck's state-based lobbying efforts via the political organization Women in Government Foundation, Inc., which used a standardized "HPV and Cervical Cancer Legislative Toolkit" to help educate legislators about Gardasil and promote

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[20] Thompson, "Who's Guarding What?", 127.
[21] Aronowitz, *Risky Medicine*, 100; Melissa Haussman, *Reproductive Rights and the State* (Westport, CT: Praeger, 2013), 139-140; Sheila M. Rothman and David J. Rothman, "Marketing HPV Vaccine: Implications for Adolescent Health and Medical Professionalism," *Journal of the American Medical Association* 302, no.7 (2009): 781-786.
[22] Michelle M. Mello et al. "Pharmaceutical Companies' Role in State Vaccination Policymaking: The Case of Human Papillomavirus Vaccination," *American Journal of Public Health* 102, no. 5 (May 2021): 893-898.
[23] Lawrence O. Gostin and Catherine D. DeAngelis, "Mandatory HPV Vaccination: Public Health vs. Private Wealth," *Journal of the American Medical Association* 297, no. 17 (May 2, 2007); Gottlieb *Not Quite a Cancer Vaccine*, 65; Stephanie Saul and Andrew Pollock, "Furor on Rush to Require Cervical Cancer Vaccine," *New York Times*, February 17, 2007; Jennifer A. Reich, "Parenting and Prevention: Views of HPV Vaccines Among Parents Challenging Childhood Immunization," in *Three Shots at Prevention*, 172-3.

mandated HPV vaccination.[24] After a year of public backlash to this method, Merck stopped lobbying legislators to promote Gardasil.[25]

Other critics were put off by Gardasil's $360-per-immunization price, which was only covered by a few insurance providers and was not yet covered by Medicaid. The cost of Gardasil brought into relief the inequities of medical care in the United States—and globally— particularly the actual risk of dying from cervical cancer. Skeptics rightly pointed out that upper-and middle-class white girls were the population who could afford Gardasil, yet they were also the same population who received regular gynecological care and annual Pap tests to detect cervical changes and medical interventions to remove precancerous lesions as they occurred. As a result, they grew into adult women who very rarely died from cervical cancer.[26]

Comparatively, minority communities in poor areas had higher rates of cervical cancer, owing to fewer preventative screenings.[27] Many public and global health advocates noted that the rates of cervical cancer in the United States were minuscule compared to those in developing countries, particularly in sub-Saharan Africa and India.[28] These comparisons led critics of all persuasions to view Merck with suspicion, and often derision, as they rightly noted that Gardasil was designed, at least in its debut,

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[24] Mello et al., "Pharmaceutical Companies' Role," 895; Gottlieb, *Not Quite a Cancer Vaccine*, 65.
[25] Andrew Pollock and Stephanie Saul, "Merck to Halt Lobbying for Vaccine for Girls," *New York Times*, February 21, 2007.
[26] Wailoo, *Three Shots at Prevention*, xiii.
[27] Patricia Jeudin et al. "Race, Ethnicity, and Income as Factors for HPV Vaccine Acceptance and Use," *Human Vaccines and Immunotherapeutics* 9, no. 7 (July 2013): 1413-1420.
[28] Monica and Raman Mishra, "An Epidemiological Study of Cervical and Breast Screening in India: District-Level Analysis," *BMC Women's Health* 20, no. 225 (2020); Marc Arbyn, et al. "Estimates of Incidence and Mortality of Cervical Cancer in 2018: A Worldwide Analysis," *The Lancet*, vol. 8, no. 2 (February 1, 2020).

to be a luxury medical product. Sociologist of medicine S.D. Gottlieb referred to this dynamic as "constructing an epidemic without demand."[29] And, some public health scholars argued that Gardasil's economic inaccessibility forced the vaccine into the realm of individual rather than population health, which differed from the spirit of most vaccines on the market to date and widened racial, socioeconomic, and health disparities.[30]

In 2011, ACIP recommended that all boys entering sixth grade also be vaccinated, both in the hopes of achieving herd immunity against the most dangerous strains of HPV and to preventing incidences of penile, anal, and oral cancers in men—primarily members of the male population who have sex with men.[31] Gardasil uptake was low, and national reporters questioned why parents would deny their children a cancer-preventing vaccine.[32] Six years after HPV vaccines were brought to market, President Barack Obama's annual "President's Cancer Panel" investigated the reasons for low HPV vaccination rates. In the Panel's final report, scientists, physicians, and public health officials concluded that discussion around the vaccines was too focused on the root cause

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[29] Gottlieb, *Not Quite a Cancer Vaccine*, 14. A second HPV vaccine, Cervarix, manufactured by GlaxoSmithKline, was approved in the United States but discontinued in 2017 due to lack of market share. It is sold internationally.
[30] Aronowitz, *Risky Medicine*, 103; Laura Mamo et al., "Producing Risky Girlhoods," *Three Shots at Prevention*, 140.
[31] Gardiner Harris, "HPV Vaccine Use in Boys is Debated," *New York Times*, October 28, 2010; Gardiner Harris, "Panel Recommends HPV Vaccine for Boys and Young Men," *New York Times*, October 25, 2011.
[32] Mia Armstrong, "We Have the Resources to Prevent Cervical Cancer. Do We Have the Will?" *New York Times*, (June 10, 2019); Jane E. Brody, "The Underused HPV Vaccine," *New York Times*, August 22, 2019; KJ Dell'Antonia, "Will Parents Still Turn Down an 'Anti-Cancer Vaccine'?" *New York Times*, June 19, 2013; Laurie McGinley, "Cancer Doctors Leading Campaign to Boost Use of HPV Vaccine," *The Washington Post*, June 19, 2016; Paul A. Offit, "Let's Not Talk About Sex," *New York Times*, August 19, 2014; Sabrina Tavernise, "HPV Vaccine Not Reaching Enough Girls, C.D.C. Says," *New York Times*, July 25, 2013.

of HPV as an STI, and studies had shown that just as parents were leery, pediatricians were, too. Pediatricians reported that discussing sex or an STI vaccine with young adolescents and their parents was difficult, so HPV vaccination was given short shrift during well visits.[33] To increase uptake, the panel concluded that, "HPV vaccines should be framed as vaccines that prevent cancers."[34] Physicians debated: Should they obscure the fact that HPV was transmitted through sex to boost vaccination rates?

Prominent doctor and vaccine advocate Paul Offit of Children's Hospital of Philadelphia advocated not discussing sex at all with patients or parents when considering Gardasil vaccination.[35] Responding to Offit's op-ed in the *New York Times*, pediatricians sent letters to the editor supporting his approach. A physician in Philadelphia, wrote, "Dr. Offit has it right that recommending the HPV vaccine…is about cancer, not sex," noting that in her office, when parents found out that sexual contact was involved in acquiring HPV, they shied away from immunization.[36] Writing from a rural medical practice in Pinon, Arizona, located on the Navajo Nation, another physician claimed to have closed the gap in vaccination rates between girls and boys by "changing how we sell HPV vaccination to our patients…[Simply] it is one of three vaccines recommended at 11 years of age."[37] Philosopher Christopher Kaczor agreed, albeit on slightly different terms. In a post on a Catholic blog, Kaczor argued for HPV immunization of all children,

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[33] Melissa B. Gilkey et al. "Physician Communication About Adolescent Vaccination: How is Human Papillomavirus Different?" *Preventive Medicine* 77 (2015): 181-185.
[34] "Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer," The President's Cancer Panel, 2012-2013 Report, 9.
[35] Offit, "Let's Not Talk About Sex," (August 19, 2014).
[36] Barbara Gold, "Letter to the Editor," *New York Times*, August 21, 2014.
[37] Andrew Terranella, "Letter to the Editor," *New York Times*, August 21, 2014.

provided that the origin of the disease was omitted from discussions with young patients. "The children are physically better protected, but at the same time, no mixed message is sent. Both physical health and moral health are preserved," he wrote.[38] Those who adopted this paternalistic approach to medical care, in some forms purportedly secular and others avowedly religious, claimed that vaccination against HPV was best for the patient and the general population. It was more ethical to vaccinate, even without sharing the full truth, than it was to tell the truth and risk vaccine refusal because of it.

Others disagreed, including prominent Christian pediatrician and parenting expert Meg Meeker, who wrote to parents:

> As a pediatrician and mother, I don't believe it's ethical to give a vaccine to a child without telling him or her what it is for, when they can control whether or not they get HPV with their behavior. If a 13-year-old gets the vaccine, he or she needs to know how dangerous and serious sex is and how he/she can avoid being sexually active. We give shots, but who teaches kids how NOT to have sex? That should be our number one priority."[39]

In numerous blog posts, Meeker noted that she routinely vaccinated children against HPV—but she only did so if she had ample time to discuss the hazards of sex with her patients and to evaluate whether she thought they would be apt to have premarital sex. In this sense, Meeker assumed the same paternalism that she found unethical about the "let's not talk about sex" strategy. Meeker's approach presumed both that she could change children's behaviors through coaching and that she could predict which children were

[38] Christopher Kaczor, "Christian Parents and the HPV Vaccine," *First Things Blog*, June 2, 2011.
[39] Meg Meeker, "What Are Your Thoughts on the HPV Vaccine?" *Meeker Parenting Blog*, February 24, 2016.

most likely to disobey her advice and would need the shots to "protect them from themselves."[40]

This ideological gap, even at the physician level, fostered ambivalence about Gardasil. Politics, class, and religious affiliation affected how people felt about HPV vaccination more than they had about prior vaccines. In many ways, the President's Cancer Panel's research inference was correct: sex *was* at the root of difficulties with vaccine uptake in the first five years after Gardasil hit the market. Sex was not just uncomfortable to discuss, however. For many conservative Christian stakeholders, mandatory vaccination against an STI was morally abhorrent and exemplified an American culture in crisis. It disrupted understandings of physical and spiritual purity that were religiously and culturally engrained for a large portion of the population.

**Virgins Don't Get Viruses: Promiscuity Vaccines and Parental Rights**

In February 2007, Texas Governor Rick Perry, a Republican, signed an executive order requiring Gardasil vaccination for girls entering sixth grade, to begin the following school year. Texas was the first state to make such a mandate, and three months later, the State Legislature struck it down. The order had included an opt-out clause for parents "for reasons of conscience, including religious beliefs," but children would be included in the vaccination program by default.[41] In response to the mandate, Cathie Adams, the head

[40] Meg Meeker, "HPV Vaccine & Teens," *Meeker Parenting Blog*, November 4, 2011.
[41] Ralph Blumenthal, "Texas Is First to Require Cancer Shots for Schoolgirls," *New York Times*, February 3, 2007; Ralph Blumenthal, "Texas Legislators Block Shots for Girls Against Cancer Virus," *New York Times*, April 26, 2007.

of the conservative organization Texas Eagle Forum, explained her group's opposition to the mandate. "We're very unhappy because [HPV infection] is not a crisis, because parental rights are being usurped and we believe young girls are being experimented upon. Would they be more promiscuous? Chances are very good that they would be."[42] In response to the backlash and the legislative hand-slap, Perry defended his position to mandate Gardasil as "pro-life."[43]

Texans who would have typically identified as "pro-life" when it came to abortion debates did not accept Perry's extension into the category of vaccines. Instead, their reactions, as well as those from resisters to similar mandates across the country, replayed debates about abstinence-only sex education in schools that had been waxing and waning since the 1960s. As Adams had wondered, would vaccinating against an STI give girls a greenlight to have sex earlier or more often? Even the possibility that this was true violated common evangelical Christian and conservative Catholic mores that focused on girls retaining their virginity, their purity. For parents, the prospect of mandatory HPV vaccines represented, first, a devaluation of virginity as the ideal state of adolescent girlhood and second, a desecration of their parental responsibility to guard it. One responsibility of this guardianship was controlling how and when young people learned about sex. Getting the HPV vaccine was not just a medical decision because Gardasil was not *just* a vaccine. It was an educational, moral, and theological technology all at once.

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[42] Cathie Adams quoted in Dan Quinn, "Study Debunks Religious-Right Claim That HPV Vaccine Will Lead to Teen Promiscuity," *Religious Right Watch Blog*, October 15, 2012.
[43] Ross Ramsey, "Need to Hide Something Big?" *Texas Weekly*, February 12, 2007. Perry used this pro-life defense again during his presidential campaign at the Republican National Committee Debate on September 22, 2011.

Early contestations over Gardasil furthered longstanding debates about the role of government in teaching and perpetuating Christian morality. The cultural and sexual revolutions of the 1960s and 1970s, along with the women's and gay rights movements, all challenged the gendered hallmarks of conservative Christian morality: traditional gender roles and their deployment in nuclear families in which sex was to occur in marriage only.[44] On the subject of sex education for school-aged children, conservative Christians fought, and often won, a multi-decade battle to teach abstinence as the only morally and medically acceptable form of pregnancy and disease prevention. They made tremendous gains in local school districts between the 1970s and the early 2000s, culminating in unprecedented federal support from the Bush administration between 2000-2008.

When Gardasil came on the market, conservative Christians quickly made the connection that Merck and the government did *not* want the public to make—that the cervical cancer being prevented was caused by and STI most common in young women. Given that Gardasil advertisements were ubiquitous and targeted to young girls, schools and religious organizations adopted the vaccine into their sex education curricula. Many programs in liberal states used the new vaccine as an opening to discuss the frequency of HPV infection more easily and to promote vaccination as a medical intervention against it. However, in some conservative Christian environments, Gardasil was used to reinforce existing lessons about the dangers of sex. Sex could result in STIs, which could even

[44] Seth Dowland, *Family Values and the Rise of the Christian Right* (Philadelphia, University of Pennsylvania Press, 2015).

cause cancer. Terrible outcomes were avoidable with abstinence. In these environments, discourses against Gardasil were medical, but they were also social and theological. They were also political, as many federally funded faith-based organizations taught abstinence-only curricula to school children.

Evangelical organizations such as Concerned Women for America and Focus on the Family produced colorful pamphlets instructing parents and doctors about how to speak to young people about Gardasil. The vaccine provided parents and doctors a good opportunity, they said, to teach teenagers that all forms of sex were dangerous because HPV could be transmitted even without intercourse.[45] Focus on the Family's "HPV Vaccine: What Parents Need to Know," authored by the organization's staff nurse practitioner, entreated parents:

> We must do all we can to help [our children] understand that 'all sex is sex' and capable of transmitting STIs…The HPV vaccine does not, in any circumstance, negate or substitute God's plan for sexuality, which is sexual abstinence until marriage and marriage faithfulness within marriage.[46]

Focus on the Family's statement on Gardasil advanced moral and theological arguments that categorized the HPV vaccine, STIs, and extramarital sex as morally impure and ungodly. The vaccine was an opportunity to make theological statements about purity and sex, namely that the only pure and divinely sanctioned sex was monogamous marital sex. In the implied moral hierarchy, the HPV vaccine was grouped with impure and immoral things, subjugated far below abstinence, virginal purity, and cleanliness of all kinds.

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[45] Brenda Zurita, "Sexually Transmitted Diseases: The Cost of Free Love," Concerned Women for America (2011).
[46] Linda Klepacki, "HPV Vaccine: What Parents Need to Know," Focus on the Family (November 21, 2019).

Meeker was clear with her patients: act well, and you can avoid the shot. Act poorly, and you will need the shot. In her equation, receiving the shot was equivalent to moral failure—an inevitability for some.

When legislators and politicians pushed for HPV vaccination mandates at the state level, opponents of the vaccine often attacked specific lawmakers publicly on moral grounds. Perry was taken to task by Christian conservatives in the immediate aftermath of his executive order in 2007 for having close ties to former Merck employees.[47] Then in 2011 when Perry was campaigning for the Republican presidential nomination, Rep. Michele Bachmann, a Tea Party conservative from Minnesota and fellow presidential candidate, accused Perry of "giving parental rights to a big drug company" at a Republican Presidential Debate. Taking a swipe at a frontrunner, Bachmann told the audience that Perry "[mandated that] girls should have a shot for sexually transmitted disease."[48] Caught off guard, Perry defended his decision at the debate but renounced it the following day.[49] The HPV vaccine was back in the national news, and fifty-seven percent of Republican primary voters supported Bachmann's position against a mandate.[50] Republican Governor Nikki Haley of South Carolina also retracted support of HPV vaccination and legislation.[51] Taking the temperature of the public debate,

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[47] Ramsey, "Need to Hide Something Big?" (February 12, 2007).
[48] Republican Candidates Debate in Tampa, Florida (September 12, 2011), https://www.presidency.ucsb.edu/documents/republican-candidates-debate-tampa-florida-0, Accessed August 27, 2022.
[49] Dan Eggen, "Rick Perry Reverses Himself, Calls HPV Vaccine Mandate a 'Mistake,'" *The Washington Post*, September 13, 2011; Trip Gabriel and Denise Grady, "In Republican Race, a Heated Battle Over the HPV Vaccine," *New York Times*, September 13, 2011.
[50] Matthew Cooper, "Poll: Public Supports Bachmann's Position on HPV Vaccine," *The Atlantic*, October 5, 2011.
[51] Chris Gentilviso, "Nikki Haley HPV Bill Veto," *HuffPost*, June 20, 2012; Dan Quinn, "South Carolina Governor Vetoes HPV Bill," *Texas Freedom Network Blog*, June 20, 2012.

Republican candidates felt the rising politicization of vaccines. Gardasil had opened a door for political conservatives to favor vaccine-hesitant arguments that emphasized parental rights and medical liberty.

Parental rights were central to the evangelical abstinence movement. Known as purity culture, it was seeded by individual evangelical leaders in the 1990s and bloomed into a full-fledged subcultural movement by the early 2000s.[52] For adherents, the primary purpose of purity culture, which was focused on girls but also included boys, was preserving virginity until marriage—to create a new virginity-focused sexual revolution.[53] Doing so yielded purity of mind, body, and soul, and as a result, it fostered better marriages, healthier women and families, and produced better citizens.[54] To enter into purity culture, youth were encouraged to make public pledges of chastity until marriage, often at church-sponsored mass events. Girls vowed to their fathers, their premarital protectors, to remain virgins until they married.[55] The purity movement was a dominant evangelical youth subculture during the early years of Gardasil. Under the Bush Administration, the purity organization Silver Ring Thing received $1.5 million in federal funds for abstinence-only education in schools over three years.[56]

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[52] On the history of evangelical purity culture see Amy R. DeRogatis, *Saving Sex: Sexuality and Salvation in American Evangelicalism* (New York, Oxford University Press, 2014); Heather Hendershot, *Shaking the World for Jesus: Media and Conservative Evangelical Culture* (Chicago: University of Chicago Press, 2004); Sara Moslener, *Virgin Nation: Sexual Purity and American Adolescence* (New York: Oxford University Press, 2015).
[53] Dennis L. Carlson, *The Education of Eros: A History of Education and a History of Adolescent Sexuality* (New York: Routledge, 2012), 115; Moslener, *Virgin Nation*, 118; Wendy Shalit, *Good Girls Gone Mild: Young Women Reclaim Self-Respect and Find It's Not Bad to Be Good* (New York: Random House, 2007).
[54] Moslener, *Virgin Nation*, 15, 100.
[55] Organizations such as True Love Waits, Silver Ring Thing, and Generations of Light Ministry are key actors in purity culture creation and endurance.
[56] Moslener, *Virgin Nation*, 116

Viewing the HPV vaccine through the lens of purity culture helps to explain conservative Christians' wariness about it. In the 2008 documentary *The Virgin Daughters* which followed the preparations for a purity ball in Colorado Springs, Colorado, Kevin Moore, a Black single father of three teenaged daughters, described his reasoning for supporting purity.[57] Speaking to the camera, he explained, "I'm not interested in someone messing [my daughters'] minds up for the rest of their lives. I'm not interested in them getting cancer of the cervix. I'm not interested in them getting a venereal disease. I'm not interested in them meeting the wrong person and suffering and going through a divorce."[58] While Moore did not explicitly mention the HPV vaccine, he addressed STIs and cervical cancer—an allusion to HPV—and grouped them together with other ill effects of premarital sex.

Others in the documentary emphasized that the physical risks of sex—infections––were on equal footing with the need to preserve spiritual purity. These examples illustrated how some evangelicals used purity culture as a shield against the largely inevitable fact that teenagers would be sexually active. While public health researchers concluded that virginity pledgers were just as likely to get STIs as non-pledgers, purity culture's boundaries of perceived protection also served as blockades against considering the HPV vaccine in good faith.[59] Put simply, the beliefs and practices constructed by

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[57] *The Virgin Daughters*, Dir. Jane Treays, Cutting Edge Productions (2008); DeRogatis*, Saving Sex*, 11-13.
[58] Quoted in *The Virgin Daughters* (2008).
[59] Nicholas Bakalar, "Patterns: HPV Vaccine Is Not Linked to Promiscuity," *New York Times*, December 26, 2011; Carlson, *The Education of Eros*, 118; Anahad O'Connor, "HPV Vaccine Does Not Alter Sexual Behavior, Study Finds," *New York Times*, October 15, 2012. For scientific studies see Robert A. Bednarczyk et al. "Sexual Activity—Related Outcomes After Human Papillomavirus Vaccination of 11- to 12-Year Olds," *Pediatrics* 130, no. 5 (November 2012): 798-805; Hannah Brückner and Peter Bearman,

purity culture and upheld by its institutions and commitment ceremonies made HPV prevention via vaccination anathema, at least in theory.

Conservative Catholics had many of the same reservations about the HPV vaccine that evangelicals did. Catholic writers were often stricter in their disapproval than the official stances of Catholic leadership organizations, such as the Catholic Medical Association (CMA). The CMA and the Catholic Church were careful to clarify that they supported the availability of an HPV vaccine, but they did not support vaccination mandates. Many Catholic writers could not resist noting the mixed messages sent by the CMA's official position paper on the vaccine, which stated, "Prevention of HPV infection is distinct from, and should not be construed as encouraging, the behavior by which HPV is spread."[60] In a guest post on *Catholic Online*, Patrick Hayes, a Catholic physician and president of the Right to Life Committee in Corpus Christi, Texas, excoriated what he saw as the moral ambiguity of the Church's stance:

> As HPV is a sexually transmitted disease, the success of a 'medicine' that appears to remove the consequences of sin, by preventing genital warts and cervical cancer in persons who have one or more partners, leaves persons of faith and chastity questioning the motives and wisdom of governments, pharmaceutical companies, and doctors.[61]

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"After the Promise: The STD Consequences of Adolescent Virginity Pledges," *Journal of Adolescent Health* 36 (2005): 271-278; Nicole C. Liddon et al., "Human Papillomavirus Vaccine and Sexual Behavior Among Adolescent and Young Women," *American Journal of Preventive Medicine* 41, no. 1 (2012): 44-52; Allison Mayhew et al., "Risk Perceptions and Subsequent Sexual Behaviors After HPV Vaccination in Adolescents," *Pediatrics* 133, no. 3 (March 2014): 404-411.

[60] Amy Kotlarz, "Teen HPV Vaccine Injects Controversy," *Catholic Courier*, December 20, 2009. Kotlarz cites the Catholic Medical Association's position paper from January 2007.

[61] Patrick Hayes, "HPV Vaccination: Is There an Elephant in This Room?" *Catholic Online Blog*, July 4, 2013.

Hayes' description of the vaccine as "removing the consequences of sin" illustrated the embodied aspects of purity he believed were attained through chastity. Put differently, a body containing HPV or showing signs of infection was deserving of those consequences, whether they be abnormally changing cervical cells or genital warts, because they were tangible reminders of the sinful acts that procured them. The HPV vaccine could both provide the occasion for committing sexual sins and allow sinners to be duped into a false sense of cleanliness or sinlessness. In Hayes's view, the vaccinated would be incorporated into the sexually liberal culture that defied the family values that conservative Christian leaders espoused. To be vaccinated would mean to be a religious outsider.

Most Catholic publications had a more moderate stance than Hayes or many evangelicals took. Instead of being an invitation to sin, they framed HPV vaccination as protection *from* sin. Because the world itself was sinful, they said, virtuous young women were inherently unsafe. One contributor to CatholicMoms Blog wrote that the existence of the HPV vaccine and high rates of the disease were evidence of the "absurdly sad state of morality within the United States." Vaccination was necessary because of the prevalence of rape in American culture.

Conservative Catholics overrode their concerns about an individual child's prospective promiscuity by emphasizing the generalized promiscuity of the broader social landscape. Boys and men were likely to be sexual predators and to take advantage of girls and women, no matter how virtuous the latter were. While evangelicals focused their Gardasil concerns on the individual sinner, conservative Catholics focused on a licentious

culture that could overpower an individual's choices. Catherine O'Connell-Cahill, writing in *U.S. Catholic*, described a hypothetical scenario in which vaccinating daughters was necessary to protect them against worldly evils that were all-too-common. She wrote:

> Let's say you virtuously decide to withhold this vaccine from your daughter…Then she has sex for the first time on her wedding night with her husband, who is infected with HPV, which later causes her to develop cervical cancer. And you, her mom or dad, could have prevented this cancer by giving her three shots when she was 12 years old. How does your decision look then? Not so virtuous I'd say.[62]

Arguments like these effectively promoted the HPV vaccine as a good preventative measure for occurrences *outside* of individuals' control. They did not ring as endorsements for the vaccine, nor did they concede that premarital sex was acceptable, or even inevitable. Rather, their concessions to Gardasil served as strategic prevention against a culture in decline. The appeal O'Connell-Cahill made to parents about the hypothetical guilt they would feel should their daughter develop cervical cancer illustrated the core differences between sexual purity concerns about Gardasil and bodily purity concerns about the MMR. For those concerned about sexual purity, the primary problem was sin, of the individual and society. The vaccine was an enabler or bystander to impurity. For MMR mother warriors, the primary problem with the MMR was its toxicity and biologically polluting, illness-inducing properties. For them, the vaccine itself was the impurity.

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[62] Catherine O'Connell-Cahill, "Can We Please Stop Equating the HPV Vaccine with Permission to Have Teen Sex?" *U.S. Catholic* (October 11, 2011).

Vaccinating girls against HPV was palatable for Catholics under the framework of protecting innocent girls from a sinful society in which heterosexual men's desires ran amok. However, in 2011 when HPV vaccination was recommended for 11- and 12-year-old boys, the Catholic Medical Association was less forgiving.[63] The CMA quickly announced that immunizing boys against HPV was "neither sound ethics nor sound public policy."[64] The prospect of men having sex with men (MSM) loomed large as a sin that should not be encouraged in any way, even if mass vaccination of boys also meant immunization against a disease that affected straight men and could easily be passed to women. In considering boys and gay sex, Catholic leaders focused on the individual sinner, much as evangelicals did for girls. For evangelicals and for conservative Catholics, HPV vaccination forced reckonings over how a vaccine could increase sinfulness, both among their own children, and in the broader culture.

**Embattled Girlhood and the "Other" Gardasil Girls**

In many ways, Gardasil—the vaccine and its branding—was a proxy site for broader cultural anxieties around the meaning of girlhood in the early 2000s. Were girls empowered young women? Were they embattled, being slowly defeated by a hyper-sexualized and dangerous popular culture? Were girls innocent and morally pure anymore? Had they ever been? And crucially, how did answers to these questions inform whether girls should or would be vaccinated against HPV? These anxieties churned

[63] Harris, "Panel Recommends HPV Vaccine for Boys and Young Men."
[64] John F. Brehany and Maricela P. Moffitt, "Immunization Against HPV: Neither Sound Ethics Nor Sound Policy," *National Catholic Register* (November 3, 2011).

through public conversation during Gardasil's early years on the market. However, as sex panic died down as a major cause of HPV vaccine hesitancy, more traditional concerns about the vaccine's safety took center stage among skeptics.[65] Girls were still embattled, but their innocence was now tainted by allegedly dangerous side effects of the vaccine instead of by sex or promiscuity. Girls and women claiming vaccine injuries spoke for themselves, too. Inverting Merck's empowerment script, they testified that being a Gardasil girl had hurt them, and they advised other girls to avoid the vaccine. By the early 2010s, "Gardasil girls" connoted those who claimed injury from the vaccine and who used their voices and experiences to dissuade others from being vaccinated. They identified as witnesses to crimes against their own bodies. And, in cases of unexplained deaths, certain "Gardasil Girls" were held up posthumously as martyrs. In the eyes of vaccine skeptics, these girls were victims of Big Pharma and the government. They paid the ultimate price for having faith in a vaccine they believed would protect them and release women from the gripping fear of cervical cancer.

Merck's initial ad campaigns in 2005-2006 employed a "Girl Power" aesthetic borrowed from the 1990s.[66] The pre-teen girls showcased in commercials were racially and ethnically diverse, and they were self-possessed. They spoke directly to the camera and showed off their athletic prowess by playing basketball, skateboarding, and jumping

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[65] Adam G. Dunn, et al. "Mapping Information Exposure on Social Media to Explain Differences in HPV Coverage in the United States," *Vaccine* 35 (2017): 3033-3040; Melissa A. Habel et al., "The HPV Vaccine: A Content Analysis of Online News Stories," *Journal of Women's Health* 18, no. 3 (2009): 401-407; Monique L.R. Luisi, "From Bad to Worse: The Representation of the HPV Vaccine on Facebook," *Vaccine* 38 (2020): 4564-4573.

[66] Marnina Gonick, "Between 'Girl Power' and 'Reviving Ophelia': Constituting the Neoliberal Girl Subject," *The National Women's Studies Association Journal* 18, no. 2 (Summer 2006): 1-23.

rope across the screen. Each girl in the "One Less" ads told viewers that she would be "one less death from cervical cancer" because she had received Gardasil.[67] In Merck's depiction, girls were healthcare-capable, independent, and morally unambiguous—wholesome and non-sexualized.[68] This glorified view certainly did not resonate with many parents, who had been conditioned to view adolescent girlhood as risky.[69] Given that HPV vaccine uptake remained low for years, even for liberal parents, there was a gap between truth and advertising.

The narrative of the embattled modern girl had been enshrined in parenting literature of the 1990s written by psychologists, ranging from James Dobson's conservative Christian parenting manual, *Children at Risk* (1990) to the mainstream best-seller *Reviving Ophelia* (1994) by Mary Pipher. Focusing on middle-class white girls, both books understood girlhood and female adolescence as a frightening period of liminality and danger. The cover of Dobson's book even depicted a silhouetted girl teetering across a tightrope. While Dobson and Pipher's examinations of American culture came from different ideological backgrounds, the concept of young girls' over-sexualization in, and by, mainstream popular culture was a driving force of their

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[67] Spanish language ads also provided this message, as "Una Menos."
[68] Gottlieb, *Not Quite a Cancer Vaccine*, 25; Mamo et al., "Producing and Protecting Risky Girlhoods," *Three Shots at Prevention*, 135.
[69] Mamo et al., "Producing and Protecting Risky Girlhoods," *Three Shots at Prevention*, 132; Thompson, "Who's Guarding What?" 124. Histories of girlhood and the care and construction of girls' bodies inform these critiques. See Catherine Driscoll, *Girls: Feminine Adolescence in Popular Cultural History* (New York: Columbia University Press, 2002); Joan Jacobs Brumberg, *The Body Project: An Intimate History of American Girls* (New York: Random House, 1997); Heather Munro Prescott, *A Doctor of Their Own: The History of Adolescent Medicine* (Cambridge, MA: Harvard University Press, 1998).

worries.[70] Without citing statistics, both authors discussed the prevalence of sexual assault, arguing that girls were in more physical danger in the 1990s than in prior decades. Castigating mainstream culture as "girl-poisoning," Pipher characterized female adolescence as objectively traumatic.[71]

Both guides encapsulated adolescent girlhood as a period of extreme risk, wherein girls were simultaneously fledging and frightening, and self-empowerment was nearly impossible. Girls needed parental protection. While proponents of Gardasil saw the vaccine as an intervention that could decrease the riskiness of girlhood or provide medical stability by elongating the "protected childhood period," naysayers saw the opposite. Instead, they cast Gardasil as a specter—a dangerous unknown substance that could transform healthy girls into unhealthy young women. It could turn asexual children into sexual adolescents. It could hijack their normal growth into women by poisoning them, even making them infertile. Penetrating their bodies by way of penises or needles, sperm, or vaccine serum evoked anxieties about girls' inherent fragility. Because the girls had voluntarily been vaccinated, their conditions created a paradox of empowered victimhood. Gardasil girls who claimed vaccine injury were treated as medical martyrs.

In the autumn of 2011, twenty high school girls in the rustbelt town of Le Roy, New York, began experiencing involuntary movements—twitches, verbal outbursts, and muscle spasms. Many of the girls documented their symptoms online, showing the world

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[70] James Dobson and Gary L. Bauer, *Children at Risk: What You Need to Know to Protect Your Family* (Nashville, TN: Thomas Nelson Books, 1991), 50; Mary Pipher, *Reviving Ophelia: Saving the Selves of Adolescent Girls* (New York: Random House, 1994), 12, 205.
[71] Pipher, *Reviving Ophelia*, 12.

their faces and telling their stories. Similar videos by girls in Japan, Denmark, Ireland, and Colombia also went viral around this time.[72] The Le Roy girls garnered mass fascination, concern, and media attention.[73] As the girls were checked by neurologists, psychologists, and the city was investigated for neurotoxins, news outlets and activists speculated about a range of potential causes for the sudden disturbing symptoms. Environmental pollution from a nearby thirty-year-old chemical spill, new gas wells, and the HPV vaccine were all considered possible culprits.[74] Due to the girls' ages and the widespread use of the HPV vaccine, the idea that the vaccine could cause such a mysterious illness fueled safety concerns. Vaccine skeptics noted that Gardasil contained the heavy metal, aluminum, as a preservative. Case experts checked each affected girl's immunization dates and status, and these were reported publicly to quell any sense of connection between the Le Roy illness and the HPV vaccine.[75] While there was no evidence to support the HPV vaccine theory, this was an example of how threatening Gardasil was perceived to be, as well as how it became a potential scapegoat for adolescent girls' illnesses—physical and mental—in the 2010s.[76] This episode also stirred fears about aluminum as a potentially harmful toxin present in many vaccines. Aluminum as a cause for neurological disease had assumed the same role that the whole-

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[72] Larson, *Stuck*, 84-90. Larson refers to these episodes as examples of "emotional contagion."
[73] Susan Dominus, "The Mystery of 18 Twitching Teenagers in Le Roy, New York," *New York Times* (March 7, 2012); Neale Gulley, "School's End Clears Up New York Students' Mystery Twitching," *Reuters* (June 23, 2012); Nicholas Sammond, "Touched by Le Roy: Teens, Tourette's, and YouTube in the Twilight of Neoliberalism," *Women's Studies Quarterly* 43, no. 1/2 (Spring/Summer 2015): 29-50.
[74] Hannah Tennant Moore, "The Fever," *New York Times*, June 27, 2014.
[75] New York State Department of Health, "Investigation of Neurologic Symptoms Among Le Roy Jr/Sr High School Students, October 2011-January 2012, Interim Report" (January 31, 2012), 2-4.
[76] One of the Le Roy girls was diagnosed with Tourette's Syndrome, and the rest were given the group diagnosis of "conversion disorder," a psychological condition. See Gulley, "School's End"; Sammond, "Touched by Le Roy."

cell pertussis component of the DPT vaccine did in the 1980s and mercury did during the MMR-autism controversy.

A new documentary exposé about Gardasil injury made waves in 2011. Dismissed by major newspapers as "manipulative," *The Greater Good* followed many of the same tropes as *Vaccine Roulette*.[77] Unlike its predecessor, which aired numerous times on national television, *The Greater Good* was only released in limited theaters and online behind a paywall. This difference in accessibility reflected how controversial vaccines had become in American society over thirty years. Not only were concerns about vaccine safety less tolerated in mainstream culture, but institutions were also increasingly limiting the reach of these concerns in public forums. *The Greater Good* focused primarily on the HPV vaccine, its creators arguing that Gardasil had been fast-tracked through government approvals and therefore was not fully safety tested. Without attribution, the documentary flashed statistics such as "85 reports of death after Gardasil in 2010" and "$100 million spent by Merck on Gardasil ads in its first year" across the screen without attribution. Just as it had been in *Vaccine Roulette*, the storytelling of those who claimed vaccine injury had high impact in *The Greater Good*.

The story of one of the main characters, Gabi Swank, a high schooler in Wichita, Kansas, illustrated the power of girl-witnessing. Introduced with footage of Gabi's cheerleading days, Gabi reported, "I have received three Gardasil shots…after I received the shots, everything went crazy, and I started getting sick." Immediately after this

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[77] Jeannette Catsoulis, "The Fight Over Vaccines and Autism, Continued," *New York Times*, November 17, 2011; David Gorski, "The Greater Good: Pure, Unadulterated Anti-Vaccine Propaganda Masquerading as a 'Balanced' Documentary," *Science-Based Medicine Blog*, November 7, 2011.

statement, the film shifted to a blurry Gabi rolling on the floor, accompanied by her voiceover. “Right after [the camera crew] left yesterday, I had a lot of seizures, so I’m very sore today. Very sore.” As the film progressed, Gabi was interviewed numerous times, alone and with her mother, Shannon. Gabi recounted having two strokes, partial paralysis on the right side of her face, partial vision loss, and chronic seizures. In one scene, Gabi is interviewed in her living room with Shannon nearby. Gabi recounted watching MTV as a middle-schooler and seeing Gardasil’s “One Less” ad frequently. She had talked Shannon into letting her get vaccinated, but in retrospect, she lamented, “I don’t know what got into my head...” Interjecting, Shannon exclaimed, “[The ads] got to her! [Gabi and her friends] talked about it amongst themselves at school – ‘did you get that yet?’ You need to get it, did you tell your mom about it?’” Later in the film, Gabi develops vasculitis after having more seizures, and she cannot go to her homecoming dance. The ensuing montage is difficult to watch: Gabi tries on dresses in a fitting room with Shannon, Gabi struggles with pain, Shannon resolutely drives an angry and frustrated Gabi to the hospital, and finally, Gabi spends homecoming night at home, visibly depressed.

Throughout these cuts, partially cinema verité and partially narrated, the message of the film was clear: there were probably far more girls like Gabi than reported. Other commentators argued the same. Near the conclusion of the film, Gabi spoke again to the camera stating, “I would do *anything* to get my life back to normal…I don’t want any other girl to go through this.” Shannon concurred, adding, “I would rather my daughter

got cervical cancer than what she's going through now. It's not worth it."[78] In the end, Shannon's sentiment validated her daughter's suffering, which was portrayed as tragic, unjust, and unnecessary—a teenage girlhood ruined by a vaccine pushed by a greedy pharmaceutical company to prevent an unlikely disease. Gabi was a medical martyr.

Martyrdom is at the core of Christian identity, and it is also germane to some Jewish and Muslim sacred stories. For Christians, Jesus was the paramount martyr. Written from a religious perspective, martyrdom narratives reinforce the power and salvation of faith.[79] Narratives begin with a devout believer. The believer is persecuted because of her faith or minority religious identity by a dominant religious or political regime. The regime is determined to stamp out heretics or problematic minorities. Punishment is public, imbibed by jeering crowds. The faithful is given opportunities to renounce her convictions under extreme duress, but she never does. She dies a violent, but sinless death. As religious studies scholar Elizabeth Castelli has argued, martyrdoms in Western cultures, from antiquity to the present, are constructed by audiences, real or fictive. In other words, the story, and the cultural meanings it provides, makes the martyr. Contrary to popular uses of the term, it is not the isolated death that makes someone a martyr. Rather, it is an audience who gives that death a moral meaning that does. The death need not be a historical reality for a martyrdom narrative to successfully convey the lesson that, to stand by one's convictions, *especially* while embattled, is a sacred act.[80]

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[78] All quotes from *The Greater Good*, Dir. Kendall Nelson (2011).
[79] Candida Moss, *The Myth of Persecution* (San Francisco: HarperOne, 2013), 4-13.
[80] Elizabeth Castelli, *Martyrdom and Memory: Early Christian Culture Making* (New York: Columbia University Press, 2004), 33-34.

Gardasil victims were, in the eyes of vaccine skeptics, martyrs who died or were injured for the cause of cervical cancer prevention. They were killed by Big Pharma, a conglomerate of greedy companies willing to sell any medical product for profit. *The Greater Good* was one example of how Gardasil Girls who identified as "survivors" were claimed and enveloped into the vaccine-skeptical network as living medical martyrs. The title of the documentary was a fitting double entendre. In one sense, "the greater good" was the public—the herd and those who benefit from it. The "other" Gardasil girls sacrificed their own health for the greater good—a bitter irony. They told their stories "for the greater good" of educating others about the harms of the vaccine. They spread vaccine skepticism to save other girls, empowering them to say no to the powers-that-be.

Another exemplar of the medical martyr narrative came two years later, with a short video called "Not a Coincidence." Produced by The Canary Party, the video appeared on YouTube and went viral.[81] In the four-minute video, teenaged girls spoke to the camera in short clips, their names and ages displayed below their faces. In some cases, only a photograph and name were shown—a girl horseback riding, another painting—with a voiceover such as, "My life was worth living and my death was not a coincidence."[82] Challenging the hopeful message of Merck's "One Less" ads, the video was a testament to girlhood—and motherhood—in peril. Because of Gardasil, the girls depicted no longer held the promise of becoming healthy women and mothers. As one

[81] The Canary Party, "About Us." https://canaryparty.org/about/. The Canary Party was originally formed in 2010 as an organization committed to identifying and promoting consumer knowledge about environmental toxins and alternative autism causes and treatments, but its current mission is wider.
[82] The Canary Party, "Not a Coincidence," 2013.

young woman, Brooke Cregger, stated, "I dreamt of becoming a mom. I developed a condition called premature ovarian failure. I was never told I could be one less mother in the world."[83] Brooke's allusion to "One Less" was sharp and powerful, putting a fine point on the morally tinged promise of pure girlhood as the inevitable precursor to strong motherhood. In cases like Brooke's, the implications of lost motherhood were twofold: the lost chance to fulfill her feminine identity and a world deprived of her potential children.

Perhaps the best-known Gardasil martyr was Christina Tarsell, whose death was officially caused by Gardasil after her posthumous case moved through vaccine court. Her martyrdom narrative was widely circulated among on vaccine-skeptical websites, which initiated a new tradition of incorporating memorial pages for young adults claimed to have died from a fatal reaction to Gardasil.[84] In June 2008, Christina, a twenty-one-year-old college student, died in her sleep after moving into her summer housing in upstate New York. Christina had completed her three-dose Gardasil vaccination days earlier, and she was otherwise considered healthy. When Christina's autopsy report stated that her cause of death was undetermined, her parents set out on a mission to find out what had killed their daughter. In interviews, her mother, Emily, explained that she was convinced that Gardasil had killed Christina. Her family searched for doctors who would

[83] The Canary Party, "Not a Coincidence," 2013.
[84] James Lyons-Weiler, "Who and What Killed Christina Tarsell?" *Children's Health Defense*, April 4, 2018. The website SaneVax.org, self-identified as "the first international HPV vaccine information clearinghouse," combined sections such as "This Week's Survivor" and "Victim Memorials," alongside articles and reports discrediting Gardasil's safety and efficacy claims. The racially diverse victims pictured were identified by first name, age, and location—from New York to Mexico to France—with the number of Gardasil shots they had received.

report her death as a reaction to the vaccine into VAERS, the federal injury report system, to be reviewed and ruled upon by a Special Master in vaccine court.[85] Christina's memorial website, "Gardasil and Unexplained Deaths," featured a photograph of Christina alongside a description of the events leading to her death. Years later, after her case was decided, the site was updated to include a narrative told from Christina's first-person perspective, as though she were speaking as an angel or otherworldly onlooker. Part autobiography, part obituary, "Christina" explained the medical cause of her death and its important precedent for vaccine injury cases.

> World-class experts determined that I died from an arrythmia induced by an immune response to the HPV vaccine Gardasil which I had received only days before my death.
> After 8 long years, the government finally conceded that we met our burden of proof that Gardasil caused my death. This is a precedent setting case. I am deeply grateful to everyone who, guided by truth and a higher consciousness, would not let my death be dismissed as a 'coincidence.'[86]

The rest of the website combined elements of an online memorial—images of Christina, examples of her artwork and writing—with links to external sources about her death and reports about Gardasil's safety risks. Christina's memorial website inspired the others. They employed the tropes of martyr narratives, giving viewers an up-close view of conviction and suffering where they could learn the meanings these deaths within the vaccine hesitant community. The victims of vaccine injury were no longer accidental anomalies. Instead, they were martyrs whose intentions were good but who were

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[85] Christina England, ed. *Shattered Dreams: The HPV Vaccine Exposed* (CreateSpace Independent Publishing, 2019).
[86] "Gardasil and Unexplained Deaths: Christina Tarsell," Gardasil HPV Truths, https://www.gardasilhpvtruths.com, Accessed August 28, 2022. The website is now Gardasil HPV Truths.com.

punished for naively believing in vaccination or following CDC recommendations. While there were very few known victims of Gardasil, vaccine-hesitant organizations and websites imbued their names and faces, injuries, and deaths, with meaning. Online, their stories lived on with each share or repost.

On social media, skeptics created moral community networks that characterized Gardasil as an unsafe, dangerous medical product that injured girls and young women right at their most precarious stage of life. More than ever before, these networks were international, often bringing together English speakers from the United States, Great Britain, and Australia. In the 2010s, as vaccine hesitancy in the United States became increasingly politicized, book publishers shied away from publicizing vaccine-hesitant views, leaving the determined writer to self-publish or find and international publisher for their stories.[87]

One exception occurred in 2013 when journalist Katie Couric experienced significant backlash after she interviewed Christina's mother, Emily Tarsell, and Diane Harper, a scientist who had helped to develop Gardasil but who later claimed that Merck was misrepresenting Gardasil's uses and efficacy.[88] Mainstream news writers criticized Couric for bringing vaccine skeptics onto her show and for taking a "scientifically unsound, all-sides approach" to Gardasil, much as they did when writing about Oprah

[87] England, ed. *Shattered Dreams*; Mary Holland et al. *The HPV Vaccine on Trial* (New York: Skyhorse, 2018); David Hodges, "The Murdering of Our Daughters," *The Common Sense Show Blog*, September 17, 2013; Helen Lobato, *Gardasil: Fast-Tracked and Flawed* (Australia: Spinifex Press, 2017).
[88] Katie Couric, "Interview with Emily Tarsell," *Katie*, December 4, 2013. Clips are no longer online.

Winfrey's support of Jenny McCarthy.[89] In the words of NVIC's Babara Loe Fisher, Couric had endured a "public flogging."[90] Her readers agreed—hundreds commented on Fisher's blog post calling Couric a hero. This incident emphasized three trends in vaccine hesitancy. First, it further politicized Gardasil by tapping into the ire of political and religious conservatives who were distrustful of mainstream institutions. Second, it exemplified the martyrdom narrative that alleged victims of Gardasil had created and circulated in their online networks. And third, it increased skeptics' feelings of cultural embattlement. Seeing both a well-respected journalist and a mother whose daughter's death was officially caused by Gardasil publicly disparaged for taking safety concerns seriously was enraging.

More than any other vaccine to date, Gardasil was a politicized medical intervention that challenged many conservative Christian Americans' religious values about premarital sex. However, these values ran deeper than the specific concern that Gardasil could undermine the value of girls' virginity or encourage gay sex. Animating these fears was the idea that receiving a vaccine, and presumed immunity against a disease, could potentially alter people's behavior and cause an increase in risky, immoral activity, furthering a societal breakdown. Conservative Christians were most likely to voice their concerns about this possibility—despite scientific evidence to the contrary. However, fears about girls' sexuality, purity, and the sanctity of girlhood were much

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[89] Matthew Herper, "Four Ways Katie Couric Stacked the Deck Against Gardasil," *Forbes*, December 4, 2013; Allie Jones, "Katie Couric Feeds HPV Vaccine 'Controversy,'" *The Wire*, December 4, 2013; Phil Plait, "Gardasil and Katie Couric: Talk-Show Host Apologizes, But the Damage Is Done," *Slate*, December 12, 2013.

[90] Barbara Loe Fisher, "Gardasil Vaccine Witnessing & The Public Flogging of Katie Couric," National Vaccine Information Council Newsletter (January 14, 2014).

further spread than it might have seemed from Gardasil's media coverage during its first decade on the market. The fact that only two states mandated HPV vaccination for school attendance and that less than half of adolescent girls and boys completed the three-shot vaccination protocol are evidence of Gardasil's fraught nature.[91] These facts show how pervasive concerns about sex are in American family life, despite a popular culture that celebrates and rewards sexualizing girls and young women. Lastly, they show that safety concerns continued to be a driving force in vaccine hesitancy, particularly around new vaccines. In Gardasil's case, parents often decided the risk of cancer was not worth the risk of the prevention. As adult vaccines were increasingly available to combat a range of diseases, individuals' risk tolerance and personalized decision making took center stage, often sidestepping the main goals of public health.

[91] Centers for Disease Control and Prevention, "Understanding HPV Coverage," National Center for Immunization and Respiratory Diseases, (Last modified August 23, 2018), https://www.cdc.gov/hpv/partners/outreach-hcp/hpv-coverage.html, Accessed August 28, 2022.

# CHAPTER SIX

## Flu Shot Mythologies

In March of 2013, *New York Times* columnist Jane E. Brody published "Myths About the Flu Vaccine," a two-part article. A frequent contributor to the newspaper's vaccine coverage over thirty years, Brody recounted her three bouts with the flu, including a particularly frightening case that developed into double pneumonia while she was pregnant with twins in 1968. The good news, Brody explained, was that she had not suffered from the flu since the 1970s, when she started receiving an annual flu shot. The article was accompanied by a graphic depicting a woman—part Greek gladiator, part crusader wielding a medical cross-emblazoned shield and a giant sword shaped as vaccine syringe. This superwoman was fighting off an invasion of green cartoon germs. After discussing the personal, Brody shifted to the task of "debunking" the most pervasive "myths" about the flu vaccine. During the 2012-2013 flu season, there had been 33 million symptomatic cases and 42,570 deaths in the United States. "As this year's severe epidemic demonstrated, too many people are neglecting this most basic precaution," Brody wrote.[1] The cause of this public health crisis? Popular myths running the gamut from "the flu shot doesn't work" to "I never get the flu" to "the vaccine causes the flu." If only Americans would stop believing in mythical narratives, Brody scolded, the country could avoid serious outbreaks of deadly influenza.

[1] Jane E. Brody, "Myths About the Flu Vaccine," *New York Times*, March 11, 2013; "Burden Estimates for the 2012-2013 Influenza Season," Centers for Disease Control and Prevention, Last reviewed October 25, 2018, https://www.cdc.gov/flu/about/burden/2012-2013.html, Accessed September 2, 2022.

Since its debut to the public in the 1950s, opinions about the seasonal influenza vaccine have been as fickle as the virus itself. Flu shots are especially enigmatic because, like the influenza virus, they mutate and vary in efficacy and availability. For most adults, getting a flu shot in any given year is optional. Some people proudly get a flu shot annually while others passively opt in or out when given the option at a medical appointment or pharmacy—sometimes getting a shot one year and not another. Others resolutely avoid flu shots. Some poor communities, often the home of racial and ethnic minority populations, lack proper access or information about them. This variability, as well as the annual frequency with which they are offered, differentiates flu vaccines from other vaccines. During the 2000s, flu vaccine skepticism and low vaccination rates were widespread and normalized. By the 2010s, parents who abstained from giving their children the MMR vaccine were considered extreme and shameful. Despite the flu's high prevalence, skipping a flu shot did not carry the same moral burden.

Beginning in earnest during the Era of Controversy, public health scholars and officials, medical systems, and corporations dedicated tremendous resources to encouraging voluntary flu vaccination, often with little success. Over decades, the flu shot myths that Brody described in the *New York Times* cemented in American culture, creating a baseline of apathy among many adults. Out of this rocky ground, two parallel paths of flu shot hesitancy were most notable. First was race-based hesitancy among Black and Latinx people. Because most vaccines were mandatory for children, the structural racial disparities in healthcare outcomes and access were obscured from vaccination data. Since flu shots were voluntary, however, public health officials found

marked racial differences in influenza vaccination rates between white, Black, and Latinx populations. Each year, roughly ten-percent fewer Black and Latinx Americans received flu shots compared to white Americans.[2] Researchers posited that this discrepancy was the result of longstanding mistrust of medical authorities among racial and ethnic minority communities. Mistrust derived from historical and contemporary medical racism, systemic healthcare inaccessibility, and demonstrably worse health outcomes for Black Americans and other people of color compared to those of whites.

In 2003, the United States Institute of Medicine (IOM) published a report entitled, "Unequal Treatment," which described how these disparities were enacted across the healthcare landscape.[3] In response to threats of avian and swine flu pandemics in 2007 and 2009, public health officials sought practical, community-based strategies to overcome some race-based vaccination disparities. Working with faith leaders and churches, they organized community-based vaccine drives, effectively bringing routine preventative medical care into sacred spaces and building on the earned trust that faith-based relationships afforded to vulnerable populations as a tactic to encourage vaccination. The CDC launched "National Influenza Vaccination Week" in December 2010 with U.S. Surgeon General Regina Benjamin speaking at Potter's House, a Dallas-based megachurch run by Bishop T.D. Jakes, a nationally prominent Black pastor.[4] Campaigns to reduce flu shot hesitancy among communities of color, particularly Black

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[2] Mahmud M. Salaheddin et al. "Effect of Race and Ethnicity on Influenza Vaccine Uptake Among Older Medicare Beneficiaries: A Record-Linkage Cohort Study," *The Lancet* (March 2021): 143-153.
[3] Brian D. Smedley, et al., "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care," Washington, D.C.: Institute of Medicine of the National Academies (2003).
[4] "Prominent Faith and Community Leaders, Congregations Kick Off Vaccination Efforts," Centers for Disease Control and Prevention (December 3, 2010).

Americans, were just one facet of larger governmental and institutional efforts to increase trust in medical authorities.[5] Faith-based seasonal flu vaccine drives continued, although racial disparities in flu vaccination persisted into the 2020s.

The second path of flu vaccine hesitancy was forged among conservative white populations during the early 2000s. It emerged out of the increasing interest in alternative medicine among political conservatives and libertarians. Much like parental vaccine hesitancy toward mandatory childhood vaccines in the late 1990s and early 2000s, mainstream opposition to flu shots was nursed by a mythology about nature that contrasted the sanctity or goodness of "the natural," on the one hand, and the profanity, or evil, of "the unnatural" on the other.[6] These views had expanded from progressive pockets of the country to occupy a prominent role in conservative media, becoming enmeshed with Tea Party-era distrust of government and big business. In these venues, utilizing nature's provisions was self-reliant. Russell Blaylock, a retired neurosurgeon and columnist for the conservative website, Newsmax, suggested readers forego flu shots and rely on their own natural, or naturally enhanced, immune systems to fight infections.[7] Other alternative health leaders and writers politicized biomedicine and public health, employing the genre of conspiracy theory. Websites such as "GreenMedInfo" and "Health Nut News" not only promoted alternative medical modalities or tips for natural

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[5] Dorothy Roberts, *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century* (New York: The New Press, 2011).
[6] The natural/unnatural binary is a foundational part of modern alternative medicine and its appeals to participants. Ted J. Kaptchuk and David M. Eisenberg, "The Persuasive Appeal of Alternative Medicine," *Annals of Internal Medicine* 129, no. 12 (December 15, 1998): 1061-1065. Alan Levinovitz argues that this binary is fundamentally one of purity/corruption. Levinovitz, *Natural*, 121.
[7] Russell Blaylock, "Think Twice Before Getting a Flu Shot," *Newsmax*, November 13, 2013.

living. They also published conspiracies built upon untruths or scientifically unsound data that appealed to political and religious conservatives who leaned toward libertarian radicalism. Their writings promoted alleged evidence of evil misdeeds in biomedicine. MMR-autism theory had long been a source of vaccine misinformation, but most people who purveyed it were earnest in their promotion. They claimed to do so to help others. MMR skeptics saw failures of government and medical oversight, but unlike the new conservative conspiracy theorists, they had not necessarily assumed ill intention or a desire to injure children.

When it came to this newer iteration of "conservative-alternative medicine," many of the same ideas underlying the natural health movement persisted, but they were accompanied by assertions of nefarious intentions that supported a worldview in which the balance of power was dangerously off-kilter. Physicians such as Joseph Mercola and Sherri Tenpenny gained tremendous followings, arguing that impending flu pandemics were invented collaborations between government, medicine, and international politicians to sell vaccines and profit from mass panic. When they advised opting out of the flu shot, their reasoning was not simply that the shots were ineffective, or even that they might be harmful.[8] It was that a flu shot was an embodied sign of acquiescence to a corrupt global system that used biomedical technologies to weaken people rather than strengthen them. Many of these new leaders sold personally branded "counter-products" in the form of

[8] Joseph Mercola, "Flu Shot: Potential Side Effects and Dangers" *Mercola Blog*, December 30, 1990; Mercola, "People Who Get a Seasonal Flu Shot Are Twice as Likely to Catch Swine Flu," *Mercola Blog*, October 15, 2009; Mercola, "Warning: Your Flu Shot Contains a Dangerous Neurotoxin," *Mercola Blog,* October 31, 2011; Mercola, "Flu Shot Fails to Protect Seniors and Increases Miscarriages," *Mercola Blog*, September 26, 2019; Sherri J. Tenpenny, *What's Coming Through That Needle?* Documentary Film, NMA Media Press (April 12, 2010).

dietary supplements, books, DVDs, and other equipment for maintaining a healthy home without the help of mainstream medical experts.[9] These products encouraged further skepticism toward vaccines and other biomedical interventions. Taking Mercola's supplements was not only a means of promoting cellular health, but also a political and religious action in which followers physically embodied the morals they valued.

**A Brief History of the Flu Vaccine**

The flu is caused by three strains of the influenza virus (Types A, B, C).[10] Known in medieval Italy as the "baleful influence of the stars," influenza strains have caused epidemics and pandemics in humans for hundreds of years by circulating the world, mutating, and recombining in semi-regular intervals that "recycle" over generations.[11] While Types B and C are usually mild, Type A influenza strains can be deadly to humans. Other strains particular to birds or swine occasionally mutate and jump to human populations, where they can cause pandemics. These are referred to colloquially by either the region where they were suspected to originate (i.e., Hong Kong Flu) or by the type of animal the virus originated in (i.e., avian flu).

Seasonal flus are semi-cyclical. In some years, older populations, generally most at risk of catching the flu and developing severe complications such as pneumonia, may have immunity to a recurrent strain that their bodies first encountered as youth. In such a

[9] For example, Russell Blaylock, David Brownstein, Alex Jones, Joseph Mercola, and Sherri Tenpenny.
[10] John M. Barry, *The Great Influenza: The Epic Story of the Deadliest Plague in History* (New York: Viking, 2004), 101.
[11] Dehner, *Influenza*, 30, 95-100.

year, infants and children are at greater risk of catching the seasonal flu. However, because of the variability of influenza, it is difficult to predict which strains and mutations will hit or if they will be of a mild strain or pandemic-level. In the United States between 2015 and 2020, the number of deaths caused by influenza ranged from 12,000 to 52,000 per year, and each year hundreds of thousands of people are hospitalized, typically because the virus has infected their lungs and developed into pneumonia.[12] As a result, vaccine producers focus most of their resources on predicting the most virulent strain of the season. The prediction requires global surveillance of infection rates in animals and humans, as well as a network of scientists cooperating with the World Health Organization (WHO).[13]

In 1918, the Spanish Flu pandemic that erupted during World War I caused between 50 and 100 million deaths worldwide, infecting and killing people "with extraordinary ferocity and speed."[14] Despite the catastrophe of 1918, the federal government did not invest in influenza vaccine research. In the 1930s, on the brink of another world war, scientists Jonas Salk and Thomas J. Francis determined that the three different types of influenza virus could be isolated and grown in embryonated eggs.[15] Their preliminary vaccine research, which occurred before their groundbreaking work on the polio vaccine, was funded by the United States Army with the goal of formulating a

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[12] Centers for Disease Control and Prevention, "Disease Burden of Flu," Last reviewed January 7, 2022, https://www.cdc.gov/flu/about/burden/index.html, Accessed September 1, 2022.
[13] Dehner, *Influenza*, 70-72.
[14] Barry, *The Great Influenza*, 4.
[15] Centers for Disease Control and Prevention, "Influenza Historic Timeline," Last modified January 30, 2019, https://www.cdc.gov/flu/pandemic-resources/pandemic-timeline-1930-and-beyond.htm, Accessed August 29, 2022; C.W. Potter, "A History of Influenza," *Journal of Applied Microbiology* 91, no. 4 (October 2001): 572-579.

vaccine to inoculate troops. The first flu vaccine was tested on American soldiers, and in 1945, the military mandated that all American personnel be vaccinated against influenza. That version of the vaccine was licensed for general population use in the United States, but in 1947 the vaccine failed to produce immunity, elucidating two crucial facts about influenza: 1) influenza strains change, and 2) new strains originate in a particular locality and typically move westward around the globe.[16]

In the post-World War II period, epidemiologists and vaccine makers worked to hone both flu prediction and vaccine production. Between 1947 and 1957, seasonal flu shots were made available to older Americans who were at high risk for mortality from influenza or its complications. Later, shots became easier to get. However, the public often questioned how vaccines were dispensed. Who should get a flu shot? Who would pay for it? How much did people need to worry about the flu each year? Was it really that different from a cold? And, most importantly, would vaccine supply meet demand if the outlook was dangerous? Despite the systems of global surveillance, the United States government struggled with its role in flu prevention. For example, in 1957, as the virulent Asian Flu pandemic ramped up, President Eisenhower was disparaged for refusing to purchase vaccines, opting to let the free-market handle vaccine disbursement. As with the first batch of polio vaccines the year before, the federal government promised the public vaccines against Asian Flu but did not back the promise with purchasing power. As a

[16] Dehner, *Influenza*, 68-69.

result, there were not enough shots to cover the country's needs until after the threat passed.[17] This bureaucratic failure seeded public distrust.

Roughly a decade later, President Gerald Ford's "swine flu fiasco" caught widespread attention.[18] In October 1976, Ford stood beside polio vaccine inventors Jonas Salk and Albert Sabin to announce the federal government's $135 million swine flu vaccination program intended to vaccinate ninety-five percent of Americans against a pandemic predicted for that coming winter. Scientists were particularly frightened about the impending strain because it closely resembled that of the 1918 flu, and the CDC and news media hyped this connection to the public.[19] Determined not to repeat the mistakes of the past, the Ford Administration invested heavily in producing and promoting swine flu vaccines using a strain that circulated in a small outbreak of disease at the Fort Dix military base in New Jersey. The swine flu never hit. While the nation was fortunate that a deadly strain of swine flu did not materialize, caused twelve cases of Guillain-Barré syndrome, a deadly neurological disorder of the immune system. Strangely, unlike the larger-scale polio vaccine "Cutter Incident," which did *not* have a sizeable impact on polio vaccine uptake, the swine flu fiasco caused significant public backlash. This was because of the high cost of the program, the erroneous prognostication, and the perceived lack of severity of flu. The swine flu fiasco was the subject of numerous high-profile investigations, which were published for general consumption.[20]

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[17] Dehner, *Influenza*, 89.
[18] Harry Schwartz, "Swine Flu Fiasco," *New York Times*, December 21, 1976.
[19] Dehner, *Influenza*, 116.
[20] Conis, *Vaccine Nation*, 95; Reich, *Calling the Shots*, 55. Richard E. Neustadt and Harvey Fineberg at Harvard University's John F. Kennedy School of Government wrote the most definitive report of this

Over the past forty years, there has been a recurring pattern of misalignment between flu vaccine supply and demand. The pattern sowed public confusion and distrust of the medical establishment. News headlines, such as "Disease Agency Says Just One Million Used Flu Vaccine Program" (1979); "Most at High Risk Don't Get Flu Shot" (1988); "Free Flu Shots Halted, Leaving Many at Risk" (1992); "Shortage Limits Who Gets a Flu Shot" (2004); "Fearing a Flu Vaccine, and Wanting More of It" (2009); and "Why Don't More Americans Get the Flu Vaccine?" (2018) chart a general ambivalence toward vaccination.[21] Some years there were excess flu shots from low demand, while in other years more people wanted to get vaccinated than there were shots available. Both circumstances promoted the impression that the flu shot, for reasons different from other vaccines, was unstable and potentially untrustworthy. Throughout the early twenty-first century, this skepticism morphed into cynicism and, among many popular natural health websites and personalities, conspiracy theorizing.

These government failures and demonstrations of scientific fallibility, combined with the challenges that the influenza virus posed, made flu shots confusing for average Americans. This confusion bred hesitancy, and the government increased its recommendations for flu shot vaccination, focusing on the age groups usually hardest hit

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event, first as an article and later in two book editions. See Neustadt and Fineberg, *The Epidemic That Never Was*, 2nd ed. (New York: Vintage Books, 1983). The Andrew W. Mellon Foundation also funded a report. See Arthur M. Silverstein, *Pure Politics and Impure Science: The Swine Flu Affair* (Baltimore, MD: The Johns Hopkins University Press, 1981). On journalistic coverage, see David M. Rubin, "Remember Swine Flu?" *Columbia Journalism Review* (July/August 1977), 42-45.

[21] "Disease Agency Says Just One Million Used Flu Vaccine Program," *New York Times*, May 19, 1979; "Most at High Risk Don't Get Flu Shot," *Associated Press*, November 29, 1988); "Free Flu Shots Halted, Leaving Many at Risk," *New York Times*, September 24, 1992; Margaret Farley Steele, "Shortage Limits Who Gets a Flu Shot," *New York Times*, October 17, 2004; Perri Klass, "Fearing a Flu Vaccine, and Wanting More of It," *New York Times*, July 30, 2009; Melanie Posey, "Why Don't More Americans Get the Flu Vaccine?" *WBTV Birmingham*, October 2, 2018.

by flu—the very young and the very old. In 1993, Medicare started to cover the cost of flu immunization for people over the age of sixty-five, and in 2002 the American Committee on Immunization Practices (ACIP) recommended that children under two-years-old be vaccinated annually against the flu.[22] However, in 2020, only one-third of states mandated that healthcare workers, including hospital and nursing home employees, received seasonal flu vaccinations.[23] Flu shot hesitancy was reinforced by healthcare workers, as only 42-percent received annual flu shots in settings without a requirement, compared to 97-percent vaccination in workplaces with a requirement. Data shows that patients trust their nurses more than doctors, so when nurses are known to have low vaccination rates, it has a chilling effect on mass vaccination efforts.[24] Another myth, "nurses don't trust the flu shot," was largely proven true.

**Flu Shot Mythologies**

Newspapers and medical journals have tended to use the term "myth" to refer to a misinformation or unscientific belief. This is not quite right. However, it is helpful to employ a more religiously grounded definition helps elucidate the meaning of common

[22] As of September 2022, seven states required children in daycare or preschool to receive an annual flu shot.

[23] "State Immunization Laws for Healthcare Workers and Patients," Centers for Disease Control and Prevention, Last reviewed November 19, 2014, https://www2a.cdc.gov/vaccines/statevaccsApp/AdministrationbyVaccine.asp?Vaccinetmp=Influenza, Accessed September 2, 2022; "Influenza Vaccination Coverage Among Health Care Personnel — United States, 2019-20 Influenza Season," Centers for Disease Control and Prevention, Last reviewed October 1, 2020, https://www.cdc.gov/flu/fluvaxview/hcp-coverage_1920estimates.htm, Accessed September 2, 2022.

[24] "First Do No Harm? Health Care Workers Imperil Patients by Snubbing Flu Shots," *Hospital Infection Control & Prevention*, November 1, 2005; Anita M. Reedy, "Fighting the Flu: A Vaccination Program for Healthcare Workers," *Oncology Nursing Forum*, 3, no. 2 (2008): 171-172; Rohit Ojha et al., "The Impact of Vaccine Concerns on Racial/Ethnic Disparities in Influenza Vaccine Uptake Among Health Care Workers," *American Journal of Public Health* 105, no. 9 (September 2015): e35-e41.

misconceptions such as "the flu shot gives you the flu." It also brings to light the subtextual work that myth and mythologizing, do in public discourses. According to Religious Studies scholar Bruce Lincoln, "myth is ideology in narrative form," meaning that myths allow people to weave complex ideas together into coherent narratives that validate those ideas.[25] During the early 2000s, myths about these illnesses gave people the narrative tools to make sense of their experiences. Whether the flu was "terrible" or "not that bad," determined if it was something to fear and protect against or something innocuous. Myths also provided moral cover for those who chose to get vaccinated *and* those who did not.

Labeling others as writers or believers of myths reduces them to uninformed, ignorant, and lesser. Mythologizing the flu vaccine operated similarly for the vaccine hesitant and the vaccine determined, as it was "the other" who believed myths about flu shots. Myth and truth were in the eye of the beholder. As the mainstream media increasingly the scientific consensus on most medical topics, journalists presented the flu shot as innocuous at worst and extremely beneficial at best. This perspective was informed by the belief that the influenza virus is dangerous and deadly and that prevention via vaccination is the key to controlling disease spread and minimizing mortality. Unvaccinated doubters were accused of believing "myths" instead of scientifically proven facts and statistically verifiable odds.[26] This was similar to the

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[25] Bruce Lincoln, *Theorizing Myth* (Chicago: University of Chicago Press, 2000), 147.
[26] Deborah Franklin, "The Give and Take of Flu Shots: Mostly Give," *New York Times*, February 21, 2006; Donald G. McNeil Jr., "Panel Sees No Link Between Flu Shot and M.S. Relapse," *New York Times*, October 7, 2003; McNeil, "As Flu Vaccines are Given, Myths are Debunked," *New York Times*, October 6, 2009; Anahad O'Connor, "The Claim," *New York Times*, November 17, 2008.

reproach that large news outlets gave parents who opted out of MMR vaccines because of concern about autism or HPV vaccines because of abstinence-only beliefs.

On the skeptical side, opponents of the flu vaccine accused doctors and the scientific community for believing the myth that vaccination prevents the flu.[27] They were guilty of turning science into a fake religion and vaccination into a dangerous ritual.[28] Skeptics implied that scientists denied "real science" when they promoted flu shots because the vaccines were demonstrably dangerous and ineffective. Skeptics' mythology of flu vaccines was so entrenched that, according to public health studies, even when health providers corrected "myths" about the flu shot during patient encounters, it did not convince skeptics to receive one.[29]

According to a 2007 study, the most discussed concerns about flu vaccines were 1) healthy people did not need to be vaccinated; 2) flu vaccines were ineffective at preventing the flu because they were formulated based on scientific guesswork; and 3) the shot itself was dangerous.[30] The latter concern was twofold. Skeptics knew, rightly, that some flu shots contained live, weakened influenza virus, but they believed, falsely, that receiving a shot made it likelier to contract the flu—either from the shot itself or

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[27] Russell Blaylock, "Scaring the Public," *Newsmax*, December 31, 2019.
[28] Sherri Tenpenny, "You're the Cure." Interview with Ben Edwards. Veritas Medical Group, June 22, 2020, https://medical.veritashealthycommunity.com/podcast/youre-the-cure-june-22-2020, Accessed September 1, 2022.
[29] Brendan Nyhan and Jason Reifler, "Does Correcting Myths About the Flu Vaccine Work? An Experimental Evaluation of the Effects of Corrective Information," *Vaccine* 33 (2015): 459-464.
[30] Judy Y. Chen et al., "Health Disparities and Prevention: Racial/Ethnic Barriers to Flu Vaccinations," *Journal of Community Health* 32, no. 1 (2007): 5-20; Nyhan and Reifler, "Does Correcting Myths," 2015.

from being exposed in daily life.[31] Skeptics also feared that flu shots contained harmful chemical adjuvants like those that vaccine-hesitant people commonly objected to in other vaccines. Skeptics reasoned that if flu shots were ineffective at preventing the flu and likely to made people sick, abstaining was safer than vaccinating.

This view was perpetuated so frequently that, for many Americans, it formed a common mythology around flu vaccination that obscured mainstream medical consensus about its benefits. These beliefs, often referred to as "myths" by the medical establishment and mainstream media were presented as medical facts in politically conservative news coverage. By the early years of the twenty-first century, the tone of vaccine skepticism shifted from hesitancy toward conspiracy, as activists and prominent websites mythologized hesitancy, spinning narratives of nefarious intentions, dangerous ingredients, and powerful cabals working against public health rather than for it.

**"Hard-to-Reach" Populations and Medicalizing Sacred Spaces**

Between 2015 and 2020, roughly fifty percent of the American population received a flu shot in a given year.[32] During that period, Black and Latinx populations

[31] "Misconceptions About Seasonal Flu and Flu Vaccines," Centers for Disease Control and Prevention, Last Modified August 25, 2022, https://www.cdc.gov/flu/prevent/misconceptions.htm, Accessed August 28, 2022. Flu vaccines injected via needle contain killed viruses or one protein from a live virus and nasal spray vaccines contain "attenuated live viruses." For example, Russell L. Blaylock, *Health and Nutrition Secrets That Can Save Your Life* (Albuquerque, NM: Health Press, 2006), 169; David Brownstein quoted in Sylvia Booth Hubbard, "Will This Year's Flu Vaccine Be Another Colossal Failure?" *Newsmax*, September 23, 2015.

[32] During the first two years of the Covid-19 Pandemic these numbers were significantly higher than in previous years. https://www.cdc.gov/flu/fluvaxview/coverage-1920estimates.htm

received ten percent fewer flu shots than white populations.[33] Since the 1960s, public health officials and lawmakers have sought to decrease racial disparities in vaccine medicine. The Vaccination Assistance Act of 1962 provided expansive government financial aid for public vaccination programs, part of the Kennedy and Johnson administrations' commitments to the "the trinity of social problems," which were poverty reduction, education reform, and disease prevention.[34] This legislation focused resources on Black people in urban communities to increase accessibility to, and knowledge about, vaccination. Later, state-based vaccination mandates for school attendance effectively closed racial gaps in childhood vaccination rates. However, during the early 2000s, researchers noted stark racial disparities in flu vaccination. The cause? Centuries of medical racism and intergenerational trauma have resulted in widespread Black vaccine hesitancy and distrust of medical authorities.

The more that scholars and officials studied racial disparities in medical care and outcomes, the more critical inequities they found between Black and white population health. Medical providers have been shown to discriminate against racial and ethnic minorities, which leads to racial health disparities and disengagement from the medical system, except for emergency care.[35] When it comes to flu vaccination, publica health workers in recent decades aimed to increase flu vaccination, designating many Black

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[33] Sandra Crouse Quinn et al., "Exploring Racial Influences on Flu Vaccine Attitudes and Behavior…" *Vaccine* 35 (2017) 1167-1174; Brook E. Harmon et al., "Filling the Gaps: The Role of Faith-Based Organizations in Addressing the Health Needs of Today's Latino Communities," *Journal of Religion and Health* 60 (2021), 1198-1213. In the news, see Allison Levine and Bobbi Sherman, "Barriers to the Flu Vaccine in Communities of Color Are Layered," *Denver 9 News*, November 25, 2020.
[34] Conis, *Vaccine Nation*, 46.
[35] Matthew, *Just Medicine*, 4.

communities as "hard-to-reach."[36] The term was both dispositional and logistical. As a disposition, it described hesitancy borne from structural racism and distrust of biomedical interventions.[37] Logistically, it described a lack of resources—the time, money, insurance, transportation, or childcare—required to obtain adequate medical care, particularly preventative care. Taking both dispositions into account, public health initiatives focused on concrete outcomes—increasing flu vaccination rates in "hard-to-reach" communities. To do so, officials often turned to religious leaders for help, shifting medical care and counseling away from traditional healthcare settings and into institutions deemed to be more trustworthy and safer.

Predominantly Black churches were common sites for flu vaccination initiatives.[38] Researchers worked with and trained clergy members and community organizers in underserved neighborhoods to promote the medical benefits of receiving a flu shot to parishioners. Beginning in 2001 with the establishment of the White House Office of Faith-Based and Community Initiatives under the George W. Bush administration, the

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[36] Ruha J. Benjamin, *People's Science: Bodies and Rights on the Stem Cell Frontier* (Palo Alto, CA: Stanford University Press, 2013), 152; Mimi Kiser et al. "A National Network of Public Health and Faith-Based Organizations to Increase H1N1 Influenza Prevention Among Hard-to-Reach Populations," *American Journal of Public Health* 109, no. 3 (March 2019), 371-377.

[37] Victim-blaming characterizes subtle medical racism. W. Michael Byrd and Linda A. Clayton, *An American Health Dilemma: A Medical History of African Americans and the Problem of Race: Beginnings to 1900* (New York: Routledge, 2000), 51.

[38] Susan Hiland, "Free Flu Shots Given at Church," *Daily Republic*, October 26, 2014; Ariana Mount, "Physical and Spiritual Health: Local Church, DPH Give Free Flu Shots," *WTGS Savannah*, December 13, 2020; Andrea K. McDaniels, "Study: African-Americans Don't Trust Flu Vaccine; Whites Don't Think Flu Is That Bad," *The Baltimore Sun*, March 25, 2017; "Public-Private Coalition Launches Campaign to Educate Black Community on Importance of Flu Vaccination," Center for Sustainable Health Care Quality (October 14, 2020). Most public health literature refers to churches who have predominantly African American membership as the singular "Black Church." This phrasing lacks historical and sociological nuance and does not acknowledge the diversity of Black Americans, as it refers only to African Americans who are descended from enslaved peoples and presumes a monolithic Christian tradition for Black people.

concept of faith-based initiatives had caught on within the field of public health.[39] Just as the evangelical purity organization Silver Ring Thing received millions of dollars in federal grant money to preach abstinence—effectively dissuading young people from receiving the HPV vaccine—other Christian groups, interfaith organizations, and university-faith cooperative programs used federal funds to bring flu vaccines to churches, barbershops, and pharmacies in medically underserved locations at the beginning of each flu season.[40] Black Americans, Latinx Americans, and other people of color were often the focus of hyper-local, community-based public health interventions, such as pop-up flu vaccination clinics.[41]

In June 2009, as a swine flu (H1N1) epidemic loomed, the White House Center for Faith-Based and Neighborhood Partnerships asked the Interfaith Health Program at Emory University for help with prevention in ten underserved locations across the country. In response, the Interfaith Health Program launched the Influenza Initiative, in which public health teams formed partnerships with churches and other places of worship "[to] address barriers of income, legal and historical mistrust, culture and language, and

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[39] Under the Obama Administration, this office was renamed as the Office of Faith-Based and Neighborhood Partnerships. On faith-based initiatives, see Robert G. Brooks and Harold G. Koenig, "Crossing the Secular Divide: Government and Faith-Based Organizations as Partners in Health," *International Journal of Psychiatry in Medicine*, 32, no. 3 (2002): 223-234; Jeff Levin, "Faith-Based Initiatives in Health Promotion: History, Challenges, and Current Partnerships," *American Journal of Health Promotion* 23, no. 3 (January/February 2014): 139-141.

[40] This became common practice for Covid-19 shots when they were rolled out to the public in 2020. Deborah Barfield Berry, "Covid Vaccine Sites: Churches Offer Vaccinations to Help U.S. Rollout," *USA Today*, February 24, 2021; Jennifer Brooks, "Minnesota Churches Build Faith in COVID-19 Vaccine, Give Shots of Hope to Those in Need," *Minnesota StarTribune*, February 27, 2021; Adam MacInnis, "Black Churches Step in to Help Distribute COVID-19 Vaccine," *Christianity Today*, January 24, 2021.

[41] Thomas LaVeist, "Dean LaVeist On Black Americans Overcoming a Mistrust of Vaccines," *Tulane School of Public Health Blog*, May 24, 2021. LaVeist describes "vaccine deserts," in which "communities that are poor, rural, Black, or some combinations thereof, are not able to physically access the vaccines."

geographic isolation."[42] Included in the ten sites were the Penrose-St. Francis Mission Outreach in Colorado Springs, the Methodist Bonheur Healthcare network based in Memphis, which reached 25,000 people with prevention messages through their 400-church network, and the Buddhist Tzu Chi Medical Center in Los Angeles, which trained and placed volunteers at forty-six Public Health Department clinics throughout the city and provided 72,000 H1N1 shots.[43] This initiative capitalized on the logistical capabilities of religious organizations and congregations, as well as their social uplift missions, to provide preventative care. Churches serving predominantly Black and Latinx populations also started their own flu-prevention initiatives in cities such as Baltimore and Memphis.[44] Programs such as Choose Healthy Life partnered with the Black Clergy Health Council, led by clergy members and social justice activists Al Sharpton and Calvin O. Butts III, to run flu vaccine clinics in Harlem and around New York City. This model—of a non-profit health program partnering with a clerical association—became a popular way to increase vaccine uptake in Black populations.[45]

Religious organizations and houses of worship have served as sources and locations of healing and medical care for most of human history.[46] For example, early

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[42] Mimi Kiser et al. "A National Network of Public Health and Faith-Based Organizations to Increase Influenza Prevention Among Hard-to-Reach Populations," *American Journal of Public Health* (2010), 372.
[43] Mimi Kiser and Scott Santibanez, "Influenza Pandemic," in *Religion as a Social Determinant of Health*, ed. Ellen Idler (New York: Oxford University Press, 2014): 382-395.
[44] Centers for Disease Control and Prevention, "Baltimore African American Community Flu Shot Campaign" (November 16, 2020).
[45] LaPrincess C. Brewer and David R. Williams, "We've Come This Far by Faith: The Role of the Black Church in Public Health," *American Journal of Public Health* 109 (March 2019): 385-386; K.T. Bond, et al., "Resources and Interest Among Faith Based Organizations for Influenza Vaccination Programs," *Journal of Immigrant and Minority Health* 15 (2013): 758-763.
[46] Andrew Crislip, *From Monastery to Hospital: Christian Monasticism and the Transformation of Health Care in Late Antiquity* (Ann Arbor, MI: University of Michigan Press, 2005).

Christian saints' shrines offered healing miracles, entire medieval monasteries and clerical orders were devoted to healthcare, and, in the United States, both Christian and Jewish denominations built and affiliated themselves with hospitals.[47] In fact, the separation of religion from mainstream medical care is a relatively recent intervention due to the agnostic nature of science. Yet, we see public health officials turning to the resources afforded by religious organizations time and again to find the "hard-to-reach."

In December 2020 at the Connor's Temple Baptist Church in Savannah, Georgia, Pastor Thomas Sills stood outside his church, enjoining the community to get vaccinated. He told assembled reporters, "I'm not just worried about the spiritual aspect of our members, I'm worried about their physical being as well."[48] Partnering with the local health department and a CDC-funded group called Healthy Savannah, Sills had opened his church to hold a flu vaccine clinic. In the tradition of presidents receiving their flu shots in front of news cameras, Sills performed his civic health duty by getting his flu shot publicly. He explained, "If I want to be a leader, I have to lead."[49] In this act, Sills and other Black clergy who partnered with public health organizations participated in a long tradition of Black churches functioning as the centers of social provision within communities.[50] Bypassing mainstream and public institutions has often been the most

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[47] Levin 2014; Davis 2020; Jay P. Dolan, *The American Catholic Experience* (New York: Doubleday,1985), 330.
[48] Mount, "Physical and Spiritual Health."
[49] Mount, "Physical and Spiritual Health."
[50] Evelyn Brooks Higginbotham, *Righteous Discontent: The Women's Movement in the Black Baptist Church, 1880-1920* (Cambridge, MA: Harvard University Press, 1994); Barbara Dianne Savage, *Your Spirits Walk Beside Us: The Politics of Black Religion* (Boston: Belknap Press, 1998); Judith Weisenfeld, *African American Women and Christian Activism: New York's Black YWCA, 1905-1945* (Cambridge, MA: Harvard University Press, 1998).

expedient way to spread public health resources. However, church-based vaccine clinics only addressed imminent crises by focusing on how to vaccinate as many people as quickly as possible. These initiatives traded on the trust and authority conveyed by religious leaders and settings. They did not improve the root causes of Black vaccine hesitancy.[51]

In the essay "Debunking Flu Shot Myths While Skeptic and Black," Imadé Borha, a social justice and mental health advocate, recounted a childhood memory of watching her mother suffer through the flu after receiving the flu shot. "Just from what I saw, I was determined to never get a flu shot out of fear of getting the flu," Borha wrote.[52] Years later as an adult, Borha learned about racial flu shot disparities, as well as dangerous complications of influenza that are particularly common in communities of color. These facts were hard to square with her childhood experience of "living in a bubble, where my family [was] apathetic at best when it [came] to getting flu shots…[and we were] insulated from [these] disturbing fact[s]."[53] As Borha dug into the roots of her skepticism, she realized that her mother's illness had been a cold, which would not have been caused by the flu shot. Her family's apathy had been fueled by distrust of the medical system.

Borha quoted the work of Sandra Crouse Quinn, a researcher at the University of Maryland, who studied racial disparities in flu vaccine rates. Quinn concluded that people

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[51] Similar programs have been launched in a variety of cities in barbershops, which also serve as safe and trusted spaces for marginalized communities. See Community Alliance for Research and Engagement, "Press Release: CARE Obtains $180,000 Federal Grant to Lead Community Awareness Campaign on Flu Vaccine" (October 1, 2020); Bethany Swain, "Voices from the Barbershop: Coronavirus Edition." Accessed October 30, 2021. https://vimeo.com/473024675/c976556ddd

[52] Imadé Borha, "Debunking Flu Shot Myths While Skeptical and Black," *Fredrick News Post* (November 20, 2017).

[53] Borha, "Debunking Flu Shot Myths."

who identified as white had "significantly higher" trust in the flu vaccine and the vaccination process, as well as a higher perceived risk of contracting influenza and a lower perceived risk of vaccine dangers or side effects. In contrast, those who identified as African American perceived a higher risk of vaccine side effects, particularly contracting the flu *from* the vaccine, and a lower risk of catching the flu. In short, flu shot hesitancy myths were racialized.[54] The higher the "racial consciousness" of an individual person of color in a healthcare setting, the higher her vaccine hesitancy. In other words, the more that racial and ethnic minorities took race into account in their vaccine decision-making, the less likely they were to vaccinate.[55]

Medical racism infiltrates doctor-patient relationships and often stymies the abilities of Black people to maintain continuity of care or to develop trust in healthcare providers.[56] Historian John Hoberman has argued that medical racism is insidious because it is euphemized as "patient preference" in clinical notes and medical journals to account for a Black person opting out of a flu shot, for example. When doctors use this language, it elides the realities of medical racism. In effect, it presents the unintended façade of a colorblind medical care, reducing socially mediated, rational distrust to the level of individual preference.[57]

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[54] Quinn et al., "Exploring Racial Influences," (2017). I use "African American" here to replicate the study's own language and specificity.
[55] Quinn, et al. "Exploring Racial Influences," (2017), 1167; Tammy A. Santibanez et al. "Reasons Given for Not Receiving an Influenza Vaccination, 2011-2012 Influenza Season," *Vaccine* 34 (2016): 2671-2678.
[56] Hoberman, *Black and Blue: The Origins and Consequences of Medical Racism* (Berkeley, CA: University of California Press, 2012), 20.
[57] Hoberman, *Black and Blue*, 49. For a broader discussion of the pitfalls of colorblind racism, see Eduardo Bonilla-Silva, *Racism Without Racists* (Lanham, MD: Rowman & Littlefield, 2018).

For decades, clinical trials for new pharmaceuticals lacked diversity in their participants which, through the 1980s, were dominated by white, middle-aged, married, cisgender men.[58] By the early 2000s, clinical trial diversification and inclusiveness became expected best practices, prompting the rise of "recruitmentology."[59] However, recruitmentology, which sociologist Steven Epstein defines as the science of recruiting diverse participants to advanced clinical trials, has been a double-edged sword. Although inclusiveness would seem to be a laudable goal, in the field of medicine it requires essentializing identity characteristics such as race, ethnicity, and gender.[60] Because race is a socially constructed identity classification, applying it to biological studies creeps into the territory of scientific racism.[61] How different are black and white bodies, for example? While the prevalence of certain genes may be higher in different races due to historical circumstances, including geography, enslavement, migration, and segregation, among others, there are not essentially white or Black genes. Representation, or inclusion, can perpetuate harmful stereotypes about raced bodies bearing biological differences. Known as "scientific racism," it has historically been employed to argue that black bodies are inferior or have higher tolerances to pain, to justify slavery and violence.

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[58] G. Marie Swanson and Amy J. Ward, "Recruiting Minorities Into Clinical Trials: Toward a Participant-Friendly System," *Journal of the National Cancer Institute* 87, no. 23 (December 6, 1995).
[59] Steven Epstein, "The Rise of 'Recruitmentology': Clinical Research, Racial Knowledge, and the Politics of Inclusion and Difference," *Social Studies of Science* 38, no. 5 (2008): 801-832. Jill A. Fisher examines the racial dynamics of Phase 1 clinical trials, which are disproportionately filled with Black and Latino people who participate serially as a means of employment due to poverty. Given the early-stage participation, they are subject to medical "adverse events" at a higher rate than later-stage clinical trial participants, who tend to be white. See Fisher, *Adverse Events: Race, Inequality, and the Testing of New Pharmaceuticals* (New York: New York University Press, 2020).
[60] Steven Epstein, *Inclusion: The Politics of Difference in Medical Research* (Chicago: The University of Chicago Press, 2007).
[61] W. Michael Byrd and Linda A. Clayton, *An American Health Dilemma* (New York: Routledge, 2000), 35.

Its legacy has continued even into the genomic era.[62] However, the assumption of essential differences between Black and white bodies is pervasive, including *within* populations of color. As a result, lack of representation in trials, or a perceived lack thereof, compounded mistrust about the safety and applicability of biomedicine and pharmaceuticals for Black people and their bodies. Again, racial consciousness increases vaccine hesitancy.

In an episode of the "The Black Health Academy" podcast, host Lisa Smith discussed with her cohost a few reasons why both planned to refuse the Covid-19 vaccine, which, like the flu shot, is optional and was first geared toward adults. Among them was the concern that not enough Black people were involved in the clinical trials to determine if the vaccines were safe for people of color. The hosts agreed that Black people's bodies were different from white bodies and therefore should be adequately represented in the trials. The women's conversation took a turn in which both expressed skepticism about "one-size-fits-all" metrics used for diagnosing diseases, determining the safety of medications, and performing other medical interventions. Vexed, Smith explained:

> Yeah, I feel [wary] about the way [doctors] say things like 'you have diabetes' or 'you have high blood pressure.' I don't understand. How is this scaled the same across the board? If you hit this number, you're diabetic, if you have this marker, you have high blood pressure. Age is not taken into consideration, your ethnicity, like nothing is taken into consideration. Based on who you are, you could have been considered diabetic years ago but because they're using their test scale, they're waiting for you to get *here* [a given metric] to tell you you're diabetic.[63]

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[62] Jennifer Hochschild, "Race, Racial Inequality, and Biological Determinism in the Genetic and Genomic Era," *The Annals of the American Academy of Political and Social Science* 661, no. 1 (September 2015); Roberts, *Fatal Intervention*, 27.

[63] Lisa Smith, "Vaccine or Nah?" The Black Health Academy Podcast (February 13, 2021).

Smith's argument was that medicine was not racially inclusive enough, yet her logic relied on essentialized categories of race and biological determinism. These complicated beliefs and embodied effects of racism continue to pervade medical decision-making, including about vaccination.

Medical racism has persisted because scientific theories and medical practices have perpetuated harmful and outdated understandings of race as a natural, biological determinant of health, intelligence, and worth.[64] It is no surprise that as journalist Harriet A. Washington, has argued, Black Americans approach the medical system with a "perception of evil."[65] If decades, or even centuries, of ingrained knowledge of inhumane treatment is physically embodied by Black people, perceiving the system as "evil" makes perfect sense, even if it means abstaining from routine care.[66] Sociologist Ruha J. Benjamin has found that Black Americans expressed both "interpersonal" and "societal" distrust of medical care, clinical research, and claims that the biomedical approach is unbiased.[67] Benjamin has argued that Black distrust of medical care should be "depathologized," not only because it is a rational response to injustice, but also because continuing to pathologize it as abnormal or unfounded perpetuated damaging racialized stereotypes. Even in public health research, Black people were commonly portrayed using a "deficit model," meaning that they lack scientific and medical literacy and are

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[64] Roberts, *Fatal Invention*, 28.
[65] Harriet A. Washington, *Medical Apartheid: The Dark History of Medical Experimentation on Black Americans from Colonial Times to the Present* (New York: Doubleday, 2007), 15.
[66] Ruha J. Benjamin, *The People's Science*, 138. Benjamin argues that this distrust is "rational and agentic."
[67] Ruha J. Benjamin, *People's Science: Bodies and Rights on the Stem Cell Frontier* (Palo Alto, CA: Stanford University Press, 2013), 136.

therefore resistant to "proper" medical care.[68] This framework has informed public health initiatives to quell flu vaccine-hesitancy among the "hard-to-reach."

When diagnosing racial disparities in healthcare, commentators and scholars have tended to reference instances of medical violence committed against Black people in the name of scientific discovery and innovation.[69] In scholarly and journalistic explanations of Black mistrust of the medical system, three examples of medical racism are most often cited.[70] The first is the United States Public Health Service Syphilis Study at Tuskegee (1932-1972). Without informed consent, researchers compared a cohort of four hundred Black men who were infected with syphilis to a cohort of two hundred Black men who were not. All were told they were being treated for syphilis when in fact they were only being monitored for symptoms of syphilis, not treated. In the 1940s when penicillin was determined to be the best treatment for syphilis, members of the study were not medicated, and they were often prevented from receiving treatment.[71] This experiment, which sought to "determine the natural course of untreated, latent syphilis in black

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[68] Benjamin, *People's Science*, 152; Ruha J. Benjamin, "Race for Cures: Rethinking the Racial Logics of 'Trust' in Biomedicine," *Sociology Compass* 8, no. 6 (2014): 760.

[69] Roberts, *Fatal Invention*, 27. Ruha J. Benjamin argues that these techniques of repression are disguised and encoded in new technologies, perpetuating the "New Jim Code." See Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Boston: Polity Books, 2019).

[70] J. Wasserman et al., "Raising the Ivory Tower: The Production of Knowledge and Distrust of Medicine Among African Americans," *Journal of Medical Ethics* 33 (2007): 177-180. Examples are often mischaracterized in mainstream media, either via incorrect information about the events or in perpetuating a false narrative of individual evil medical actors. Wasserman et al. conclude that these examples reflect a far broader racist history of medicine.

[71] Allan M. Brandt, "Racism and Research: The Case of the Tuskegee Syphilis Experiment" in *Tuskegee Truths*, ed. Susan M. Reverby (Chapel Hill, NC: University of North Carolina Press, 2000), 15.

males" was in progress for fifty years before it was terminated after a journalistic exposé.[72]

The second historical example is that of the "immortal cells" of Henrietta Lacks, a Black woman whose cervical cancer cell tissue was extracted by her doctors at Johns Hopkins Hospital in 1951 as she was receiving treatment.[73] Without her knowledge or consent, Lacks' cells were sent to researchers who found that they replenished daily, while other cells died. Named "HeLa" cells in homage to Lacks, her tissue has been used in countless experiments to develop treatments for cancers, in vitro fertilization, infectious diseases, and other medical conditions for over seventy years.[74] HeLa cells were also used in the development of the polio vaccine and in the discovery of how human papillomaviruses can cause cervical cancer, helping scientists create the HPV vaccines.[75] Lacks was never told of her "donation" and neither she, nor her family or descendants, were compensated financially despite the immeasurable profits incurred by her cells.

Last, and least well known, were the dozens of gynecological experiments and surgeries performed on Black enslaved women without anesthesia by physician James Marion Sims during the mid-nineteenth century. Sims, a Southern slaveholder, is credited with inventing the vaginal speculum used in gynecological examinations, as well as a

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[72] In 1997, President Bill Clinton offered survivors of the Tuskegee experiment a federal apology. "The Tuskegee Timeline," Centers for Disease Control and Prevention, Last reviewed April 22, 2021, https://www.cdc.gov/tuskegee/timeline.htm, Accessed September 2, 2022.
[73] Johns Hopkins Medicine, "The Legacy of Henrietta Lacks." https://www.hopkinsmedicine.org/henriettalacks/
[74] Editorial Board, "Science Must Right a Historical Wrong," *Nature* (September 1, 2020).
[75] Jennifer Kaylin, "The Virus Behind the Cancer," *Yale Medicine Magazine* (Spring 2006); Leah Samuel, "Five Important Ways Henrietta Lacks Changed Medical Science," *STAT* (April 14, 2017).

surgical technique for repairing fistulas, a common result of childbirth.[76] Although Sims was lauded in the medical field, including in textbooks, for over a century, his legacy came under critique by women's rights activists during the 1960s and 1970s.[77] The Black Lives Matter movement of the 2010s prompted a recentering of Black people's lived experiences in history, causing Sims' legacy to be further reexamined, including having statues of him removed in places such as New York City's Central Park.[78]

While these historical examples of human harms committed in the name of medical discovery are often cited in scholarly and journalistic accounts as causes for Black skepticism toward vaccines, public health researchers have found that they are *not* the most common reasons provided by Black people when surveyed about their attitudes toward the flu shot or their intention (or lack of intention) to get one. Yet, these historicized retellings of three tangible examples of medical racism serve a powerful rhetorical purpose, especially when combined. They are an explanatory myth narrating and explaining Black vaccine-hesitancy as rational and understandable to non-Black vaccine proponents. In other words, these historical narratives portray Black hesitancy as a problem that can be solved with finer-tuned resources.[79]

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[76] Brynn Holland, "The 'Father of Modern Gynecology' Performed Shocking Experiments on Enslaved Women," History.com, https://www.history.com/news/the-father-of-modern-gynecology-performed-shocking-experiments-on-slaves, Accessed October 25, 2021.
[77] Ehrenreich and English, *For Her Own Good*, 137.
[78] Sarah Zhang, "J. Marion Sims, the Gynecologist Who Experimented on Slaves," *The Atlantic* (April 18, 2018); Sara Spettel and Mark Donald White, "The Portrayal of J. Marion Sims' Controversial Surgical Legacy," *Journal of Urology* 185 (June 2011), 2424-2427.
[79] April Dembosky, "No, the Tuskegee Study Is Not the Top Reason Some Black Americans Question the COVID-19 Vaccine," NPR KQED (February 25, 2021); April Dembosky, "It's Not Tuskegee: Current Medical Racism Fuels Black Americans' Vaccine Hesitancy," *Los Angeles Times*, March 25, 2021.

**The Conspiracy of Synthetic Immunity**

In 2004-2005 and 2009, outbreaks of pandemic flu were detected in Asia, causing scientists to scramble to create vaccines. In a post-9/11 world, the threat of bioterrorism also loomed large for the Department of Homeland Security, and many feared that a pandemic virus might be intentionally unleashed as a form of terrorism. As a result, the avian flu (H5N1) and the swine flu (H1N1) were both hyped heavily in the media as particularly virulent mutations that could spread quickly and kill millions of people.[80] Flu shot skeptics, including public-facing doctors Russell Blaylock, Joseph Mercola, and Sherri Tenpenny all lambasted the specter of these pandemics, spinning the theory that epidemics were invented by a cabal of health organizations, pharmaceutical companies, and the government to sell profitable vaccines to the scared public. Even if the viruses were "real," their dangers were inflated and it was unnecessary to get vaccinated, they warned. In 2006 after the avian flu scare did not erupt, both Mercola and Tenpenny published books on the topic, referring to it as a hoax.

Mercola, an osteopathic physician who stopped treating patients in 2009, *New York Times* best-selling author, and the founder of Mercola.com, an alternative healthcare website which publishes inflammatory medical news and sells dietary supplements, grew highly influential. In 2010, Mercola earned $7 million through his website and personal company, and his website had 2 million visitors per month.[81] In *The Great Bird Flu*

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[80] James Sturcke, "Bird Flu Pandemic 'Could Kill 150 million,'" *The Guardian*, September 30, 2005.
[81] Katie Knibbs, "The Most Honest Man in Medicine?" *The Ringer*, January 5, 2017; Tara Parker-Pope, "Why Are We Afraid of the New Flu Vaccine?" *New York Times*, October 7, 2009; Mary Platts, "Doctors Demand the Removal of Anti-Vaccine Ad from Times Square," *The Guardian*, April 18, 2011; Bryan Smith, "Dr. Mercola: Visionary or Quack?" *Chicago Magazine*, January 31, 2012; Julia Carrie Wong,

*Hoax*, Mercola wove together a series of causal events resulting in the 2005 Homeland Security Council proposal, "National Strategy for Pandemic Influenza," which asked Congress for $7.1 billion to prevent pandemic influenza by developing new vaccines and antiviral drugs.[82] Mercola alleged that many components, including for-profit media propaganda, mortality inflation, vertical integration of "Big Agriculture," worldwide abuse of poultry chickens, the development of the new antiviral drug Tamiflu, and the dismissal of natural cures for common illnesses by medical doctors were all part of a singular strategy deployed by the government to sell vaccines.

> If you're wondering why the CDC would inflate the number of flu deaths, keep in mind that the more people they can frighten into getting their flu shot, the greater profits for the vaccine manufacturers. If you believe the CDC's primary intention is to protect public health, you're wrong. Their goal seems more aligned with distorting disease data to convince more people that getting a flu shot makes sense. The CDC has an actual 'recipe' for increasing flu shot demands. The ingredients include: Concern, Anxiety, Fear.[83]

The 2005 avian flu did not manifest in the pandemic that had been predicted, much like the swine flu fiasco. Yet, the aftermaths were different. Mercola's interpretation of the events surrounding the scare were far more damning than any that emerged in 1976 and the years directly following. While the swine flu affair contributed to burgeoning mistrust of the government and public health initiatives, figures such as Mercola radicalized many followers by conflating healthcare with corruption.

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"Anti-Vaxx Propaganda Has Gone Viral on Facebook. Pinterest Has a Cure," *The Guardian*, February 21, 2019.

[82] Congress passed a $3.8 billion measure for flu pandemic prevention in 2005. Homeland Security Council, "National Strategy for Pandemic Influenza," United States Government, November 2005, https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-strategy-2005.pdf, Accessed September 2, 2022; Robert Roos, "Year-End Review: Avian Flu Emerged as High-Profile Issue in 2005," Center for Infectious Disease Research and Policy (January 6, 2006).

[83] Joseph Mercola, *The Great Bird Flu Hoax* (Nashville, TN: Thomas Nelson, 2009), 14.

Similarly, Tenpenny's book, *Fowl! It's Not What You Think* presented the avian flu scare was an indictment of corporate greed, the military-industrial complex, environmental pollution, war chemicals, agribusiness, and animal abuse as the sources of H5N1. Beginning with the question, "Who wants all the chickens dead?" referencing the mass culling of chickens in an effort to stop the spread of the disease, Tenpenny concluded:

> Governments have chosen to push an agenda that invokes fear of H5N1 instead of investigating the associations between the environment and the bird flu virus, and then holding the global polluters—chemical companies, drug companies, agribusinesses, and promoters of war—accountable.[84]

Throughout the book, Tenpenny systematically advanced her case using statistics, historical facts, and organizational charts bolstered by moral claims. For the uninitiated reader, any one of the facts she presented could well be true. The narrative was convincingly complicated. However, on the last page, Tenpenny provided a caveat: this was all "just a theory"—something that should be "looked into."[85] The brief admission was buried. Readers never learned who really wanted the chickens dead, but the takeaway was that they were not being told the truth by the institutions in charge of their health and wellbeing. Tenpenny published numerous books about how to decline the flu shot in a medical care setting and produced eight documentary films about the dangers of flu shots. Tenpenny also lobbied state legislatures and testified against bills that would mandate flu shots for healthcare workers. Her argument was that requiring healthcare workers to be vaccinated would violate their medical rights, forcing them to subject their

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[84] Sherri J. Tenpenny, *Fowl! It's Not What You Think* (Independently Published, 2006), xv; 241.
[85] Tenpenny, *Fowl!*, 24.

bodies to substances they believed to be dangerous.[86] This sort of conspiracy theorizing started to become part and parcel of vaccine hesitancy. Interestingly, it often went along with a desire to maintain a natural body and lifestyle which advocates believed corporations were stripping away from them.

Throughout the early 2000s, natural health and alternative medicine became increasingly mainstream, compared to the earlier era of the natural health and natural mothering movements that began in the 1960s and 1970s. Although concepts and embodied practices of "going natural," detoxing, and purifying had been most associated with liberal, coastal, upper- and middle-class white women and "crunchy" hippies, they resonated more broadly. Many people carried underlying anxieties about the power of "Big Agriculture," "Big Pharma," the biomedical establishment, and the prevalence of chronic diseases, leading them to consider alternatives.[87] An offshoot of this expanded movement stretched out to the Right, defined by libertarian values, ardent individualism, and distrust of elites.[88] This subculture relied on different authorities for health news,

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[86] Sherri J. Tenpenny, "In Support of HB 193," State of Ohio (June 6, 2017), https://search-prod.lis.state.oh.us/cm_pub_api/api/unwrap/chamber/132nd_ga/ready_for_publication/committee_docs/cmte_h_commerce_1/testimony/cmte_h_commerce_1_2017-06-06-0130_558/hb193protenpenny.pdf, Accessed October 24, 2021.

[87] The conservative-alternative health movement has earlier roots in organizations dedicated to "health freedom" and "medical liberty," which lobbied Congress in the 1970s for the right to buy vitamins, health food products, and herbal supplements in many of the same ways as they did to avoid mandatory vaccinations. Americans on both ends of the political spectrum, from hippies to John Birch Society members, found common moral ground in their opposition to regulation over products sold for health-improvement. With the Proxmire Amendment (1976), and again with the Health Freedom Act (1993), federal legislators sided with consumers in minimizing regulations of vitamins and other health products, in favor of giving people the opportunity to self-medicate or "take care of themselves" without consulting a medical expert. See Rima D. Apple, *Vitamania* (New Brunswick, NJ: Rutgers University Press, 1996).

[88] Kathleen Bewer, "The Crunchy-to-Alt-Right Pipeline," *The Atlantic*, December 14, 2022; Rod Dreher, *Crunchy Cons* (New York: Crown Forum, 2006); Kate Knibbs, "The Most Honest Man in Medicine?" *The Ringer*, January 5, 2017. Some "preppers" also fall into this category. Mira Ptacin, "I Am Not a Housewife, I Am a Prepper," *New York Times*, September 24, 2020.

many of whom spun threads of distrust into webs of conspiracy, fearmongering, and misinformation. The flu shot lay in this web—an ideal punching bag for budding public figures in a "conservative-alternative health movement." Some of the most influential figures were Joseph Mercola, Sherri Tenpenny, Sayer Ji, and Alex Jones, and doctors prominently featured on Fox News, Newsmax, and InfoWars. In their discourses, the flu shot symbolized corruption in the biomedical establishment. In the conservative-alternative medical world, mainstream medicine was not only disparaged as unhealthy, but it was also politicized as liberal and villainized as immoral.

Conservative-alternative health discussions opposing influenza vaccination during the early 2000s extolled natural immunity as superior to the "synthetic immunity" built by vaccines. The allure of natural immunity had captured the imaginations of vaccine skeptics since the nineteenth century era of smallpox inoculations. Overcoming disease "the natural way" had been a sign of spiritual strength, and it was thought to provide heartier protection against the disease in the future. In the twenty-first century, some natural health websites used much the same reasoning regarding the flu vaccine. Conservative-alternative health writers raised the specter of synthetic immunity and toxic ingredients, pitting the natural against the phony in a battle over the sacrality and integrity of human biology and, consequently, the integrity of medical experts.[89]

[89] Rick Perlstein, "The Long Con," *The Baffler*, November 2012. Perlstein argues that conservative alternative health news is part of a long-running "strategic alliance of snake-oil vendors and conservative true believers" in which "the ideological and the transactional share the exact same vocabulary, moral claims, and cast of heroes and villains."

Natural health, as it was described and prescribed to followers online, was a moral framework—a set of ideas about good and bad. While the specific words and modalities varied by practitioner, conservative-alternative health leaders explicated a core belief structure, quite similar to that of other naturalists. At the heart of natural health was the belief that nature was essentially good and that it manifested vitality, the spark of unfettered life.[90] Imbued with moral authority, nature was anthropomorphized as having innate healing capabilities. It was wise, sensical, and balanced.[91] This wise order was simultaneously so simple as to be innately knowable and yet so complicated as to be divinely created. Juxtaposed with science and biomedicine, nature was holistic and all-encompassing rather than reductive or atomistic. For those who ascribed to a natural health lifestyle or mindset, health was the result of an individual striking a perfect balance with nature's rhythms and rituals. For the naturalist, someone caught a cold or developed an incurable disease *for a reason*. The reason was disharmony, an imbalance between the self and nature.[92] In this worldview, naturalism was optimistic and self-evident—if one was in touch with nature and reading its signs—whether a passing stomachache or a bout of the flu—she would find the tools to correct the imbalance. In contrast, biomedicine was unnatural because it was inscrutable. People were disconnected from their bodies and relied on complicated technologies to discern the causes of their ailments, which seemed random. As an ideal, naturalism's emphasis on holism—of body,

[90] Levinovitz has argued that "natural" is a religious concept connoting holiness. Levinovitz, *Natural*, 4. Also see James C. Whorton, *Nature Cures: The History of Alternative Medicine in America* (New York: Oxford University Press, 2002), 291.
[91] Miller, *Building Nature's Market*, 15, 115.
[92] Levinovitz, *Natural*, 121.

of society—allowed disease to be remedied or prevented using the tools nature provided. Accordingly, a person could prevent sickness by performing rituals using natural remedies and lifestyle means. Doing so was morally virtuous. Just as a Catholic can be Catholic without attending Mass regularly or a Jew can be Jewish without believing in God, those who ascribed to naturalism or holism practiced it in some contexts and not others. Naturalism was a shared culture with its own vocabulary, practices, and moral community.

For naturalists the conception of nature as "good" has been so culturally ingrained that it is easy to forget that even "nature" is a historically contingent concept—constructed and viewed differently by various cultures and contexts. It could be equally logical for nature to be frightening or unruly, and throughout history it has often been considered base, savage, unrefined, and unjust. Writing in 1989, British cultural critic Rosalind Coward commented on the changing perceptions of nature as good and technology as bad. She wrote, "To place science, industry, and technology in consistent opposition to nature is to make nature an entirely imaginary place, without any human society…[a] fantasy."[93] This astute rendering of nature as a land or state of fantasy explains the logic of vaccine skeptics who idealized "natural immunity" as an aspirational concept.

During the 2010s, naturalists who published on "natural health" websites popular among conservative-alternative health followers often overtly opposed to vaccines. They employed two main concepts to distinguish between "technologically induced immunity"

[93] Rosalind Coward, *The Whole Truth: The Myth of Alternative Health* (London: Faber & Faber, 1989), 22.

and the "natural immunity" one developed from successfully fighting a disease. First, anything "synthetic" was unnatural, wrong, and even immoral. And second, the human body was designed intelligently by a divine power and did not need biomedical intervention to be healthy. In a 2012 post on GreenMedInfo entitled "Vaccination Agenda," the website's founder, Sayer Ji, asked "Can vaccines really co-opt, improve upon, and replace natural immunity with synthetic immunity? By 'improving' on our humanness in this way, are we not also at the same moment departing dramatically from it?"[94] In the same piece, Ji pushed further, arguing that humans had "strayed from our mammalian roots" by feeding infants formula instead of breastmilk and immunizing babies to create "unnatural" immunity. Ji likened vaccines to a transhumanist project which "intends to improve upon and transcend our humanity and has a close affiliation with some aspects of eugenics."[95] Ji's mentions of transhumanism and eugenics worked emotionally—they evoked fear and implied that getting a flu vaccine was not only unnatural, but also unethical, repulsive, or evil. The remedy? Natural immunity incurred by getting sick. In another post, Ji made this case, explaining, "In a very real sense, periodic infectious challenges are Nature's immunizations, without which the concept of vaccination would make absolutely no sense."[96]

Evangelical Christians started to adopt similar rhetoric during this period. Flu shots were one target of criticism because they represented mainstream medicine. On his podcast in 2020, Ben Edwards, a Southern Baptist, medical doctor, and founder of the

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[94] Sayer Ji, "Vaccination Agenda," *GreenMedInfo*, January 10, 2012.
[95] Ji, "Vaccination Agenda," January 10, 2012.
[96] Ji, "A Shocking Lack of Evidence," *GreenMedInfo,* January 26, 2018.

holistic medical clinic Veritas Medical Group, asserted on an episode of his podcast that getting a flu shot was equivalent to "stewarding poorly on God's design," since the body was made "perfectly."[97] Edwards went on, "God designed your body beautifully. It's not poorly designed, it's not a product of random chance and evolution. It's an amazing immune system…You cannot improve on God's design."[98]

For Edwards' listeners, the message was plain and simple: their bodies were (or should be) up to the task of fighting illness because that was the natural, godly thing to do. Yet, Edwards also educated listeners about ways they could "bolster their immune system," including what he called the "four pillars of health": nutrition, hydration, movement, and peace. Signing off, he entreated, "Be very, very careful with conventionally trained people who don't have a deeper understanding…It's up to you, you're the cure, you're responsible for your own health."[99] For Edwards, people were their own "cures," able to control their health based on the actions they took. During the Era of Controversy, individualism was the currency of vaccine hesitancy. It carried was embedded within the morally beneficent valences of naturalism, representing control, rebellion, and goodness.

In 2015, the National Vaccine Information Council (NVIC) published a newsletter in 2015 outlining the "Common sense ways to prevent influenza," including frequent hand washing, nose and mouth covering, and social distancing from people who

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[97] Ben Edwards, "You're the Cure," Podcast (June 22, 2020), https://medical.veritashealthycommunity.com/podcast/youre-the-cure-june-22-2020, Accessed September 1, 2022.
[98] Edwards, June 22, 2020.
[99] Edwards, June 22, 2020

are sick.[100] Accompanying this ubiquitous messaging was the phrase "common sense," appealing to the individual's intuition. In each of these examples—Ji, Edwards, NVIC—the stark fact of mortality was a glaring absence. For these proponents of natural immunity, the naturalness of individualism entirely obscured the reality, naturalness even, of the mass deaths incurred by epidemic disease, both in the United States and around the world.

Paradoxically, flu shots have received a tremendous amount of media coverage, yet very little public attention. Because of the flu's seasonality and commercialism, the public has often taken the disease for granted. Flu shot success has been plagued by the complexities of influenza itself, causing a baseline skepticism about the risk/reward of receiving a shot each year. As the 2010s wore on, this skepticism exemplified the discrepancies between mainstream medical authority of alternative sources of medical authority. These included pastors and religious leaders who transformed sacred spaces into sites of medical care to overcome the steep mountain of racialized medical injustice, as well as alternative health providers who idealized natural immunity. Conceptions of the natural as good and the synthetic as bad were effectively constructed into identities in which those who follow flu shot recommendations can simultaneously reside in positive and negative moral landscapes depending on the beholder. Nature, and natural immunity, became increasingly spiritually and politically contentious in the 2010s as measles, a disease that was once eradicated, broke out throughout the United States because of under-vaccination.

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[100] National Vaccine Information Council, "Common Sense Ways to Prevent Influenza" (2015).

# Part IV: The Era of Politicization (2015 – )

# CHAPTER SEVEN

## Grassroots Religious Liberty and the Return of Measles

It started in 2014. Seemingly overnight, thousands of twenty-page pamphlets titled "All Your Vaccine Questions Answered," appeared on doorsteps, in mailboxes, and in kosher grocery stores throughout the predominantly *haredi*, or ultra-Orthodox Jewish, neighborhood of Williamsburg in Brooklyn, New York. The illustrated cover depicted a young brunette girl with pigtails sitting alone on a doctor's exam table, hands clasped innocently in her lap. Beside her, as though it was a piece of the office décor, was a small, unassuming logo. "A Project of P.E.A.C.H," it read, with a drawing of a peach standing in for the "C." Below, in minuscule letters, the acronym spelled out "Parents Educating & Advocating for Children's Health." The pages inside were filled with colorful boxes containing cartoons, Q & A's, and parchment scroll graphics. In the first cartoon, thought bubbles emerged from the heads of women dressed in the style of *haredi* mothers—covered hair, long skirts, and stockings—marking them as *frum*, or especially devout. The children were *frum* too, with young boys depicted with side curls emerging from their yarmulkes. The mothers were caring for children with various disabilities, including paralysis, asthma, and autism, and they attributed their children's woes to routine vaccinations.

It was clear that the PEACH pamphlet was intended for *haredi* audiences, tailored to the specific cultural markers of an insular religious community. Yet no one could identify who sent it. PEACH sent at least two more mass mailings in the ensuing years, enforcing festering doubts about vaccines within the *haredi* communities of Brooklyn.

For many parents there, obtaining a religious exemption from mandatory vaccinations for their children seemed to be the safest route to take. By 2019 with fewer children vaccinated, it took only a few travelers carrying measles into Williamsburg to ignite the largest outbreak in the United States in almost thirty years.[1]

Brooklyn was only one of the measles "hotspots" that erupted during the mid-2010s. Hotspots were geographic areas where there was "elevated disease occurrence or risk."[2] Within a few years, measles epidemics hit in middle-class neighborhoods in Seattle and Portland, Oregon, and rural communities in Idaho, Ohio, New Mexico, and Texas.[3] Public health officials became increasingly concerned about the prevalence of hotspots because they indicated vaccine abstention and the loss of herd immunity. Officials educated the public about the percentage of vaccinated people needed to create herd immunity, which varies depending on the transmissibility of diseases and the efficacy of a given vaccine. For example, measles requires roughly ninety-five percent of a population to be vaccinated to achieve herd immunity, whereas polio requires only eighty percent.[4] As outbreaks of these diseases popped up with increasing frequency, epidemiologists determined that hotspots were directly correlated to the number of unvaccinated school-aged children exempted from mandatory vaccination due to

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[1] Lena H. Sun and Ben Guarino, "Anti-Vaxxers Target Communities Battling Measles," *The Washington Post*, May 20, 2019.
[2] Justin Lessler et al. "What Is a Hotspot Anyway?" *American Journal of Tropical Medicine and Hygiene* 96, no. 6 (2017): 1270-1274. Hotspots are characterized by higher transmissibility of an infectious disease, often because of under-vaccination levels.
[3] Yamiche Alcindor, "Anti-Vaccine Movement Giving Diseases a 2nd Life," *USA Today*, April 6, 2014; Maggie Fox, "Anti-Vaccine Hot Spots on Rise Across the U.S., Study Finds," *NBC News*, June 12, 2018; Lena H. Sun, "Kids in These U.S. Hot Spots at Higher Risk Because Parents Opt Out of Vaccination," *The Washington Post*, June 20, 2018.
[4] Carrie MacMillan, "Herd Immunity: Will We Ever Get There?" *Yale Medicine Blog*, May 21, 2021.

religious or philosophical exemption statutes.[5] Concerned about the uptick in vaccine-preventable diseases, many state lawmakers questioned the ethics of these religious provisions and moved to abolish them. Measles was back, and both public health and religious freedom were at stake.

The return of measles attracted scrutiny to unvaccinated children, a socioeconomically, geographically, and religiously diverse population that had been growing quietly and swiftly over a decade. Scrutiny morphed into castigation from the political Left, even alienating progressive voters who were vaccine hesitant.[6] Vaccine-hesitant people began to find common ground on the Right, uniting around fears of state overreach into family life and medical autonomy. What had been a practice for scattered individual families was becoming a trend that took root in openly religious enclave communities. The measles hotspots demonstrated the centrifugal spread of vaccine-hesitant ideas and embodied practices. Progressive, majority white upper-middle class pockets drawn to spirituality and naturalism had common cause with faith healing evangelicals in Texas, ultra-Orthodox Jews in New York, Somali Muslim refugees in Minnesota, and the Amish in Pennsylvania and Ohio. None of these groups had never shared much except that now, during the 2010s, they consumed or propagated misinformation about vaccines and desired or required freedom to live apart from

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[5] Varun K. Phadke et al. "Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States: A Review of Measles and Pertussis," *JAMA* 315, no. 11 (2016): 1149-1158; Sophie Novack, "How Anti-Vaxxers Are Injecting Themselves into the Texas Republican Primaries," *Texas Observer*, February 28, 2018; Sun, "Kids in These U.S. Hot Spots."

[6] Jamelle Bouie, "Conservatives and Liberals Hold Anti-Science Views: Anti-Vaxxers Are a Bipartisan Problem," *Slate*, February 4, 2015; Eoin Higgins, "Not Getting Vaccinated to Own Your Fellow Libs," *The Atlantic*, September 22, 2021.

mainstream society, either physically, culturally, or both. These groups also bumped up against state legal rights to abstain from vaccination and, in many cases, experienced devastating measles outbreaks in their communities.

Yet, in some cases, the separatists found allies, in the newest iteration of the medical freedom movement. During the 2010s, grassroots organizers, mostly mothers, formed or reanimated medical freedom groups in every state. National organizations, such as the Informed Consent Action Network (ICAN) and the Children's Health Defense (CHD), funded by wealthy conservative donors, grew alongside these local grassroots initiatives. The combination of these local and national efforts wove fringe, disparate threads of vaccine skepticism into a cohesive religio-political force, replete with high-level strategists, powerful spokesmen, and donors. The blend of skepticism, external funding, and activism was ripe for politicization and, in some cases, manipulation. It lit a match under the kindling of new state-level repeals of religious exemptions for mandatory vaccination, which legislators proposed to curb the measles outbreaks. In the new Era of Politicization, a public health measure to increase vaccination rates was also a religious liberty issue. State-level religious exemption fights unfolded during a period when fierce national debates over whose religious liberty most needed protection were at the core of culture wars over national identity. Every measles hotspot was a proxy fight between communitarian public health ideals and individual freedoms.[7]

[7] Andrew L. Whitehead and Samuel L. Perry, *Taking America Back for God: Christian Nationalism in the United States* (New York: Oxford University Press, 2022). Whitehead and Perry argue that in the 2010s, "religious liberty" became synonymous with white Christian nationalist interests, in contrast to "religious freedom" which had historically concerned protections for minority religious groups.

**A Brief History of Vaccine Exemptions**

Matters of religious freedom are often legally fraught by definitions of what religion *is*. Although the Framers of the Constitution may have intended for the First Amendment's religious protections to benefit religious minorities, including "nonbelievers," legal interpretations have always been subjected to the biases of those in power. Many scholars of religion and law argue that, despite the capaciousness of the "free-exercise clause" and the guarantee of religious disestablishment of the state, the American legal system exudes a covert, yet "coercive" or "stealth" Protestantism.[8] As the religious majority in the United States, Protestant biases do shape systems of power in such a way that religious, racial, and ethnic minority groups, including secularists and atheists, have been forced to conform to Protestant standards under the law.[9] Protestant Christians typically turn to beliefs rather than rituals or practices to define the boundaries of their own denominations and groups. Regarding religious exemptions to vaccination, stealth Protestantism is most apparent in the legal criteria for what constitutes a suitable religious reason to abstain from vaccines: a "sincerely held belief."[10]

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[8] Janet R. Jakobsen and Ann Pellegrini, *Love the Sin: Sexual Regulation and the Limits of Religious Tolerance* (Cambridge, MA: Beacon Press, 2004), 114; David Sehat, *The Myth of American Religious Freedom* (New York: Oxford University Press, 2011), 54.

[9] Winnifred Fallers Sullivan, *The Impossibility of Religious Freedom* (Princeton, NJ: Princeton University Press, 2005); John Fea, *Was America Founded as a Christian Nation?* (Louisville, KY: Westminster John Knox Press, 2016); Sarah Barringer Gordon, *The Spirit of the Law: Religious Voices and the Constitution in Modern America* (Cambridge, MA: Belknap Press, 2010); Jakobsen and Pellegrini, *Love the Sin* (2004); Tisa Wenger, *Religious Freedom: The Contested History of an American Ideal* (Durham, NC: The University of North Carolina Press, 2017).

[10] Title VII of the Civil Rights Act of 1964 prohibits federal employers from discriminating against employees or potential employees based on "sincerely held religious beliefs." The Equal Employment Opportunity Commission (EEOC) instructs employers to determine sincerity and religion using the broadest of criteria, guided by common sense. In *Sherr v. Northport-East Northport Union Free School District* (1987), plaintiffs sued their school system in New York State over a religious exemption denial

In 1810, Massachusetts became the first state to enact a mandatory vaccination law, shortly after the advent of smallpox inoculations. Because the state was mostly rural, the law authorized local health boards to mandate inoculation or vaccination during smallpox outbreaks, but it stopped far short of a universal mandate.[11] In 1855, the state moved further, passing a school attendance vaccination requirement. Within the next fifty years, eleven states passed vaccination requirements for school attendance. In the watershed United States Supreme Court case of *Jacobson v. Massachusetts* (1906), Pastor Henning Jacobson, a Swedish immigrant, objected to the Cambridge Board of Health's requirement that he and his son receive smallpox inoculations, citing adverse effects from vaccination that had occurred in his home country. Jacobson lost his case, and the Court upheld the right of Massachusetts to compel vaccination. As public health scholars Kevin M. Malone and Alan R. Hinman have explained, the Court's majority opinion acknowledged the potential for vaccination's adverse effects, but it "specifically rejected the notion of an exemption based on personal choice," by reasoning that such exemptions would remove the state's ability to act decisively during epidemics to protect the public's health.[12] The *Jacobson* decision established a legal precedent: vaccination was for the public good, so an individual's personal objections could not interfere in

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because they were not "bona fide members of a recognized religious organization whose teachings are contrary to the practices…required."[10] The court ruled against the State. The only criteria that the State of New York should use to determine if a religious exemption was warranted was "'sincerely held religious beliefs' in opposition to vaccination, whether or not as part of a recognized religion." See Sherr v. Northport-East Northport U. Free Sch. D., 672 F. Supp. 81 (E.D.N.Y. 1987). https://law.justia.com/cases/federal/district-courts/FSupp/672/81/2090837/, Accessed September 5, 2022.

[11] Kevin M. Malone and Alan R. Hinman, "Vaccination Mandates: The Public Health Imperative and Individual Rights," in *Law in Public Health Practice*, eds. Richard A. Goodman et al. (New York: Oxford University Press, 2007), 346; Jess McHugh, "First U.S. Vaccine Mandate in 1810 Launched 200 Years of Court Battles," *The Washington Post*, December 12, 2021.

[12] Malone and Hinman, "Vaccination Mandates," 346.

epidemic mitigation efforts. It also set off a quarter-century of anti-compulsory-vaccination advocacy.[13]

In the late 1960s, with the advent of the MMR vaccine, states used federal funds to implement, and begin to normalize, required school vaccinations. They did so because voluntary vaccination rates were low. Two of President Richard M. Nixon's closest advisers, H.R. Haldeman and John Ehrlichman of Watergate infamy, exerted considerable influence over budgetary allotments. Both men were practicing Christian Scientists, a religious denomination that teaches adherents to pray for and receive healing from illness, not with medical interventions, but through faith in Jesus, known in the tradition as "Jesus Christ, Scientist." Haldeman and Ehrlichman were instrumental in attaching a religious exemption clause to the federal funding that was delivered to individual states. During the 1970s, all states, with the exceptions of Mississippi and West Virginia, formalized religious exemption clauses as their legislatures adopted mandatory school vaccination laws.[14] Seventeen states also adopted "personal belief" exemptions to account for individuals whose objections to vaccination were not distinctly "religious," but were principled—much like conscientious objection to serving in the army during wartimes.[15] These are called "non-medical exemptions" (NMEs).

Since vaccination laws are state based, each state may have additional criteria to qualify for religious exemptions, which are intentionally restrictive. Some require proof

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[13] Colgrove, *State of Immunity*, 46.
[14] Ivey DeJesus, "God's Will vs. Medicine: Does Faith Tabernacle Beliefs Put Children at Risk?" *Penn Live*, February 16, 2017.
[15] Malone and Hinman, "Vaccination Mandates," 355. On conscientious objection see Charles McCrary, *Sincerely Held: American Secularism and its Believers* (Chicago: University of Chicago Press, 2022).

of membership in a religious organization to grant exemptions.[16] In the 2010s, Alaska, Kansas, Oregon, and South Dakota started requiring the exempt to be "adherent[s] to a religion/religious doctrine/denomination" or "member[s] of a church or denomination" that is "opposed to immunization." Iowa was even more specific, requiring the exempt to prove that immunization "conflicts with…a *recognized* [emphasis added] religious denomination of which the applicant is an adherent or member."[17] Three religious groups best fit these narrow criteria: independent Protestant churches who practice faith healing; Christian Scientists; and the Amish.[18] Combined, these groups represent a very small percentage of the total population who abstain from vaccination. Even Catholics who object to vaccines derived from aborted fetal cells would not technically qualify because the Roman Catholic Church has not opposed the use of such vaccines.[19] Yet, failing to meet such strict criteria does not mean that an applicant for a religious exemption would not receive one. There has often been considerable leeway, interpretation, and personal judgment about what constitutes grounds for religious exemption. In the wake of the 2015 measles outbreak at Disneyland, California removed its nonmedical exemptions, and New York did the same in 2019. At the same time, many state legislators proposed repeals which were thrown out because of medical freedom activism.

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[16] Malone and Hinman, "Vaccination Mandates," 352.
[17] Nina R. Blank et al. "Exempting Schoolchildren from Immunization: States with Few Barriers Had Highest Rates of Nonmedical Exemptions," *Health Affairs* 32, no. 7 (2013): 1282-1290.
[18] Cory Anderson and Lindsey Potts, "The Amish Health Culture and Culturally Sensitive Health Services: An Exhaustive Narrative Review," *Social Science & Medicine* 265 (2020); Ethan M. Scott et al. "Vaccination Patterns of the Northeast Ohio Amish Revisited," *Vaccine* 39 (2021): 1058-1063.
[19] Congregation for the Doctrine of the Faith, "Note on the Morality of Using Some Anti-Covid-19 Vaccines," The Vatican (December 21, 2020); "Statement from Pro-Life Catholic Scholars on the Moral Acceptability of Receiving COVID-19 Vaccines," Ethics & Public Policy Center (March 5, 2021); Donald G. McNeil Jr., "Religious Objections to the Measles Vaccine? Get the Shots, Faith Leaders Say," *New York Times*, April 26, 2019.

Some hesitant parents have affiliated with new religious groups who oppose vaccines. Often founded by alternative medical providers, such groups are non-centralized and tend not to have traditional meetings or services. Rather, they advertise that membership in their congregations helps people to procure religious exemptions from mandatory vaccines. Chiropractor Walter P. Schilling founded the Congregation of Universal Wisdom in 1975 and claimed 5,520 members in 2003, when he was profiled in the *New York Times*. As Schilling explained, whenever he received a letter requesting membership in the Congregation, he mailed out a copy of the "religion's tenets," which stated that, "the laying on of hands to the vertebrae shall be the sole means of maintaining the life force."[20] This transaction generated an official membership, and the information produced by Schilling could be used as documentation for obtaining a religious exemption, provided the applicant also professed to the state that she held sincere belief in the tenets.

Another chiropractor, William Trebing, founded The Church of Christ Consciousness in 1998 as a "Spiritualist movement." In a post on The Church's website, SayNoToVaccines.org, Trebing explained that, "Resisting medical tyranny is a primary focus of The Church of Christ Consciousness, because the freedom to elect *NOT* to take dangerous injections and medications is every human being's natural birthright according to God's natural biological laws."[21] In many ways, Trebing's argument that abstention

[20] Donald G. McNeil Jr., "Worship Optional: Joining a Church to Avoid Vaccines," *New York Times*, January 14, 2003.
[21] "Avoid Vaccines with Our Verification of Religious Belief Documents," SayNoToVaccines.org (February 7, 2013), https://saynotovaccines.org/2013/02/07/avoid-vaccines-with-our-verification-of-religious-belief-documents, Accessed September 7, 2022.

from vaccines and medications was a religious practice exemplified the views that many vaccine-hesitant people had held for decades, if not centuries. In his self-published book, *Goodbye, Germ Theory*, Trebing laid out an alternative medical and spiritual conceptualization of health that, as the title suggested, dismissed germ theory as dangerous.[22] The book's final pages contained forms for religious exemptions to vaccines, which were verified upon monetary donation to The Church. These mail-order (and later, online) memberships were not common in the 2010s, but they did discredit religious exemptions in the eyes of public health officials, who viewed them as insincere applications of religious belief.

Yet, sincerity is an invisible, intangible state. It is impossible for outsiders to truly judge whether another is sincere in her conviction. Yet, simply living in a society requires that we try. Sincerity is often understood as an internal purity of intent or motive that combines the rationality of the mind and with the emotion of the heart. It is juxtaposed with external actions, rituals, and embodied experiences, which many people perceive to be insincere, rote, or meaningless.[23] As sociologist of religion Adam B. Seligman and others have written, valuing the interiority of sincerity over or against ritual or embodiment is an inherently Protestant framework. In religious exemption protections, a sincere belief against the *concept* of vaccination is considered most valid—an example of "stealth Protestantism" at work. Vaccination, though, is an embodied practice, dependent

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[22] William Trebing, *Goodbye, Germ Theory*, 6th ed., self-published, 228. The website for the Church of Christ Consciousness is https://saynotovaccines.org.

[23] Adam B. Seligman et al. *Ritual and its Consequences: An Essay on the Limits of Sincerity* (New York: Oxford University Press, 2008), 105. Seligman et al. contrast sincerity with ritual, arguing that sincerity and its interiority is inherently Protestant. In American culture, they argue that "Sincerity morally privileges intent over action."

on corporeal acquiescence and ritual. Avoiding it legally has required people to profess beliefs about vaccination more often than they otherwise might. For those who wished to abstain from vaccination, their reasoning is embodied—vaccination is the wrong ritual, improper acquiescence, the incorrect way to maintain a pure body. Groups such as Schilling's and Trebing's have attempted to bridge the gaps between legal understandings of sincerity and religion and the religious practices of the vaccine hesitant.

**A Brief History of Measles Outbreaks**

By the early 1980s, the MMR vaccine was mandatory for babies attending daycare in most states, and in 1983 measles cases were the lowest they had ever been—only 1,500 that year. However, by the end of the decade, measles was steadily on the rise again, primarily in poor urban areas. In 1989, national cases jumped to 18,000, and in to 27,000 cases in 1990. In 1991 there were 50,000 cases and over 150 deaths. The cause was under-vaccination, primarily among poor preschool-aged urban dwellers.[24] Under the Clinton Administration, the Vaccines for Children Program of 1993 made vaccines free for all children under Medicaid.[25] Highly effective, this initiative helped to eradicate measles from the United States in 2000, but eradication status was short-lived because of the hesitancy caused by MMR-autism theory.[26]

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[24] Paul A. Gastanaduy et al. "Chapter 7: Measles," in *Manual for the Surveillance of Vaccine-Preventable Diseases*, Centers for Disease Control and Prevention, Last Reviewed May 13, 2019, https://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html, Accessed September 4, 2022.
[25] William L. Atkinson and Walter A. Orenstein, "The Resurgence of Measles in the United States, 1989-1990," *Annual Review of Medicine* 43 (1992): 451-463; Gwynne Hogan, "How a Measles Outbreak Was Halted in the 1990s: Shots," NPR (May 13, 2019).
[26] Motta and Stecula, "Quantifying the Effect of Wakefield, et al. (1998) on Skepticism About MMR Vaccine Safety in the U.S.," *PLOS One* (August 19, 2021).

A crucial turning point occurred in December 2015 when an outbreak of measles that caused 140 cases was traced to an unvaccinated visitor to Disneyland in Anaheim, California.[27] The outbreak brought national attention to conflicts that had been brewing locally. California legislators acted swiftly, eliminating NMEs for school attendance to raise vaccination levels throughout the state. Their decision had national implications on the 2016 presidential election. Seeing NMEs fall in California pushed many white women voters to take a chance on Republican presidential candidate Donald Trump. Although Republicans had struggled to attract educated white suburban women voters for years, two planks in the GOP platform quickly became critical issues to this swing-vote demographic. Both abolishing the Affordable Care Act (ACA) and "upholding religious liberty" spoke directly to mothers who feared that nationalized, secularized healthcare would usurp their decision-making power over their children's vaccinations. As public health officials learned, a significant number of families exercised this power using the protections of state-level religious exemptions. Even if they did not identify as religious, vaccine-hesitant parents feared that California's decision would signal a domino effect nationwide, killing the religious exemptions that they counted on in other states.[28] The measles outbreaks of the 2010s—and the subsequent governmental responses to them—foreshadowed a nascent anti-vaccine sentiment that was grounded more in religio-

[27] In the field of public policy, this type of watershed event is called a "focusing event." A focusing event draws the public's attention to an underlying social problem. See: Thomas A. Birkland, "Focusing Events, Mobilization, and Agenda Setting," *Journal of Public Policy* 18, no. 1 (January 1998): 53-74.
[28] Eric Bradner, "Republicans Pivot from Gay Marriage to Religious Liberty Fight," *CNN*, June 29, 2015; Farai Chideya, "Suburban White Women Weigh Their Options in A 'Bizarre' Election," FiveThirtyEight.com, October 4, 2016; Dara Lind, "Donald Trump Lies. All the Time," *Vox*, September 27, 2016; Sarah Kliff, "Trump and the GOP Can Absolutely Repeal Obamacare," *Vox*, November 9, 2016.

political identity than ever before. This sentiment was also fueled by latent anger at the biomedical establishment which now seemed indistinguishable from "Big Pharma" and the federal government.

The Disneyland outbreak caused shock and outrage. Although cases of measles had been rising for years, the idea of a vaccine-preventable disease entering the gates of Disneyland was unconscionable to many Americans, and mumps outbreaks at Harvard University caused a similar stir.[29] This was largely to do with media coverage. After MMR-autism theory was disproven and Gardasil caused a sex panic among conservative Christians, most mainstream journalists adopted a firmly "pro-expert" stance in their scientific, medical, and environmental coverage.[30] This move was a counterweight to religiously and politically conservative outlets, whose anti-intellectual approach to scientific matters had solidified over decades.[31] As a result of this polarized political and media landscape, many Americans were unaware that vaccine hesitancy was growing rampant because the mainstream media rarely publicized it. Disease outbreaks were widely portrayed as surprising, scary, and anomalous—the results of anti-scientific ignorance or selfishness.

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[29] Michael A. Cacciatore et al. "It's Complicated: The 2014-2015 U.S. Measles Outbreak and Parents' Vaccination Beliefs, Confidence, and Intentions," *Risk Analysis* 38, no. 10 (2018): 2178-2192; "Measles Outbreak – California, December 2014-February 2015," *Morbidity and Mortality Weekly Report*, February 20, 2015; Felix Gussone and Shelly Choo, "Mumps Outbreak at Harvard Threatens Graduation," *NBC News*, April 28, 2016.

[30] Clark Hoyt, "The Doctors Are In. The Jury Is Out," *New York Times*, February 17, 2008; Margaret Sullivan, "Just the Facts. No 'False Balance' Wanted Here," *New York Times*, July 17, 2013.

[31] Peck, *Fox Populism*, 185; Kevin Whitelaw, "Flu, Me? Public Remains Wary of H1N1 Vaccine," NPR, October 17, 2009; David A. Graham, "Courting the Anti-Vax Vote," *The Atlantic*, February 2, 2015; Steven Shapin, "Is There a Crisis of Truth?" *LA Review of Books*, December 2, 2019.

In an open letter first published in the politically liberal magazine *Mother Jones* and followed by public testimony in front of a United States Senate committee investigating the resurgence of vaccine-preventable diseases, pediatrician Timothy Jacks argued that parents who abstained from having their children vaccinated were knowingly endangering others. Jacks and his family, including an immune-compromised daughter with cancer and a ten-month-old baby, had been exposed to measles at Disneyland the previous month. Although no one in his family contracted the disease, Jacks was incensed, particularly because his children were unable to be vaccinated. "Please realize that your child does not live in a bubble," he wrote. "When your child gets sick, other children are exposed. My children. Why would you knowingly expose anyone to your sick, unvaccinated child after recently visiting Disneyland? That was a boneheaded move."[32] Jacks' testimony was republished in several outlets, drawing attention to the communal nature of vaccination decision-making. It also put a sympathetic face and clear consequences on the potentially abstract topic of hotspot prevalence.

Suddenly the media wondered: Who were the unvaccinated, and where did they live? Public health researchers and journalists worked to decipher data, finding few similarities between unvaccinated groups. "Vaccination refusal" had increased from 0.8 percent nationally in 2016 to 1.1 percent in 2017, equaling almost 64,000 children who

[32] Timothy Jacks, "To the Parent of the Unvaccinated Child Who Exposed My Family to Measles," *Mother Jones*, February 2, 2015; Testimony to United States Senate, Committee on Health, Education, Labor, and Pensions, (February 10, 2015).

would be thirty-five times likelier to catch the measles than those who were fully vaccinated.[33] The numbers were startling.

The topic of religious and philosophical, or "personal belief," exemptions from mandatory vaccinations was politically contentious. Mainstream and liberal news outlets lambasted the mere notion of NMEs in the name of public health and the good of the "commons.[34] Conservative and libertarian politicians, such as Governor Brad Little, bragged about making Idaho the "least regulated state in the U.S." and a "beacon and proving ground for health freedom."[35] While California and New York became more restrictive, Idaho's legislature passed a law guaranteeing that all schools would proactively communicate to parents that they could opt out of vaccinations, and the state became the home of eight of the ten counties in the country with the highest rates of vaccine exemptions. The *Idaho Capital Sun* reported that, as the state deregulated, it became known as a "refuge" for families from California and Washington who had fled stricter laws. On blogs and social media, these families described themselves as "medical freedom refugees."[36] Popular natural health blogger-turned-Substacker Megan Redshaw frequently urged concerned parents to move to states with looser laws rather than allow

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[33] Novack, "How Anti-Vaxxers Are Injecting Themselves into the Texas Republican Primaries"; Maggie Fox, "Anti-Vaccine Hot Spots on Rise Across U.S., Study Finds," *NBC News*, June 12, 2018; S.D. "What Populists and Anti-Vaxxers Have in Common," *The Economist*, August 15, 2018; Lisa Miller, "Measles for the One Percent," *New York Magazine*, May 29, 2019; Lena H. Sun, "Kids in These Hotspots at Higher Risk Because Parents Opt Out of Vaccination," *The Washington Post*, June 20, 2018.
[34] Editorial Board, "Vaccine Opt-Outs Put Public Health at Risk: Our View," *USA Today*, April 13, 2014; Melinda Wenner Moyer, "Anti-Vaccine Activists Have Taken Vaccine Science Hostage," *New York Times*, August 4, 2018; Editorial Board, "Measles Breaks Out Among Yeshiva Students. Where to Begin?" *New York Times*, March 7, 2019; Julia Belluz, "Measles Is Back Because States Give Parents Too Many Ways to Avoid Vaccines," *Vox*, July 3, 2019.
[35] Audrey Dutton, "Idaho Loosened Public Health Guardrails, and Health Misinformation Flourished," *Idaho Capital Sun*, December 22, 2021.
[36] Dutton, "Idaho Loosened."

their children to be vaccinated. The comment sections of these posts reflected a growing fear among the vaccine hesitant who had been quietly utilizing religious or personal belief exemptions for some, or all, of their children's required immunizations. What would they do if their own state eliminated exemptions? In 2021, Redshaw published a detailed guide ranking all fifty states from least to most regulated according to seven criteria, including the ease of obtaining vaccine exemptions and the laxity of homeschooling oversight. Oklahoma ranked first, New York last.[37]

**Hotspots: Three Case Studies**

Three case studies illustrate the religious, political, and cultural complexities of prominent measles hotspots in the 2010s: a megachurch in Texas, ultra-Orthodox Jewish communities in New York City; and a Steiner Waldorf school in upstate New York. These cases represented a coterie of people whose religious and philosophical commitments alienated them from the public health establishment. Their legal, rather than medical, plights spurred grassroots agitation for medical freedom, parental rights, and religious liberty. Organizers created informal moral communities united by these issues. The resulting tensions grew ripe for powerful national groups who framed local struggles over vaccine hesitancy as infringements upon religious liberty, a cause that was newly championed by the Republican Party and associated with white Christian nationalism.[38]

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[37] Megan Redshaw, "The Best States to Live in and Move To (if You're Contemplating a Mass Exodus From Your State)," Megan Redshaw Newsletter, August 12, 2021.
[38] Whitehead and Perry, *Taking America Back for God* (2022).

*Faith Healing Churches in Pennsylvania and Texas*

There is a long and diverse history of faith healing in both Christian and non-Christian traditions in the United States.[39] Over the twentieth century, faith (or divine) healing became popular in independent evangelical and fundamentalist churches and in churches aligned with the Holiness, Charismatic, and Pentecostal traditions, as well as churches practicing prosperity theology. In Christian-based faith healing, the core principle at hand is the use of prayer—individual and/or communal—to ask for divine intervention for one's health.[40] Christians who practice faith healing typically believe that illness is a combination of spiritual and physical conditions manifesting as physical or spiritual ailments.[41] Physical healing occurs through demonstrating one's faith that God will provide the healing powers of the Holy Spirit and righting one's spiritual wrongs.

Some churches view abstention from medical treatment as a personal test of faith in God's ability to heal or protect human lives. If a believer succumbs to an illness, her death is attributed to God's plan for her life or a punishment for a moral failing. This is a

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[39] Catherine L. Albanese, *A Republic of Mind and Spirit* (New Haven, CT: Yale University Press, 2007); Ann Braude, *Radical Spirits: Spiritualism and Women's Rights in Nineteenth-Century America* (Bloomington, IN: Indiana University Press, 2001); Claire Hoertz Badaracco, *Prescribing Faith* (Waco, TX: Baylor University Press, 2007); Heather D. Curtis, *Faith in the Great Physician* (Baltimore, MD: The Johns Hopkins University Press, 2007); Simon Dein, "Religious Healing and Mental Health," *Mental Health, Religion & Culture* 23, no. 8 (December 2020): 657-665; Claude F. Jacobs, "Rituals of Healing in African American Spiritual Churches," in *Religion and Healing in America*, eds. Linda L. Barnes and Susan S. Sered (New York: Oxford University Press, 2005), Ch. 20.

[40] Christian faith healing is a varied tradition in American culture. William Clements, "Ritual Expectation in Pentecostal Healing Experience," *Western Folklore* 40, no. 2 (April 1981); Mary Jo Neitz, *Charisma and Community: Study of Religious Commitment Within the Charismatic Renewal* (New York: Routledge, 1987); R. Marie Griffith, *God's Daughters: Evangelical Women and the Power of Submission* (Berkeley, CA: University of California Press, 1997); Grant Wacker, *Heaven Below: Early Pentecostals and American Culture* (Cambridge, MA: Harvard University Press, 2003); Lindsay W. Glassman, "'In the Lord's Hands': Divine Healing and Embodiment in a Fundamentalist Christian Church," *Sociology of Religion* 79, no. 1 (2018): 35-57.

[41] Kate Bowler, *Blessed: A History of the American Prosperity Gospel* (New York: Oxford University Press, 2013), 7; 140.

radical and rare position. Faith healing theology and practice have grown in popularity in the United States over the past century, but very few Christians completely refuse modern biomedicine. Even the Church of Christ, Scientist has adapted its stance, perhaps owing to its deeply diminished membership since the mid-twentieth century. As of the 2010s, that denomination's leaders have taught that Christian Scientists should utilize biomedicine, including vaccination, in combination with prayer. They have argued that doing so does not indicate a flagging faith in Jesus Christ's ability to heal.[42]

However, in independent, nondenominational church communities where individual pastors, rather than a denominational body, are influential in shaping members' views, a vaccine-hesitant or oppositional pastor can use sermons to foster a culture of vaccine hesitancy. In 1991, the Faith Tabernacle Church and the First Century Gospel Church, both Philadelphia-based fundamentalist Christian congregations devoted to faith healing, became the hotbed of a major measles epidemic. The outbreak spurred discussions around the ethics of faith healing, especially as practiced on children. These discussions often portrayed religious vaccine hesitancy reductively and made the radical stances of these churches seem more prevalent than they were. The details of the epidemic spurred public health officials into action. In an interview with *The Philadelphia Daily News*, the father of Monica Johnson, a nine-year-old who died from cardiac arrest resulting from measles, explained his daughter's death as having a divine

[42] Rodney Stark, "The Rise and Fall of Christian Science," *Journal of Contemporary Religion* 13, no. 2 (1998): 189-214; Paul Vitello, "Christian Science Church Seeks Truce with Doctors," *New York Times*, March 23, 2010; Linda Ross, "Written Testimony of Linda Ross," Joint Committee on Public Health, State of Connecticut (February 16, 2021), https://www.cga.ct.gov/2021/PHdata/Tmy/2021HB-06423-R000216-Ross,%20Linda-TMY.PDF, Accessed September 5, 2022.

cause. "[She died] for the strengthening of our belief…That is why God has chosen her…[Immunization is an] interference with God's will."[43] According to the news reports of Johnson's death, her parents did not call for medical help, and she died at home. Johnson's sister died of measles shortly thereafter. Five-hundred community members became ill with measles within the span of two months, and multiple children died. Yet, some parents continued to refuse vaccination or hospitalization for their children.

Under these dire circumstances, the city was granted the right by a family court to immunize all children, even if doing so was against the wishes of their parents. In addition, families were legally forced to submit their children to medical examinations by area physicians who were sent to church members' homes monthly to conduct check-ups. Arguing that the city's actions were unconstitutional, the American Civil Liberties Union (ACLU), took on Faith Tabernacle's case despite previously refusing to represent them because of public health violations.[44] Ultimately, the ACLU and Faith Tabernacle prevailed. The public health crisis at Faith Tabernacle was held up in the news as an example of the incompatibility of "religion" and "medicine."[45]

More than two decades later, faith healing and measles were in the news again. This time, the church was Eagle Mountain International Church, located north of Fort Worth in Newark, Texas. In 2013, Eagle Mountain, a megachurch that is part of Kenneth Copeland Ministries (KCM), experienced a measles epidemic. A church member who

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[43] DeJesus, "God's Will vs. Medicine"; Victor Fiorello, "A Look Back at the Deadly Philadelphia Measles Outbreak of 1991," *Philadelphia Magazine*, March 20, 2021.
[44] Michael DeCourcey Hinds, "Judge Orders Measles Shots in Philadelphia," *New York Times*, March 6, 1991.
[45] Paul A. Offit, *Bad Faith: When Religious Belief Undermines Modern Medicine* (New York: Basic Books, 2015), 92-110.

had recently visited Indonesia on a mission trip spread measles to more than twenty unvaccinated church members upon his return.[46] Eagle Mountain, led by Copeland's daughter and son-in-law, Terri Copeland Pearsons and George Pearsons, had a reputation for vaccine skepticism, and the Pearsons often preached that people should trust in God to ward off disease. According to KCM's statement of faith, divine healing is one of the primary ways that members can experience the "fullness of the blessing."[47] Eagle Mountain's measles cases caused national headlines and drew a sharp rebuke from mainstream media. They also occurred just as the concept of "unvaccinated hotspots" was being recognized by public health researchers. A former member of the church explained to a reporter, "To get a vaccine would have been viewed by me and my friends and peers as an act of fear – that you doubted God would keep you safe…we simply didn't [vaccinate]."[48] These sentiments of fear-based vaccine abstention were damning. Eagle Mountain needed damage control.

Terri Pearsons spearheaded a church-based vaccine clinic shortly after the measles cases made the news, yet her messaging to parishioners continued to promote skepticism. In a sermon at Eagle Mountain shortly after the clinic opened, instead of affirming the benefits of vaccination, she preached about the differences between facts and truth. "So, I'm going to tell you what the facts are, and the facts are the facts, but then we know the Truth. That always overcomes facts," Pearsons said.[49] Evangelical

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[46] Lauren Silverman, "Texas Megachurch at Center of Measles Outbreak," *NPR* (September 1, 2013).
[47] Kenneth Copeland Ministries, "About Us." https://www.kcm.org/about-us-0, Accessed September 5, 2022.
[48] Amy Arden quoted in Jamie Stengle, "Measles Cases Put Texas Megachurch Under Scrutiny," *Associated Press* (August 31, 2013).
[49] Silverman, "Texas Megachurch at Center of Measles Outbreak."

Christians have long distinguished between scientific knowledge, or "facts" that defy scriptural accounts of history and creation, and "Truth," a theologically based, commonsense understanding of the world. The Truth is created by an omnipotent and omniscient God who orchestrates life as humans experience it.[50]

There was a double meaning in Pearsons' message. First, she observed that scientists and doctors tell people to get vaccinated to prevent illness and that vaccines will probably be effective. However, the Truth was that God decided whether they got sick in the first place. Another fact was that scientists and doctors promoted the vaccines and the CDC's recommended vaccination schedule as safe. The Truth was that both were much riskier than they let on. Pearsons' religiously inflected double-speak cast doubt on vaccine safety and necessity while not making any definitive anti-scientific or anti-vaccine claims. Pearsons equated science, doctors, and biomedicine with "facts," and she did not dispute their accuracy in an immediate, tangible, or this-worldly sense. However, her deeper meaning was that the "Truth" (and by implication Pearsons herself) was operating at a higher level than facts were. In this sense, facts were not incorrect, but they *were* irrelevant. Eagle Mountain and the surrounding region remained a measles hotspot.

[50] This rhetoric also applies to scientific concepts such as evolution and climate change. Many scholars of religion argue that the seeming incompatibility between evangelical Christian theology and scientific reasoning is primarily cultural rather than theological. On climate change see Robin Globus Veldman, *The Gospel of Climate Skepticism* (Berkeley, CA: University of California Press, 2019). On science broadly, see Samuel L. Perry et al., "Ignorance or Culture War? Christian Nationalism and Scientific Illiteracy," *Public Understanding of Science* 30, no 8 (November 2021): 930-946.

*Ultra-Orthodox Jews in New York City*

Of the religious groups hit by the measles epidemic, the ultra-Orthodox Jewish communities of Brooklyn, upstate New York, and New Jersey generated the most attention. In Brooklyn alone, there were approximately one-thousand measles cases between 2018-2019 among ultra-Orthodox children who were either unvaccinated or under-vaccinated.[51] The media of the New York City-metro area discussed the story relentlessly, and the unsolved mystery of the PEACH pamphlets' origins was both riveting and troubling. There was clearly a vaccine-hesitant contingent within the community that was receptive to PEACH messaging. But who was behind PEACH? To many observers, it seemed that the *haredi* community was being targeted with misinformation from the outside. Why? Journalists blamed the insularity of ultra-Orthodox Jewish enclaves for allowing misinformation about vaccine safety to spread and stick.[52] If ultra-Orthodox Jews interacted more with the "outside world," they would surely have received more reasonable and medically sound advice and vaccinated their

[51] To be under-vaccinated is to have fewer than the ACIP-recommended number of vaccine doses for one's age. Debra Nussbaum Cohen, "War Breaks Out in New York's Ultra-Orthodox Community Over Measles Outbreak," *Haaretz*, November 21, 2018; Alyssa Fisher, "Timeline: New York's Measles Outbreak," *The Forward*, April 10, 2019; Ray Sanchez, "A Measles Outbreak Is Dividing Families in This Orthodox Jewish Community. Passover Could Make it Worse," *CNN*, April 19, 2019; Ben Sales, "Gospels and Child Sacrifice: Inside a NYC Ultra-Orthodox Anti-Vaccination Rally," *The Times of Israel*, June 6, 2019.

[52] Brooklyn is home to a multitude of *haredi* Jewish groups, each living in certain neighborhoods near fellow members of their own enclave. Williamsburg is home to Satmar Hasidic Jews, known for their strict form of modest dress, including round, black velvet brimmed hats worn over yarmulkes for men and long skirts over stockings for women. Satmars also live in the gated community of Kiryas Joel in upstate New York, just over the border from New Jersey. Lubavitchers, known for running the global Chabad effort aimed at proselytizing other Jews, live in in Crown Heights and in a small hamlet located within Monsey, New York, and Bobovers are prominent in Borough Park. *Litvish*, or Yeshivish Jews, who are non-Hasidic, live in Flatwood, Midwood, and Kensington, as well as in Lakewood, New Jersey. See Henry Goldschmidt, *Race and Religion Among the Chosen Peoples of Crown Heights* (New Brunswick, NJ: Rutgers University Press, 2006), 110; Ayala Fader, *Mitzvah Girls: Bringing Up the Next Generation of Hasidic Jews in Brooklyn* (Princeton, NJ: Princeton University Press, 2009), 9-12. For a detailed history of Hasidism, see: David Biale et al., *Hasidism: A New History* (Princeton, NJ: Princeton University Press, 2020).

children, reporters implied.[53] They also quoted Jewish authorities who argued that vaccination did not violate Jewish law, known as *halacha*. Rabbi David Niederman, the executive director of the United Jewish Organizations of Williamsburg, Brooklyn, argued publicly that even the most observant Jews had an obligation to break *halacha* to prevent harm, including to their own lives.[54] Following the developing epidemic, non-*haredi* readers received the message that Jews who did not vaccinate were theologically misguided. In other words, not only were the *haredi* in Brooklyn acting as bad citizens by avoiding vaccination, but they were also acting as "bad Jews." This caused many onlookers to be less supportive of religious vaccine exemptions.

The groups known colloquially as ultra-Orthodox Jews, or *haredi* and Hasidic Jews, identify with high-profile, yet localized, rabbinical authorities that are regarded as semi-divine leaders.[55] Jewish Studies scholar Samuel Heilman describes these groups as "anxiously and fervently religious" and "traditionalist."[56] *Haredim* (plural) privilege separation from mainstream American society and other less-observant Jews in order to

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[53] Julia Belluz, "New York's Orthodox Jewish Community Is Battling Measles Outbreaks. Vaccine Deniers Are to Blame," *Vox*, January 8, 2018; Editorial Board, "Measles Breaks Out Among Yeshiva Students. Where Do We Begin?" *New York Times*, March 7, 2019.

[54] Belluz, "New York's Orthodox Jewish Community Is Battling Measles"; Donald G. McNeil Jr, "Religious Objections to the Measles Vaccine? Get the Shots, Faith Leaders Say," *New York Times*, April 26, 2019; Ray Sanchez, "A Measles Outbreak Is Dividing Families in This Orthodox Jewish Community. Passover Could Make It Worse," *CNN* (April 19, 2020).

[55] I use "*haredi*" (plural: "*haredim*) to describe the full spectrum of ultra-Orthodox Jews, following Jewish Studies scholar Samuel C. Heilman. When discussing the sub-group known as Hasidic Judaism, I will make this clear. Heilman, *Defenders of the Faith: Inside Ultra-Orthodox Jewry* (Berkeley, CA: University of California Press, 2000). On the historical divergences between Haredim and Hasidic religious lifeways, see Adam S. Ferziger, *Beyond Sectarianism: The Realignment of American Orthodox Judaism* (Detroit: Wayne State University Press, 2015), 176. Ferziger describes the influence of leaders Rabbi Menachem Mendel Schneerson and Rabbi Aharon Kotler whose approach to American life differed over proselytization among many other matters.

[56] Samuel C. Heilman, *Sliding Toward the Right: The Contest for the Future of American Jewish Orthodoxy* (Berkeley, CA: University of California Press, 2006), 4.

live according to *halacha,* retain ritual practices, and police their own boundaries of group identity.

Insularity was an important factor in the spread of both measles and misinformation in *haredi* Brooklyn, but it was not the only cause. By the time measles infiltrated *haredi* communities via travelers from Israel—which experienced its own measles epidemic during the late 2010s—opposition to vaccination was already a hot topic among *haredi* mothers, who commonly have at least three children. While local *haredi* rabbis and doctors advocated vaccination on the CDC's recommended schedule, these mothers did not trust that vaccines such as the MMR were safe, and they opted to delay vaccination or receive religious exemptions. In other words, they disobeyed their own medical doctors and rabbis to keep their children unvaccinated.

The measles outbreaks also caused conflicts over how to interpret *halacha* correctly on the topic of vaccination. Vaccine-hesitant mothers and anti-vaccine advocates feared that their rabbis' interpretations were well-intentioned but based on incorrect information. Instead, many mothers believed that correct information was online. This was especially thorny for *haredim* because going online for answers violated religious proscriptions against using modern technology. Online research had to be done secretly and sparingly. Younger mothers were inclined to disobey these rules, adding to a generational discord over access to, and proper uses of, the internet. In the 2010s, vaccine-hesitancy research was just one front in a multi-battle contest over authority in these insular Jewish communities. It recapitulated ongoing power struggles between local

rabbis and famous "big name" rabbis, between mothers and doctors, and between local rabbis and the New York Department of Public Health.[57]

Traditionally, *haredi* Jews have eschewed television, non-Jewish publications, and other cultural connections to the outside world. However, with the internet and social media available on smart phones, younger people were engaging with forbidden ideas and technologies. They used the free messaging platform, WhatsApp, to communicate with friends, family, and likeminded thinkers, often in anonymous groups. WhatsApp became an essential tool for mothers to discuss and share what they had read about vaccination, including their fears about vaccine safety and decisions for and against vaccinating.[58] Also popular were dial-in hotlines, such as "Akeres Habayis" ("Woman of the Home"), which started to feature vaccine-related programming circa the outbreaks. It was an insider's platform for radicalized *haredi* doctors and rabbis who strongly opposed vaccines.[59] From the outside, *The Vaccine Book* by Bob Sears and the documentary, *Vaxxed* (2016), circulated throughout the ultra-Orthodox Brooklyn enclave, where some

[57] Ayala Fader, *Hidden Heretics: Jewish Doubt in the Digital Age* (Princeton, NJ: Princeton University Press, 2022); Fader, "Media, Medicine, and Change in the Ultra-Orthodox World Today," The Haredi Moment: An Online Forum: Part 1, University of Pennsylvania (April 12, 2021), https://katz.sas.upenn.edu/resources/blog/haredi-moment-online-forum-part-1, Accessed September 5, 2022.
[58] Debra Nussbaum Cohen, "War Breaks Out in New York's Ultra-Orthodox Community," *Haaretz*, November 21, 2018; Amanda Darrach, "It's Not Misinformation. It's Faith," *Columbia Journalism Review* February 7, 2020; David Meyer, ed. "The Haredi Moment: An Online Forum Part 1," *The Jewish Quarterly Review*, April 12, 2021.
[59] Gwynne Hogan, "Misinformation Hotline Stokes Fear of Vaccines in Ultra-Orthodox Community," *Gothamist*, March 12, 2019; Hannah Dreyfus, "Fighting Coronavirus Skepticism in Orthodox Brooklyn," *Slate*, December 6, 2020.

stay-at-home mothers curated borrowing libraries in their homes for others to view anti-vaccine materials.[60]

In 2018 and 2019, the PEACH organization published new pamphlets and distributed them, this time online and in print. Again, the names of the organization's leaders remained unpublished, although Barbara Loe Fisher of NVIC was named as a contributor. The authors of the PEACH pamphlets targeted *haredi* readers, a demographic outside of Fisher's wheelhouse. The pamphlets spread vaccine hesitancy using a mix of English and Hebrew, Torah references, cartoons depicting *frum* mothers and children, and Jewish legal opinions attributed to famous rabbis. PEACH transformed secular medical content into religious literature.

Still, rabbinical authority was a crucial aspect of PEACH's strategy. In both the 2018 and 2019 editions, a formal two-page letter dated to 2015 was arranged on the backdrop of a parchment scroll and signed by three famous rabbis. The rabbis argued that if a school mandated vaccination and a child suffered a side effect from the vaccine, then school leaders would be "held accountable" by God. The letter read as a formal decree:

> Ultimately, it is *God's* protection that guarantees the safety and health of our children. It is only by acting according to His will — not the medical doctors — that a school and its students can be worthy of protection. *These are serious topics and require a lot of study of the Torah. As people who live according to the Torah, [mandating vaccines for school attendance] would be nothing less than an affront to the Torah.*[61]

[60] Julia Belluz, "New York's Orthodox Jewish Community Is Battling Measles Outbreaks. Vaccine Deniers Are to Blame," Vox (January 8, 2019).
[61] PEACH 2018. Text in italics is translated from Hebrew.

Emphasizing God's ultimate power over people's health, the letter echoed the theological stance of Christian faith healing leaders, again shifting the authority over one's health or illness away from doctors and public health strictures toward the divine. This difference of interpretation from local rabbis (and doctors) created an issue of distrust that cut both ways. Local rabbis and medical providers who were accustomed to deference no longer felt their medical advice was respected, and *haredi* mothers worried that their traditional sources of authority were wrong, both medically and religiously. Who held the medical authority?

In *haredi* and Hasidic communities, members consult their local rabbis to ensure that they are approaching each aspect of their lives in accordance with Jewish law.[62] Alluding to this practice, known as *she'elot*, PEACH provided questions for readers to ask their rabbis. However, directly below most questions, it supplied answers labeled "Background" for readers to potentially refute their rabbis who disagreed with PEACH. PEACH's authors used the religious norms of consultation with rabbi(s) on important questions, implying that rabbis hold authority on matters of medicine and health. However, the PEACH reader was given a playbook by which to guide her rabbi's opinion toward her desired outcome of condoning vaccine abstention. In other words, the strategy behind PEACH was to create circumstances in which vaccine hesitancy could prevail as a characteristically Jewish issue that required religious liberty laws for protection.

[62] This practice is known in Hebrew as *she'elot*. See: Oren Z. Steinitz, "Responsa 2.0. Are Q&A Websites Creating a New Type of Halachic Discourse?" *Modern Judaism* 31, no. 1 (February 2011): 85-102.

In New York, *haredim* are an important demographic in local politics. But as a religious minority with numerous sub-sects and an insular worldview, their lifeways often contradicted the law. Given a history of many recent legal disputes, including over the sanitation of circumcision practices, operation of private schools known as yeshivas, and zoning laws, the mistrust that *haredim* felt toward their city government, and even their doctors, was palpable during the measles epidemics.[63] When the New York City mayor, Bill de Blasio, issued exclusion orders in ultra-Orthodox neighborhoods in December of 2018 to prevent unvaccinated children from attending yeshivas and preschools, it prompted many inside the community to view his actions as governmental overreach, or even anti-Semitism.[64] Vaccine abstention became an issue about religious liberty. The *New York Times* Editorial Board agreed with de Blasio and the NYDPH, arguing, "By endangering students' health and futures, too many yeshivas have shown they need strict government supervision—whatever the political cost for elected officials."[65] The patronizing sentiment from the city and its media elites further fomented opposition toward mandatory vaccination practices and concretized feelings among the ultra-

[63] Ayala Fader and Zachary Sholem Berger, Presentation at the Association for Jewish Studies Annual Meeting, 2020; New York City Public Health launched a crackdown on the circumcision practice known as *metzizah*, after numerous infant boys contracted herpes. On circumcision, see: Offit, *Bad Faith*, 68-72; Andy Newman, "City Questions Circumcision Ritual After Baby Dies," *New York Times*, August 26, 2005; Liz Rosen, "Baby's Death Renews Debate Over a Circumcision Ritual," *New York Times*, March 8, 2012. On zoning laws in Kiryas Joel, see Jay D. Wexler, *Holy Hullabaloos: A Road Trip to the Battlegrounds of the Church/State Wars* (Cambridge, MA: Beacon Press, 2009), Ch. 1. On school board disputes, Ben Calhoun, "A Not-So-Simple-Majority," This American Life Podcast (September 12, 2014).
[64] Emma Green, "Measles Can Be Contained. Anti-Semitism Cannot," *The Atlantic*, May 25, 2019; Tyler Pager, "Yeshiva's Preschool Program Is Closed By New York City Officials," *New York Times*, April 15, 2019.
[65] Editorial Board, "Measles Breaks Out Among Yeshiva Students."

Orthodox of separateness and division from mainstream authority structures. On a national level, political conservatives and other religious minority groups took note.

*Green Meadow Waldorf School in Upstate New York*

In March 2019, parents of Green Meadow Waldorf School students were seething. Located just thirty-five miles north of Brooklyn, in the small town of Chestnut Ridge, New York, Green Meadow was one of 150 Steiner Waldorf private schools operating in the United States. Though it had not experienced any measles cases during the ongoing epidemic nearby, Green Meadow became a battleground for vaccine-hesitant parents whose children's religious exemptions were being tested by county officials. Because of the growing caseload of more than two-hundred cases in the region, all students living in two specified zip codes in Rockland County received a mandatory order for immediate measles immunizations. Both zip codes had a vaccination rate under seventy percent, well below the threshold of herd immunity for measles. According to the County health officials, if children did not begin the two-shot vaccination process or produce a medical exemption form, they would not be allowed to attend school.[66] It was the same tactic that the New York Department of Public Health used to compel yeshiva students in Brooklyn to vaccinate just one month earlier.

The two zip codes represented two very different populations: Green Meadow students and their families; and the Lubavitch Hasidic Jewish community of Monsey,

[66] Lisa Miller, "Measles for the One Percent," *New York*, May 29, 2019.

New York. The Rockland County Executive, Ed Day, who helped to implement the mandatory vaccination order, issued this statement to parents of unvaccinated children:

> My advice to parents is simple. If your child has a defined and critical medical condition that immunizations could worsen, a doctor confirmed, medical exemption makes sense. However, if you are mentally nebulous or an anti-vaxxer who follows the 'expert' teachings of Hollywood actors where does it stop? Do you not vaccinate against polio also? Do the right thing for your child and for the greater good of your community; have your child vaccinated now. With that, your child will be able to return to school.[67]

Day's stern statement was a response to a lawsuit filed by a group of Green Meadow parents against the county, citing an infringement on their religious exemption rights and seeking an injunction on the mandatory vaccination order. Green Meadow parents were aggrieved by the order, arguing that they were being punished unnecessarily because the measles cases were in Monsey. However, Green Meadow also had an uncommonly low vaccination rate. The morning after the exclusion order went into effect, 120 Green Meadow students out of 300 were absent, immediately revealing who was unvaccinated.[68] Some parents eventually complied and had their children vaccinated so that they could return to school. Others opted to keep their children at home and fight the order legally, while others moved away and enrolled in different Waldorf schools.

Waldorf schools were founded by Rudolf Steiner, a prolific early twentieth-century German proponent of "anthroposophy." This philosophy argued that humans have a "fourfold nature" that included the ego, the astral body, the etheric body, and the physical body. This nature also contained nine "facets," each a different type of spirit or

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[67] Ed Day, "County Executive's Corner: 'The Necessary Step,'" *Rockland County Times*, March 14, 2019.
[68] Miller, "Measles for the One Percent."

soul.[69] Steiner believed that the "ultimate human destiny of the human being is to fully develop in body, soul, and spirit," and that immersion in nature and following a "salutogenic" approach to health and education would help a child's soul to develop properly.[70] While Waldorf schools do not explicitly teach anthroposophy, their design and curricula are informed by its main principles. Parents of Waldorf students tend to be highly educated, upper-middle class or wealthy, and to have high-powered jobs in technology and finance, yet they often choose to raise their children without exposure to many forms of modern technology until they reach middle school age. Known as "non-interventionist," this approach to parenting is intended to preserve children's innate purity and specialness by leaving them as natural and untouched by modernity as possible.[71]

From a bodily perspective, the salutogenic focus of anthroposophy inheres a quasi-reverence for childhood diseases, which are viewed as rites of passage for parent and child, opportunities for intensive parent-child bonding. Intensive parenting at its most raw. These diseases are believed to allow children's immune systems to mature "naturally" by creating antibodies against illnesses such as measles, mumps, and chicken pox.[72] Outside of their communities, Waldorf schools are often looked down upon, in part because of their low vaccination rates. As Peter J. Hotez, a prominent pediatrician and

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[69] Rudolf Steiner, *What Is Biodynamics? A Way to Heal and Revitalize the Earth* (Hudson, NY: SteinerBooks, 2004), 18.
[70] Steiner, *What is Biodynamics?*, 19; Elisa J. Sobo, "Salutogenic Education? Movement and Whole Child Health in a Waldorf (Steiner) School," *Medical Anthropology Quarterly* 29, no. 2 (2014): 137-156; Elisa J. Sobo, "Social Cultivation of Vaccine Refusal and Delay Among Waldorf (Steiner) School Parents," *Medical Anthropology Quarterly* 29, no. 3 (2015): 381-399.
[71] Miller, "Measles for the One Percent" Kimiko de Freytas-Tamura, "Bastion of Anti-Vaccine Fervor: Progressive Waldorf Schools," *New York Times*, June 13, 2019.
[72] Thomas Cowan, *Vaccines, Autoimmunity, and the Changing Nature of Childhood Illnesses* (White River Junction, VT: Chelsea Green Publishing, 2018), 96-97.

virologist at Baylor College of Medicine, told a reporter in 2019, "All the Waldorf schools are horrible…There are several in Texas I would not consider safe for children."[73]

For the lawsuit filed against Rockland County, seventeen Green Meadow parents or couples (identified by their initials in redacted official records), submitted written affidavits detailing the hardships—emotional, economic, social—that withholding their children from school had brought them. They also described the religious or spiritual reasons that had led them to request religious exemptions in the first place. In almost every affidavit, the parents expressed spiritual beliefs that emphasized the body as the temporary encasement for the soul.[74] Their explanations of why their beliefs about bodies and souls contradicted vaccination made three core truth-claims.

First, bodily purity directly affected soul purity. Bodies and souls were born pure, went their logic. However, as corporeal encasements for the soul, bodies needed to be kept pure to allow both physical and spiritual maturation. Injections of any substance were acts of violence to the soul. As one parent explained, "For us blood is the carrier of the soul, [so] injections of vaccine-substances, often animal or embryo derived, are strictly forbidden. To maintain the purity of our souls as a connection to the divine spirit is the most important aspect of our lives."[75]

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[73] Quoted in Miller, "Measles for the One Percent."
[74] M.A. *v.* Rockland County Department of Health (7:19-cv-02066). The affidavits used in this case were publicly available online with all identifying details redacted. I downloaded them from DocuCloud and analyzed each one. Of the seventeen affidavits, two expressed significantly different views from the other fifteen. One stated a Shinto and Buddhist religious identity ("T and M.M.") as a reason for opposing vaccines. The other did not discuss religious reasoning.
[75] M.P. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.

In other words, an injection of any foreign substance into the bloodstream would contaminate the soul and alienate the individual from the divine. In another affidavit, a parent expressed a metaphysical understanding of a baby's place within the order of nature. In essence, they argued, vaccination would cause spiritual disorder:

> My spiritual perception of [my son] as a baby [was as a] spirit thinly veiled by a body of flesh and growing into this world gradually. I was unwilling to vaccinate because I do not believe that my child is designed by the universe/God to have poisonous substances, viruses, and other foreign substances injected into him. There is a natural and divine order in which human beings flourish and this does not include injecting things into a human being. I have felt a sacred duty to protect my son from harm as much as possible. I do not want him to be injected with potentially harmful substances.[76]

In equating vaccines with poisonous substances, the parents highlighted the importance of clean blood as an indication of spiritual purity, which in turn was a determinant of whether a body could flourish within the natural order. Other parents specified that their reasoning was based on an understanding of God's will and desires, which entailed following a natural course of life, "untainted by man."[77] These beliefs were like vaccine-hesitant parents more broadly who held to naturalistic understandings of chemical toxins as corrosive to human bodies.

Second, parents reasoned that because it was preventative it was therefore unnatural. Invoking the values of anthroposophy, parents expressed a strong preference for their children to experience illnesses that would "create an immune system that fosters the spirit's integration with its four 'bodies.'"[78] Just as Sayer Ji and other

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[76] P.J. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.
[77] Green Meadow Affidavits – LK, LP, MP, TT, VL. For the cited language, "untainted by man," see Affidavit TT.
[78] L.P. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.

influential conservative-alternative health websites argued at this time in 2019, natural immunity was superior to synthetic immunity. In numerous affidavits, parents argued that vaccines were a type of "pre-emptive strike on the body" that was unnaturally harsh and would interfere with the body's "story."[79] As K.K. explained, "while illness may introduce short-term (acute) suffering, it is meaningful in the process of the incarnating spirit; toxins from vaccines (chronic) are not."[80] The likening of vaccines to "pre-emptive strikes" was almost a direct quote from a book by Thomas Cowan, a natural health practitioner and formerly accredited medical doctor whose license was revoked by the state of California in 2020. In his book, *Vaccines, Autoimmunity, and the Changing Nature of Childhood Illnesses*, Cowan argued:

> When we always strike preemptively by overvaccinating, overpathologizing, and overtreating children from a very young age, we forfeit the opportunity to develop a deep understanding of the people we love, and want to know, best. If nursed through an illness, once the child is well, he's felt his parent's presence when it was needed. And the parent has developed experience on which to draw when accompanying him through other 'battles'…Wise parents know that it's not our job to orchestrate the world so that our children never encounter any conflict or challenge…[81]

The "preemptive strike" rhetoric illustrated the shared resources and media that vaccine hesitant parents consumed. These collective resources led them to affiliate with a network of similarly minded people who were united in a moral community.

In the third truth-claim, Green Meadow parents argued that their parental roles were a divine right or sacred responsibility. Citing scriptural passages, a parent explained

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[79] K.K. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.
[80] K.K. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.
[81] Cowan, *Vaccines, Autoimmunity, and the Changing Nature of Childhood Illnesses*, 77.

that having a divinely ordained responsibility to their child led them to research the safety of vaccines.[82] After doing so, they opted not to vaccinate out of concern for safety risks. Their religious exemption, then, was based not on a particularly spiritual view of their child, but instead on the sacrality of their relationship to that child. In agreement with this view, a different parent, L.P., explained:

> It is my deeply held spiritual belief that my daughter chose me prior to birth to help usher her through life in this incarnation. I cannot know what my daughter's past lives were nor what her future lives will be, but I do believe in God and karma. I know that after death I will have to see all of my mistakes and missteps played back to me in painful detail.[83]

While L.P. did not name a religious affiliation, they implied that vaccinating their daughter would, at least potentially, qualify as a "mistake or misstep" that they would have to account for to God. L.P.'s theological reasoning resembled that of other vaccine-hesitant parents who deemed the "passive" risk of illness more acceptable than the "active" risk of vaccine-related injury. Vaccination was "actively chosen" by the parent, went the familiar logic. In L.P.'s assessment, this choice would cause both this-worldly psychological consequences of guilt or pain and karmic ones affecting their placement in an afterlife or next life.

The Green Meadow Waldorf School parents prevailed in their case against Rockland County, but the costs were steep, as many children missed nearly six months of school. State and local officials had denigrated the parents' religious beliefs as "mentally nebulous," "dubious," and "insincere," but ultimately the New York State Supreme Court

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[82] M.R. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019. M.R. cites Psalm 127:3, "children are a gift from God," and 1 Timothy 5:8, "care and welfare of the children."
[83] L.P. Affidavit, M.A. *v.* Rockland County Department of Health, Filed April 3, 2019.

justice who ruled on the case granted the injunction because their pre-existing religious exemptions were valid.[84] In turn, Ed Day, the Rockland County Executive, rescinded the vaccination mandate and implemented a "state of emergency" because of the ongoing measles epidemic. Unvaccinated children at both Green Meadow and the yeshivas in Monsey returned to school.[85]

**Grassroots Medical Freedom Activism and Homeschooling**

The repeal of California's religious exemption in 2015 catalyzed a grassroots medical freedom movement that sprouted independent lobbying efforts in every state. These groups, both new and reinvigorated, organized anti-mandatory-vaccine rallies at state capitals, researched and disseminated information about proposed legislation and politicians' records, and created statewide networks to counsel vaccine-hesitant parents on how to exercise their rights, or find loopholes, when it came to vaccine refusal. Soon after California was lost, neighboring Oregon and Washington proposed bills to eliminate exemptions, but grassroots groups successfully killed the legislation.[86]

In Texas that year, Jackie Schlegel, a single mother who believed one of her children had been injured by a vaccine, founded Texans for Vaccine Choice (TFVC) in response to a bill that would have eliminated the state's nonmedical "conscience" exemption. Within two years, TFVC was a registered political action committee (PAC)

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[84] Ginia Bellafante, "Why Are There Religious Exemptions for Vaccines?" *New York Times*, April 12, 2019.
[85] Robert Brum, "Measles: Rockland Asks Judge to Dismiss Lawsuits vs. Emergency Order," *The Journal News*, May 3, 2019; Freytas-Tamura, "Bastion of Anti-Vaccine Fervor."
[86] Laurel Rosenhall, "Mandatory Vaccine Bill Fails in Oregon, Washington," *The Sacramento Bee*, March 13, 2015.

focused on maintaining "vaccine choice" by scoring lawmakers by their views on mandatory vaccination, parental rights, and beliefs about the causes of autism.[87] For medical freedom advocates, these were the litmus tests that politicians needed to pass to earn their votes. When vaccine-preventable diseases broke out around the state, TFVC posted updates on social media to verify or debunk news coverage in real time. In a style derivative of then-President Donald Trump, TFVC mocked local and national news coverage of measles outbreaks in Texas to raise doubts about the severity and scope of these outbreaks. In a Facebook post on August 15, 2018, TFVC wrote:

> Did you hear?? KTXS Television in Abilene wants you all to know that the CDC is monitoring a "NATIONWIDE" (???) MEASLES OUTBREAK RIGHT HERE IN TEXAS!! Be afraid! Be so afraid that you grab the pitchforks and torches, fight with the other parents in your community, and willingly hand over your medical freedom to the state RIGHT NOW TO SAVE US ALL!
>
> Oh, but wait. THERE IS NO MEASLES OUTBREAK IN TEXAS. Somehow they left out the part of the story where there have only been SIX cases of measles in Texas so far in 2018. Remember those? The Ellis County cases they tried to scare everyone with back in JANUARY? Yeah. That's it.
>
> Are you tired of being played yet, Texas?[88]

Twelve days later, TFVC posted about a measles outbreak in Plano, Texas, announcing, "We have been in contact with state & local health departments and since we are firm believers in FACTS OVER FEAR, we have your FACT-BASED update here."[89] The post listed the protocols that the high school where the case had been found would be

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[87] Renuka Rayasam, "Small Anti-Vaccine PAC Has Outsize Clout in Texas Politics," *Politico Pro*, September 1, 2017.
[88] Texans for Vaccine Choice, "The Day the Texas Sky Fell: The Measles Outbreak of Fake News Proportions," Facebook post (August 15, 2018), https://texansforvaccinechoice.com/the-day-the-texas-sky-fell-the-measles-outbreak-of-fake-news-proportions/, Accessed September 5, 2022.
[89] Texans for Vaccine Choice, "Measles in Plano," Facebook post (August 27, 2018), https://texansforvaccinechoice.com/measles-in-plano, Accessed September 5, 2022.

following, as well as information about what to expect in a typical case of measles. TFVC's approach in these types of posts was to become an alternative source of news about measles outbreaks, claiming that they had facts rather than the propaganda being put out by traditional news sources. In short, they insinuated that other news sources were "fake news," and they established themselves as alternative authorities, not only about vaccine policy, but also about disease management.

TFVC's founders, white evangelical women, who called themselves "mad moms in minivans," framed their advocacy as being blessed by God.[90] In a blog post following the 2018 midterm elections, Schlegel lamented the national Democratic sweep of Congress before writing a short rallying cry for TFVC to continue its work: "While theological debates lose me, and I am not shy about the fact that I still feel like the most unlikely person on the face of the earth to share this message, I would be remiss to not acknowledge how I fight *MY* battles – how we at TFVC fight our battles. Spoiler alert: We don't. God does."[91] Schlegel identified vaccine choice as a Christian issue, and her organization as doing God's work. Her co-founder, Star Stevens, the wife of a Baptist preacher and mother of a vaccine-injured son, accused all Christians of failing to properly claim the issue of vaccine injury. In a blog post, she argued that it was immoral for Christians to not support vaccine choice because vaccines were dangerous and injury victims received poor treatment.[92]

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[90] Sophie Novack, "How 'Mad Moms in Minivans' Injected Themselves into Texas' Anti-Vaccine Debate," *Texas Observer*, August 8, 2017.
[91] Jackie Schlegel, "This Is How We Fight Our Battles," Texans for Vaccine Choice Blog (2018), https://texansforvaccinechoice.com/this-is-how-we-fight-our-battles, Accessed September 5, 2022.
[92] Star Stevens, "We Would Like to Apologize," Texans for Vaccine Choice blog (November 20, 2018), https://texansforvaccinechoice.com/we-would-like-to-apologize, Accessed September 5, 2022.

TFVC was not alone in asserting that vaccine choice was a Christian issue. Conservative-alternative health blogger Megan Redshaw argued that Christians should disregard doctors *and* pastors if they promoted vaccination. She warned parents against being deceived by "pro-vaccine advocates" who might use Christian spokespeople to "tell you to get vaccines in the name of 'loving your neighbor' and all that."[93] Redshaw's ire was particularly stoked by the interjections of Christian pastors who spoke positively about vaccination. She wrote mockingly, "If your pastor says it's okay…then it must be okay, right? No…Because your pastor isn't Jesus and probably hasn't read the vaccine inserts or additives list…like many Christians, he [probably] hasn't even thought about [vaccine safety]."[94] Similar to the logic employed in the PEACH pamphlets that instructed *haredi* women not to trust their rabbis on the topic of vaccination, Redshaw's argument also rejected the authority of religious and medical professionals. Instead, she employed the mother warrior ethic: Mothers know better and do more to care for their children than anyone else.

Not all grassroots medical freedom organizations were overtly religious. Perhaps because they were from more religiously diverse states, Health Choice Vermont and CaliVaxChoice, for example, did not link their advocacy to religious identity. However, by the mid-2010s, virtually all medical freedom groups had the same goal: to keep religious exemptions from mandatory vaccines legal. This dedication to the religious exemption, even by secular organizations, generated skepticism from pro-vaccine

[93] Megan Heimer (Redshaw), "God Does Not Support Vaccination," *Living Whole Blog*, July 7, 2014.
[94] Redshaw, "God Does Not Support Vaccination."

policymakers. Those in favor of mandating vaccination believed that hotspots were the result of the religious exemption being employed as a loophole. In other words, many policymakers doubted the sincerity underlying religious exemption requests. With mercury-autism theory very much alive, and other conspiracy theories and safety concerns dominating vaccine-hesitant discourses, policymakers feared that misinformation was the true cause of hesitancy and skepticism. They reasoned that if misinformation caused parents to fabricate religious reasons to avoid vaccines, then states should implement bureaucratic deterrents to obtaining religious exemptions.

Over the decades since mandates for routine vaccination were implemented, a contingent of parents who staunchly opposed vaccination for their children opted for alternative schooling methods. In the late 2010s as access to NMEs grew more difficult, the number of children receiving alternative or homeschooling increased. While government oversight varied by state, private schools have been less regulated than public schools, and homeschooling has historically had even fewer restrictions.[95] Circa 2019, researchers looked at the decrease in children enrolling in preschool and public

[95] James G. Dwyer and Shawn F. Peters, *Homeschooling: The History & Philosophy of a Controversial Practice* (Chicago: University of Chicago Press, 2019), 95; Emily R. Zier and W. David Bradford, "To Attend or Not to Attend? The Effect of School-Immunization Exemption Policies on Enrollment Rates for Prekindergarten, Kindergarten and Elementary Aged Youth," *Vaccine* 38 (2020): 2578-2584; Donya Khalili and Arthur Caplan, "Off the Grid: Vaccination Among Homeschooled Children," *Genetics and Group Rights* (Fall 2007): 471-477. Khalili and Caplan argued in 2007 that the rate of homeschooling was increasing rapidly and that many states did not regulate vaccinations enough to maintain herd immunity in certain communities. They advocated states follow the lead of North Carolina to implement laws to require homeschooled children to receive routine childhood immunizations.

kindergarten in favor of homeschool. Thirty percent of new homeschooling parents believed vaccines could cause learning disabilities.[96]

As the measles epidemic in New York began to wane, the state's legislature voted to remove non-medical exemptions, following California's lead from 2015. At the start of the 2019 school year, the new requirement left 26,000 New York children in limbo, and their parents faced the same decision that the Green Meadow and ultra-Orthodox Jewish parents had earlier that year.[97] Blogs, subreddits, and private Facebook groups lit up with questions about homeschooling. Parents created websites with resources about homeschooling that provided state-specific procedures and legal forms, exemption criteria, and even the names and contact information of lawyers who were sympathetic to vaccine abstention.[98] New businesses sprouted up, advertising homeschooling materials for a clientele focused on "medical freedom and parental rights."[99] Social media conversations functioned as imagined communities of parents who shared the same fears and beliefs, building a type of camaraderie that many could not find in their normal social

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[96] Zier and Bradford, "To Attend or Not to Attend," 2580; Aurie Good and Marci Goodwin, "The Great Vaccination Debate," Snarky Homeschool Moms Podcast, Episode 15 (April 3, 2018); "It's Not About the Vaccines," As For Me and My Homestead Blog (March 18, 2019), https://asformeandmyhomestead.com/its-not-about-the-vaccines, Accessed September 10, 2022.

[97] Sharon Otterman, "Get Vaccinated or Leave School: 26,000 N.Y. Children Face a Choice," *New York Times*, September 3, 2019.

[98] Rita Palma's "Homeschooling 101," based in New York, is an example of a homegrown website devoted to state-specific resources for homeschooling and vaccine exemption. The "Snarky Homeschool Moms" podcast and Modern Alternative Mama website represent other examples providing health and education advice as well as camaraderie. On homeschooling to avoid vaccination in New York, see: Alexa St. John and Melanie Grayce West, "Antivaccination Groups in New York Push Homeschooling; Some Parents Look for Ways Around New Law That Eliminates Religious-Belief Exemption," *The Wall Street Journal*, July 4, 2019.

[99] Soumya Karlamangla, "More Parents Who Oppose Vaccines Are Choosing Homeschooling in California," *The Los Angeles Times*, July 23, 2019; Ginia Bellafante, "How Far Would You Go to Avoid Vaccinating Your Child?" *New York Times*, September 13, 2019.

lives. In their messages was a commitment to individualism and freedom of conscience that, paradoxically, created a diverse but united community of likeminded people. This community connected around its commitment to values that differed from mainstream public health mandates and dissented from the authority of biomedical doctors.

In a 2019 blog post, Redshaw provided a recipe for a "detoxification bath" and other home remedies to help children "biologically process" the chemicals contained in vaccines that many parents found concerning. Commenting on the post, "Liz in New York," wrote:

> Thank you so much for this! Your advice and suggestions are invaluable. Our religious exemption was just taken away in New York State and as we all know a medical exemption is almost impossible to come by. The government and state officials don't care about our children they only care about their profit margin [sic]. We are doing our best to protect our children and I pray and hope that we were all successful in whatever choices we make. Sending all of us positive and healing vibes.[100]

Throughout the 700-plus comments on this blog post, parents lamented the loss—or potential loss—of religious and philosophical vaccination exemptions and shared tips for complying with laws in ways that minimized perceived risks of vaccines. The comments also sparked diatribes and moralistic barbs. Some commenters advised others to move to a different state or homeschool if they no longer had legalized exemptions, implying that doing anything less would be immoral, irresponsible parenting. A Californian lamented to Redshaw: "[The state] is making it so hard for us non vaxxers…I will have to vaccinate [my daughter] …I am left with no choice."[101] Redshaw responded directly,

[100] Megan Redshaw, "A Gentle Vaccine Detox For Children," *Living Whole Blog*, July 23, 2019.
[101] Redshaw, "A Gentle Vaccine Detox For Children."

"You could homeschool her? It's not hard." This led to a conversation within the comments section about whether sacrificing income from working outside the home was worth preventing vaccination. Some commenters pointed out that utilizing alternative forms of schooling was often economically prohibitive. These conversations illuminated socioeconomic divisions among commenters and posters, shedding light on the expenses—financial, emotional, psychological, social—of avoiding mandatory vaccination.[102] These expenses were paid primarily with maternal labor, but they also required disposable incomes that could afford private school tuition, homeschool educational materials, and alternative healthcare providers who did not accept insurance.

Measles hotspots illuminated how vastly different religious communities could oppose vaccination—and the lengths that parents, particularly mothers from all over the country would go to avoid it. The traditional vaccine skeptics of the 1990s and early 2000s remained, but there were newcomers, too. They were politically conservative and motivated by the freedom arguments of the day. An unlikely alliance formed on the ground around the populist notions of medical freedom, vaccine choice, parental rights, and religious freedom. As a result, vaccine-hesitant people identified their hesitancy as *religious* than ever before. During the 2010s, the return of measles in hotspots with high numbers of unvaccinated people around the country flummoxed doctors, researchers, and policymakers. They asked: Why were so many Americans opting out of routine childhood vaccinations? How were such different communities—traditionally religious

[102] Jack Healy and Michael Paulson, "Vaccine Critics Turn Defensive Over Measles," *New York Times*, January 30, 2015.

and not—involved in the same cause? And was there a larger strategy guiding the new religious liberty coalition? Measles epidemics of 2018-2019 did not persuade refusers to vaccinate. Instead, they had the paradoxical result of increasing vaccine hesitancy. Vaccine hesitancy was now a movement, and it was gathering steam in a deeply divided country. As the Republican Party increasingly backed vaccine choice, vaccine hesitancy assumed more legitimacy among a growing minority of Americans. New spokespeople and financial donors helped to politicize and monetize vaccine fears. The resulting discord was powerful enough to be weaponized by Russian bots, secretive charitable organizations, and culture warriors.

# CHAPTER EIGHT

## Mainstreaming Doubt

On the evening of September 16, 2015, fifteen contenders for the Republican presidential nomination stood on stage beneath the hot lights of the Ronald Reagan National Library. At the time, future president Donald Trump was an icon of American capitalism and reality television, but standing alongside seasoned governors and senators, he was just one candidate in a crowded field. Six months earlier, the Disneyland measles outbreak and the discovery of under-vaccinated hotspots had surprised many. The candidates now knew there was a cadre of Americans who were opposed to vaccinating their children. When it came time to weigh in on vaccine policy, Trump launched into a characteristically long and rambling statement:

> I'm totally in favor of vaccines…But I want smaller doses over a longer period of time. Because you take a baby in—and I've seen it, I've seen it, and I had my children taken care of over a long period of time. Same exact amount, but you take this little beautiful baby, and you pump—I mean, it looks just like it's meant for a horse, not for a child, and we've had so many instances, people that work for me. Just the other day, two years old, two and a half years old, a child, a beautiful child went to have the vaccine, and came back, and a week later got a tremendous fever, got very, very sick, now is autistic…I'm in favor of vaccines, do them over a longer period of time, same amount…I think you're going to see a big impact on autism.[1]

Trump had given almost the exact response three years earlier during an interview on *Fox & Friends* at the launch of Autism Awareness Month.[2] Now in 2015, vaccines and autism were recurring topics of political concern during the primary season, and the Republican presidential candidates muddled the CDC's assurances of vaccine safety.

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[1] "Wednesday's GOP Debate, Annotated," *The Washington Post*, September 16, 2015.
[2] Torie Bosch, "Donald Trump Enters into Anti-Vaccine Quack Territory," *Slate*, April 3, 2012.

During the debate and on the campaign trail in 2015, Kentucky Senator Rand Paul, a medical doctor, argued against vaccine mandates, juxtaposing them with parents' rights. In an interview, Paul asserted that "the state doesn't own your children. Parents own the children, and it is an issue of freedom and health. I'm not arguing that vaccines are a bad idea, I think they are a good thing, but I think the parent should have some input."[3] In the same television interview, Paul mentioned that he had heard of examples of children developing "profound mental disorders" after they were vaccinated. Fellow candidates Ben Carson, a retired pediatric neurosurgeon, and New Jersey Governor Chris Christie also equivocated over vaccine policies and on the debunked vaccine-autism theory.[4] A new political dynamic was emerging across the United States. When Republican candidates argued for parental choice over vaccination, many conservatives applauded. And when the mainstream news media lambasted them as anti-science, many conservatives applauded even louder. Ultimately, all the candidates attempted to assure the public that vaccines were generally good, but they supported parental choice over mandatory vaccination.

Across the aisle, with measles cases increasing and vaccination rates decreasing, the Obama Administration and 2016 Democratic presidential candidate Hillary Rodham Clinton urged parents to vaccinate their children and follow the CDC's recommended immunization schedule. Obama referred to "the science" of vaccines as "pretty

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[3] Elise Viebeck, "Rand Paul: Parents 'Own' Children, Not the State," *The Hill*, February 2, 2015).
[4] Michael Barbaro, "Christie Says Parents Should Have 'Choice' on Vaccines," *New York Times*, February 2, 2015; David A. Graham, "Courting the Anti-Vax Vote," *The Atlantic*, February 2, 2015; Michael E. Miller, "The GOP's Dangerous 'Debate' on Vaccines and Autism," *The Washington Post*, September 17, 2015.

indisputable," and Clinton tweeted, "The earth is round, the sky is blue, and #vaccineswork."[5] Both Obama and Clinton lauded science as correct and trustworthy, implicitly arguing that to abstain from vaccines was synonymous with ignorance. For Democrats, "I trust science" became a partisan rallying cry over the following years. For those who had reservations about the safety of vaccines or who were swayed by the arguments for medical freedom, the slogan was a source of alienation. There were many public figures who sought to energize and politicize that disaffection.

The measles epidemic was not only caused by grassroots hesitancy and vaccine abstention. It was also fueled by powerful public figures who fused vaccine hesitancy with libertarianism, and medical freedom with conservative politics. These figures spread misinformation about vaccines and framed "vaccine safety" as a Republican concern. In doing so, they implied that Democrats did not care about safety *and* that vaccines were unsafe. Their message found resonance with vaccine-hesitant people who were concerned about the fallout from measles outbreaks between 2015-2019. State legislatures were considered removing religious exemptions to curb infection rates, and this led medical freedom groups to grow in number. Now that vaccine mandates were on the ballot in dozens of states hesitancy *was* a political issue.

The disparate factions who espoused vaccine hesitancy over the preceding forty years had always been dominated by mothers fighting for the individual healthcare of their children or for their spiritual practices. But, with Trump's arrival into presidential

[5] Trevor Eischen, "Obama Urges Vaccinations," *Politico*, February 1, 2015; Abby Phillip, "Hillary Clinton Likens Anti-Vaxxers to Science Deniers," *The Washington Post*, February 3, 2015.

politics, these factions coalesced into a movement characterized by machismo and defiance. It attracted more white men and high-profile advocates. Its balance of power, traditionally weighted in the apolitical grassroots, swung to the conservative Right. This swing benefited existing groups such as Children's Health Defense, founded by Robert F. Kennedy Jr. It also created opportunities for new groups to gain a following. Informed Consent Action Network (ICAN), founded in 2016, attracted millions of dollars from new financial backers and launched a streaming anti-biomedicine talk show the following year. With new money came new goals and tactics. Large swaths of conservative religious groups, from white evangelical Christians to *haredim*, became either staunchly in favor of vaccine choice or anti-vaccine because of the ongoing politicization of religious liberty issues in the United States. Now branded as religious liberty, vaccine choice and medical freedom fit into the Republican Party's package of core political identity traits.

**Misinformation and Medical Freedom**

In the period of 2006 through 2011, the use of nonmedical exemptions for a mandatory vaccine increased by one percent nationally. Rates of vaccine-preventable diseases rose at a similar rate. With measles outbreaks and surprisingly high numbers of unvaccinated children in the country, states scrambled to limit or eliminate nonmedical vaccine exemptions, receiving vocal pushback from voters.[6] Grassroots lobbyists and

[6] Laurel Rosenhall, "Mandatory Vaccine Bills Fail in Oregon, Washington," *The Sacramento Bee*, March 13, 2015; Roni Caryn Rabin, "Eager to Limit Exemptions to Vaccinations, States Face Staunch

national organizations engaged in these battles, effectively killing many pieces of legislation that would have done away with religious or philosophical exemptions. The relative difficulty of obtaining a nonmedical exemption varied across state lines. In the most lenient states, parents were required to complete and sign a standardized online form that was available stating they had an objection to vaccines. In semi-lenient states, parents needed to obtain a standardized form from their local health department, often in hard copy, attend a vaccine education session with a nurse, or compose an original statement of objections that discussed how immunizations violated their religious and/or philosophical beliefs. New religious organizations often provided standard language, such as a "statement of belief," for people to submit with their applications. The educational sessions varied at the discretion of the state. Some sought to teach parents about the medical benefits of vaccination and assuage safety fears, others addressed religious objections specifically. In the strictest states, parents completed a form and wrote a letter explaining their opposition to immunizations, and these documents needed to be signed by a notary public.[7]

The logic behind stricter rules was simple: deterrents to obtaining nonmedical exemptions would decelerate their usage. Legislators and public health officials assumed, correctly, that the more arduous steps parents had to take to obtain the exemption, the less likely they would be to complete them.[8] In turn, exemption deterrents would result in

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Resistance," *New York Times*, June 14, 2019; Sharon Otterman and Tracey Tully, "Strict Vaccine Law Stumbles in N.J. Legislature," *New York Times*, December 16, 2019.

[7] Nina R. Blank et al., "Exempting Schoolchildren from Immunizations: States With Few Barriers Had Highest Rates of Nonmedical Exemptions," *Health Affairs* 32, no. 7 (2013): 1282.

[8] Nina R. Blank et al., "Exempting Schoolchildren from Immunizations."

more children getting vaccinated. However, these deterrents attracted the attention of medical freedom and religious freedom groups, who found them burdensome and discriminatory. For example, in Michigan, from 2015-2016, the Department of Public Health and Human Services (MDHHS) protocol for issuing exemptions required petitioners to partake in an educational session with a nurse who had been trained in having such conversations. Nurses were provided with a training document titled, "Religion," which explained:

> Objection to vaccine for religious reasons may be masking the parent's or guardian's real question regarding safety, which is not a true religious objection. This would be a philosophical objection. However, understanding and acceptance may need to occur in regard to a person's religious beliefs.[9]

The training guide listed eight different religious traditions, accompanied by potential "religious reasons" that adherents might state to obtain a religious exemption. Beside each reason, the guide offered simple rebuttals. In short, there was a pro-vaccine religious answer for each religious concern. Hypothetically, if a Buddhist mother walked into a Michigan public health office to obtain a religious exemption for her child citing her Buddhist beliefs, she would be instructed by a nurse that Buddhists are actually encouraged to vaccinate because of two overarching principles of the tradition: "respect for all life, favoring nonviolence" and "the need to sustain human life, with regretful acceptance of cooking food, boiling water, using antibiotics and vaccines."[10] This tactic drew on the authority of religious leaders and doctrine to sway would-be abstainers

[9] Michigan Department of Public Health and Human Services. "Religion," February 4, 2015. This document is no longer utilized by Michigan Public Health and Human Services; Author written communication with Terri Adams, Director, Division of Immunization, Michigan Department of Public Health and Human Services, February 11, 2022.
[10] Michigan Department of Public Health and Human Services. "Religion," February 4, 2015.

toward vaccination on religious grounds. Given the historical trends of religious vaccine hesitancy toward individualized embodied knowledge and sacralized mothers as the ultimate authorities on vaccination, it is unsurprising that this public health attempt at basic religious literacy was unsuccessful. It was a short-lived policy that became a proving ground for legal religious freedom opposition.

In 2016, Tara Nikolao, a nurse and practicing Catholic from Michigan, sued the Wayne County Department of Health and Human Services for obstructing her First Amendment rights and her right to obtain a nonmedical exemption. She had previously received ten religious exemptions from the state for her children. According to her legal representation at the Thomas More Law Center, a nonprofit public interest law firm devoted to litigating religious liberty cases, Nikolao was subjected to "coercive bullying" and had been "forced to submit to a religious inquisition on the substance and logic of [her] beliefs and endure false and misleading State-sponsored religious instruction about [her] beliefs."[11] Although the case was thrown out of the District Court of the Eastern District of Michigan during the judicial process, the Department of Public Health and Human Services voluntarily opted to remove the "Religion" document from its website and to eliminate religiously-based content from its training procedures.[12]

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[11] *Tara Nikolao v. Nick Lyons*, 875 F.3d 310 (E.D. Mich. July 7, 2016); Thomas More Law Center, "Michigan's Systemic Inquisition of Parents Over Religious Objections to Vaccines Leads to Federal Lawsuit by Thomas More Law Center." https://www.thomasmore.org/news/michigans-systematic-inquisition-parents-religious-objection-vaccines-leads-federal-lawsuit-thomas-law-center/. Accessed March 23, 2022.

[12] Terri Adams, Director, Division of Immunization, Michigan Department of Public Health and Human Services, email to author, February 11, 2022.

This case represented three key driving issues of the vaccine choice movement during the late 2010s. First, even in states where religious exemptions remained on the books, there were significant hurdles for parents seeking to obtain them. These obstacles caused many parents to turn to online communities to help them find loopholes or gain insight into the processes they needed to undergo. Second, state governments likely saw parents' requests for religious exemptions as insincere. Third, in a more politicized landscape, governmental judgments of sincerity or religious reasoning were considered infringements into individual and family medical and religious matters. Anti-mandate agitators framed vaccine hesitancy as "vaccine choice" and, more broadly, as "religious liberty" and "medical freedom."

By the time of the 2016 presidential campaign between Trump and Clinton, vaccines were a politically divisive issue, with Republicans and conservatives taking the mantle of vaccine choice and Democrats asserting a "pro-science," "pro-biomedicine" agenda. These divisions had never existed before, and the political landscape was already a powder keg of polarization. To help swing the election toward Trump, Russia, led by Vladimir Putin, attempted to deepen these cultural divisions in the United States by implementing a cyber misinformation campaign under the name Information Research Agency.[13] As part of investigations into this attempt to manipulate the election, journalists found that Russian bots and cyber trolls impersonating real people planted inflammatory vaccine-related messages in Americans' social media feeds. Democrats

[13] Robert S. Mueller, III, "Report On The Investigation Into Russian Interference In The 2016 Presidential Election, Volume 1," United States Department of Justice (March 2019), 22.

received pro-vaccine messages such as "Do you still treat your kids with leaves? No? And why don't you #vaccinate them? It's medicine!"[14] The messages disparaged vaccine-hesitant people (Republicans) by insinuating that they were ignorant, even idiotic. Republicans, in turn, saw Facebook posts and tweets such as, "Don't get #vaccines. The Illuminati are behind it."[15] Playing into conspiracy-based thinking about a global cabal trying to poison or brainwash people using the serum in vaccines, many Republicans came to see those who were "pro-vaccine" (Democrats) as affiliated with a coercive enemy.

This manipulative content was also disseminated as memes, or images overlaid with text, which were highly shareable and quickly went viral across millions of echo chambers on the internet. They spread what technology researchers called a "misinfodemic," in which viral online content was also responsible for the spread of biological disease, such as measles.[16] Vaccines were only one topic that the Russian Internet Research Agency used to deepen divisions in the United States. They also published provocative content about Black Lives Matter, immigration, LGBTQ groups, and Muslim communities.[17] Given the depths of racial and religious tensions in the United States, that a foreign adversary would deem vaccines a similarly divisive a topic was evidence of how much they had become markers of cultural and political identity.

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[14] Donald G. McNeil Jr., "Russian Trolls Used Vaccine Debate to Sow Discord, Study Finds," *New York Times*, August 23, 2018.
[15] McNeil Jr., "Russian Trolls."
[16] Nat Gyenes and An Xiao Mina, "How Misinfodemics Spread Disease," *The Atlantic*, August 30, 2018.
[17] Mueller, "Report On The Investigation," 25.

Russia's misinformation campaign in 2015-2016 had a profound impact on American vaccine culture. First, it clarified two neat, black-and-white "sides" in a "vaccine debate." Vaccine hesitancy had been a spectrum of grays, a rare topic on which people of different backgrounds and political and religious persuasions found common ground. Vaccines had historically been a topic with allowances for ambiguity and discussion, particularly during the 1990s and early 2000s. As vaccination was politicized, it was dangerously oversimplified. This reduction in complexity proscribed dialogue, forcing people's moral and medical judgments to become entangled with their political identities. The intractable public debate over abortion, another medical procedure, illustrates how destructive this dynamic can be.

Second, the spread of online misinformation was so rapid and destabilizing that technology companies censored content that diverged from public health standards. Although this may have been a desirable outcome for many liberals and public health officials, it was a catalyst for radicalizing many who found themselves in the "anti-vaccine" camp. In the blink of an eye, companies such as Amazon, Apple, Facebook, and Pinterest removed anti-vaccine opinions and data that were not scientifically proven, deeming it "harmful content."[18] These moves also included closing or pausing the social media accounts of prominent leaders, a practice known as "de-platforming."

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[18] Lindsey Bever, "Amazon Pulls Books Promoting False Claims About Autism and Vaccines," *The Washington Post*, March 18, 2019; Julia Belluz, "Instagram, Facebook, and YouTube Are Cracking Down on Fake Vaccine News," *Vox*, March 22, 2019; Morgan Gstalter, "Amazon Reportedly Pulls Anti-Vaccine Documentaries," *The Hill*, March 2, 2019; Julia Carrie Wong, "Anti-Vaxx Propaganda Has Gone Viral on Facebook. Pinterest Has a Cure," *The Guardian*, February 21, 2019; Brandy Zadrozny, "Amazon Removes Books Promoting Autism Cures and Vaccine Misinformation," *NBC News*, March 12, 2019. Also see H. Innes and M. Innes, "De-platforming Disinformation: Conspiracy Theories and Their Control," *Information, Communication & Society* (October 28, 2021).

Historically used to prevent the spread of fascist or violent hate speech, to vaccine skeptics, de-platforming on this matter felt aggressive and corrupt. Now when a prominent leader's social media account was suspended against his wishes, he needed to find a new online platform and rebuild his digital following. For followers, the result of these actions by social media companies was that whole sections of their digital worlds were shut down and erased from history. In many cases, they were, at least temporarily, disconnected from personal social networks and the conversations in which they participated. Many felt that corporations were acting aggressively toward them and their friends, both real and virtual. For those who had received anti-vaccine propaganda unknowingly and believed it, these corporate actions were not a public health initiative. Rather, they were discrimination against their personal identities, bodily autonomy, and populist commitments. They were violations of religious liberties. Vaccine safety—and choice—became another battle in the culture wars.

During the 2010s, conservatives adapted the capacious principle of religious freedom into a narrower framework called "religious liberty," which had become a "sensitive political issue."[19] This seemingly minor linguistic change from freedom to liberty grew out of reactions that white evangelicals, and some conservative Catholics,

[19] Melissa Maynard, "Religious Liberty Emerges as Sensitive Political Issue," Pew Charitable Trusts (September 13, 2012). The concept and application of "religious freedom" has been interrogated by many scholars of American religions. Here, I suggest that the concept was publicly accepted as consensus politics, however, I recognize that religious freedom and its legal protections have a complex history of protecting the majority, often by incentivizing the minority to acculturate. See David Sehat, *The Myth of Religious Freedom* (New York: Oxford University Press, 2011); Winnifred Fallers Sullivan, *The Impossibility of Religious Freedom* (Princeton, NJ: Princeton University Press, 2005); Tisa Wenger, *Religious Freedom: The Contested History of an American Ideal* (Chapel Hill, NC: The University of North Carolina Press, 2017).

had to two major social issues. The first was increased legal protections for LGBTQ people, including the Supreme Court ruling in support of gay marriage in *Obergefell v. Hodges* (2015). Second was the Affordable Care Act's mandate that all employers who offer insurance plans must cover contraceptives. For conservative white evangelicals in particular, these issues engendered sexual immorality and undermined the ideal of the traditional family. Many conservative Christians perceived such social shifts as further attacks on proper gender roles. Protecting "family values," had been premium contested territory in the culture wars since the 1960, and the release of Gardasil had elicited similar concerns.[20] Although religious conservatives could not change mainstream culture, they could change how legal provisions were used to protect themselves. Identifying as a religious minority, conservative white Christian leaders pursued a political agenda thematically arranged around cultural embattlement and discrimination.

This embattlement narrative was enacted in watershed legal cases in which Christians claimed infringement on their religious liberty. In *Burwell v. Hobby Lobby* (2014) and *Masterpiece Cakeshop v. State of Colorado* (2018), the Supreme Court narrowly upheld the rights of businesses to discriminate based on their owners' religious beliefs. In the conservative media, the slim 5-4 margins and the *Obergefell* ruling were assaults on "religion," although the term implied white Christian evangelical people. As legal scholar Cathleen Kaveny argued, the new litigation on behalf of religious liberty was broader in intention than past religious freedom cases. Plaintiffs "[did] not seek merely to be left alone. Instead, they wish[ed] to convince the country that their moral

[20] Dowland, *Family Values*.

views describe[d] the correct way to live, not only for Christians, but for everyone."[21] In other words, to be more religious was to be more socio-politically conservative.[22] Against this backdrop, misinformation and politicization pushed opinions about vaccines into religio-political classifications. These associations with political party had little to do with sexual mores, but for conservative Christians who felt embattled by liberal and mainstream culture, the threat to religious exemptions—bolstered by false facts about vaccine dangers—represented more than just vaccine choice. This focus on religious liberty allowed newcomers to align themselves with minority groups, such as the *haredim* in New York and even Somali Muslim immigrants in Minnesota. Vaccines also primarily concerned children, making them a family or parental rights issue. Although vaccine skeptics had argued for the parental right to refuse vaccination of their children for centuries, the arguments rang differently for twenty-first century conservatives. Interpreted through a libertarian lens, family values were threatened when parental rights were threatened. Mainstream culture was a problem, but the state was an enemy.

**Financing Medical Freedom**

In the late 2010s, some of the most influential organizations focused on vaccine safety and vaccine-autism awareness radicalized, coinciding with the Trump

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[21] Cathleen Kaveny, "The Ironies of the New Religious Liberty Litigation," *Daedalus* 149, no. 3 (Summer 2020), 74.

[22] Pew Charitable Trusts, "The Religious Typology" (August 29, 2018), https://www.pewforum.org/2018/08/29/the-religious-typology, Accessed March 23, 2022. According to Religious Studies scholar Lauren Kerby, the result was the "erasing [of] expressions of religion that [did] not fall into the straight and narrow path of conservative white evangelicalism." Kerby, *Saving History*, 144.

presidency.[23] Echoing the extreme populism of Trump's rhetoric, vaccine hesitancy and belief in vaccine choice were eclipsed by more extreme positions, including vaccine opposition and medical freedom. For vaccine hesitant people who feared losing the right to nonmedical vaccine exemptions after California and New York abolished them, the issue of medical freedom was more salient and more urgent than ever. While grassroots organizations such as Texans for Vaccine Choice were working on the ground to lobby their representatives to kill these pieces of legislation, well-funded non-profit organizations were lobbying at a higher level—both politically and logistically. Three of the most vocal spokespeople for vaccine skepticism were Andrew Wakefield, Robert F. Kennedy Jr., and the newcomer, Del Bigtree. They worked independently and together with the express mission to destabilize public trust in vaccines and biomedicine. Over a few years, they each aligned with Trump and the medical freedom movement by amplifying fear, anger, and the voices of grieving and historically disenfranchised people. They also spread scientifically disproven information at alarming rates.

*Andrew Wakefield and the Persistence of Vaccine-Autism Theory*

Andrew Wakefield became a hero among many vaccine-hesitant people in the years since his paper that launched MMR-autism theory was retracted from *The Lancet*. Although he was all-but-exiled from Great Britain after his medical license was revoked,

[23] Kiera Butler, "The Anti-Vax Movement's Shift From Crunchy Granola Purists to Far-Right Crusaders," *Mother Jones*, June 18, 2020.

Wakefield found ardent supporters and funders in the United States.[24] These followers, including Mark Blaxill, a venture capitalist, MMR-autism advocate, and 2022 Republican candidate for Congress in Minnesota's third district, helped co-found the Thoughtful House Center for Children in 2005 (now The Johnson Center for Children's Health and Development), in Austin, Texas. They also raised hundreds of thousands of dollars for the "Dr. Wakefield Justice Fund" to cover Wakefield's legal fees.[25]

Wakefield was especially popular among parents of children with autism who were dissatisfied with mainstream medical approaches to treatment and sought out alternative understandings of their children's health conditions. Beginning in the early 2000s, an "alternative autism" community aimed to fund medical research apart from the apparatuses of the National Institutes of Health (NIH), universities, or pharmaceutical companies. With Wakefield stateside, there was increased hope that, with private funding and support, he could prove MMR-autism theory (now, more broadly, vaccine-autism theory) correct. Those in the alternative autism world did not trust mainstream scientists to ask the right questions or share their data openly.[26] Instead, they published a theory of causes of autism that dissented from the theory espoused by mainstream scientists.

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[24] Susan Dominus, "The Crash and Burn of an Autism Guru," *The New York Times Magazine*, April 20, 2011; Brian Deer, *The Doctor Who Fooled the World* (London: Scribe Publications, 2020).
[25] Lena H. Sun and Amy Brittain, "Meet the New York Couple Donating Millions to the Anti-Vax Movement," *The Washington Post*, June 19, 2019.
[26] Examples of "alternative autism" publications that indict vaccines as a cause of autism include Robert F. Kennedy Jr., ed. *Thimerosal: Let the Science Speak* (New York: Skyhorse Publishing, 2015); Dan Olmsted and Mark Blaxill, *The Age of Autism* (New York: Skyhorse Publishing, 2010); Dan Olmsted and Mark Blaxill, *Denial: How Refusing to Face the Facts About Our Autism Epidemic Hurts Children, Families, and Our Future* (New York: Skyhorse Publishing, 2017); Andrew J. Wakefield, *Callous Disregard: Autism and Vaccines, The Truth Behind a Tragedy* (New York: Thomas Dunne Books, 2010. For more on Skyhorse Publishing's role in publishing controversial books see Keziah Weir, "Skyhorse Publishing's House of Horrors," *Vanity Fair*, September 17, 2020.

Parents who believed in vaccine-autism theory spurned traditional doctors by seeking healthcare providers who approached autism treatment differently. These providers utilized biological *and* behavioral approaches, whereas traditional autism treatment focused on behavior modification and social skill-building. Ironically, their approach to treatment was called the biomedical or "biological model."[27] The biological model of explaining autism became increasingly controversial after the *Diagnostic and Statistical Manual of Psychiatric Disorders 5* (DSM-5) was published in 2013. In that edition, autism was broadened to a "spectrum" of behaviors and intensity, utilizing the framework of neurodiversity.[28] Borrowing from the concept of biodiversity, neurodiversity emphasized the inclusion of difference and normalized a broad range of psychological and neurological behaviors.

Normalizing autism behaviors contradicted Wakefield's theory because it discredited the concept that autism was a "man-made epidemic" caused by environmental factors that triggered a genetic predisposition to a neurological or autoimmune disorder in

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[27] For those who espoused the biological model of autism, the condition was not a singular disorder that manifested in individuals along a spectrum of intensity caused by poor parenting or genetic mutations. Rather, autism was heterogenous—a constellation of conditions caused by biological bodily-environmental interactions gone awry. When these conditions and symptoms appeared together, they could be identified as autism. See Simon Baron-Cohen, "The Concept of Neurodiversity Is Dividing the Autism Community," *Scientific American* Blog (April 30, 2019); Olmsted and Blaxill, *The Age of Autism.*

[28] The American Psychiatric Association, which publishes the DSM, noted that in the DSM-4, autism was categorized as four different disorders. In *DSM-5*, "Autism Spectrum Disorder" was a "single umbrella term" to encompass all of these disorders and their variability. See American Psychiatric Association, "Autism Spectrum Disorder" (2013), https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA_DSM-5-Autism-Spectrum-Disorder.pdf, Accessed September 13, 2022. For a history of autism diagnoses, see Fred R. Volkmar and James C. McPartland, "From Kanner to DSM-5: Autism as an Evolving Diagnostic Concept," *Annual Review of Clinical Psychology* 10 (2014): 193-212.

some children.[29] It effectively dismissed the concept that vaccine ingredients were dangerous. Like those parents who believed their child had been injured by the DPT shot in the 1980s and found solace in the nascent organization Dissatisfied Parents Together, many parents who were drawn to the alternative autism community were searching for answers about their children's health that mainstream doctors could not answer. They felt abandoned by medical experts and sought causation and meaning for their children's behavior. In the void, thought leaders, organizations, alternative medical providers, and parents believed there was collusion between medical organizations and pharmaceutical companies to prevent researchers such as Wakefield and likeminded others from officially proving what they already believed to be true. Why? They concluded that if the biomedical establishment recognized Wakefield as legitimate, then it would lose billions of dollars in vaccine profits and uncover a cataclysmic cover-up to convince the public that vaccines were safe. Within this conspiracy theorizing, Wakefield was made into a martyr. His career and reputation had been sacrificed to the cause of vaccine-autism theory, taken from him by powerful institutions. This martyrdom narrative drove a small, deep-pocketed circle of financial backers—often parents or grandparents of children with autism—to invest in Wakefield's continued research and medical consulting in the United States.

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[29] Dan Olmsted and Mark Blaxill helped pioneer this alternative theory and created an online community based on it at the Age of Autism Blog. Olmsted and Blaxill, *The Age of Autism*; Priyanka Boghani, "JB Handley: No Study Shows Vaccines Didn't Cause My Son's Autism," *PBS Frontline*, April 27, 2015; Aurie Good and Marci Goodwin, "The Great Vaccination Debate," The Snarky Homeschool Moms Podcast, Episode 15 (April 3, 2018); Julie Obradovic, "How to End the Autism Epidemic: Tell the Truth," *Age of Autism Blog*, September 15, 2018.

Throughout the 2010s, Wakefield and others, including financiers Blaxill and JB Handley, attracted followers to the alternative autism community because their work was easily found online via the *Age of Autism Blog*, and rates of autism diagnoses were rising. A range of organizations, funded by millionaires, emerged to fight for the cause, including Generation Rescue, Defeat Autism Now!, SafeMinds, and The Canary Party. For some parents, these groups were portals to alternative autism information and supportive community. To public health officials and doctors, they were spreaders of misinformation that caused fear of vaccines and led to measles outbreaks and hotspots.

One hotspot was particularly distressing. Over the decade spanning from 2004-2014, the rate of two-year-old Minnesota-born Somali American children who were vaccinated with the MMR vaccine dropped by a staggering fifty percent.[30] In 2011, a measles epidemic erupted in Hennepin County, Minnesota, home of the largest community of Somali immigrants in the country. That population experienced numerous measles epidemics in following years.[31] Public health researchers learned that Somali immigrant mothers were concerned about high rates of autism in their community and seeking out information about its causes online. Doing their own research was understandable, but it was detrimental from a public health perspective. Researchers who studied the community's outbreaks found that simply typing "autism" into a search

[30] Victoria Hall et al. "Measles Outbreak – Minnesota April-May 2017," *Morbidity and Mortality Weekly Report*, July 14, 2017.
[31] Julia Belluz, "Minnesota's Measles Outbreak Is What Happens When Anti-Vaxxers Target Immigrants," *Vox* (October 26, 2017); Faiza Aziz and Steven H. Miles, "Measles, Autism and Vaccination in the Minnesota Somali Community," *Minnesota Medicine*, January/February 2018.

engine yielded vaccine-autism theory as the top result.[32] When they focused their research on their own community, Somali immigrants told researchers that they found contradictory information about whether vaccines violated *halal*, or Muslim religious dietary laws.[33] Some misinformation sources that mainly targeted Black Muslims ignored the pro-vaccine consensus among Muslim religious leaders. However, in combination with their concerns about autism, this additional reasoning fomented religious concerns like those of the New York *haredim*. Taking what seemed to be protective action, these mothers opted out of vaccinating their children against measles.

Online research was not the only source of vaccine-hesitancy in the community. Wakefield and Blaxill also evangelized MMR-autism theory directly to the Somali Muslim community, visiting Minneapolis to speak about autism numerous times. For one event, held during a measles outbreak, the Vaccine Safety Council of Minnesota invited Blaxill to speak at a meeting held at a Somali-owned restaurant that drew crowds concerned about the MMR vaccine and autism. Taking on the role of a health authority, Blaxill agreed that there was a correlation between the two and blamed public health authorities for promoting MMR vaccination with certainty. “When you hear people from the state public health department saying there is no risk, that [vaccines] are safe, this is

[32] Patricia Peterson et al. “Engaging Communities to Reach Immigrant and Minority Populations: The Minnesota Immunization Networking Initiative (MINI), 2006-2017,” *Public Health Reports* 134, no. 3 (2019): 241-248.

[33] Author Kevin A. Muhammad self-published numerous books on the subject which were top search results for “Muslims vaccines” on Amazon. These are no longer available. The Nation of Islam (NoI) also publishes anti-vaccine content. Later, Rizza Islam, a member of NoI, was named one of the Disinformation Dozen regarding Covid vaccination.

the sort of thing that should cause you to be skeptical," he said.[34] This argument reflected a core conundrum that public health officials and medical professionals often found themselves facing during the measles outbreaks. When they promoted vaccination with complete certainty and downplayed risk of side effects, no matter how statistically inconsequential, they were accused by skeptics of being ignorant at best and duplicitous at worst. Yet, when risks were acknowledged, vaccine-hesitant and oppositional groups amplified these concerns disproportionately, leading to reduced vaccination. As science journalist Melinda Wenner Moyer argued, this dynamic created a chilling effect on scientific research to improve vaccine technologies.[35]

Wakefield also visited groups of Somali Muslims in Minneapolis at least three times during the measles outbreaks there. Responding to a reporter who insinuated that his motives were calculated, Wakefield explained that he had visited, not to drum up vaccine hesitancy, but to address the Somali immigrants' preexisting concerns.[36] The Somali Muslim immigrant community *was* suffering from the highest rates of autism in the United States, and without causal answers from scientists and public health researchers, leaders of the alternative autism community again stepped in to provide an explanation and meaning.[37] The dynamic posed a delicate question: Were anti-vaccine

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[34] Lena H. Sun, "Anti-Vaccine Activists Spark a State's Worst Measles Outbreak in Decades," *The Washington Post*, May 5, 2017.
[35] Melinda Wenner Moyer, "Anti-Vaccine Activists Have Taken the Vaccine Science Hostage," *New York Times* August 4, 2018.
[36] Sun, "Anti-Vaccine Activists Spark a State's Worst Measles Outbreak in Decades."
[37] Elizabeth Gorman, "A Curious Connection: Autism and Minneapolis' Somali Children," *MinnPost*, July 24, 2008; Claire Laurier Decoteau, "Only 10% Human: Gut Bugs and the Curious Prevalence of Autism Among Somali Refugees," American Sociological Association (December 23, 2015); Aziz and Miles, "Measles, Autism and Vaccination in the Minnesota Somali Community."

advocates visiting vulnerable minority groups out of benevolence, for personal gain, or to promote a larger agenda? The case of measles within the Somali Muslim community represented the power that misinformation, both from online and high-profile sources, could have on an isolated minority population struggling with disease. Like New York *haredim* who received PEACH pamphlets and then suffered outbreaks of measles, Somali immigrants were provided misinformation that led them not to vaccinate their children and to experience measles outbreaks as a result.

*Robert F. Kennedy Jr. and Children's Health Defense*

In 2005, Robert F. Kennedy Jr., nephew of President John F. Kennedy and son of Robert F. Kennedy, published an article titled "Deadly Immunity" in *Rolling Stone* and *Salon* magazines. Written as an exposé, Kennedy claimed to haved uncovered corruption at the CDC dating back to meetings in 2000 about the safety of thimerosal. Kennedy cited Mark Blaxill, venture capitalist and author of *Age of Autism*, as a medical expert. He argued that thimerosal was dangerous for children, and the CDC had deliberately obscured evidence that the mercury-based vaccine preservative caused autism.[38]

Kennedy, an environmental activist and lawyer, had spent a quarter-century litigating against polluters and advocating for stricter laws to protect natural resources. He opposed efforts by corporations to dictate environmental legislation and regulations,

[38] Robert F. Kennedy, Jr. "Deadly Immunity," *Rolling Stone*, June 20, 2005. Article accessed using WayBackMachine. *Salon* retracted the article because of factual errors, and *Rolling Stone* issued many corrections. It is no longer available on *Rolling Stone*'s website. Sarah Kaplan, "The Truth About Vaccines, Autism and Robert F. Kennedy Jr.'s Conspiracy Theory," *The Washington Post*, January 10, 2017.

arguing that environmental damage, as well as corporate and political corruption were harmful to American democracy.[39] According to Kennedy, he became interested in the role of mercury in vaccines after a mother of a boy recently diagnosed with autism came to his house with "a stack of papers" and would not leave until he had read them all. The papers were scientific articles that purported a link between thimerosal and autism.[40]

Over the following fifteen years, Kennedy dug deeper into the alleged health dangers of thimerosal. He published books, produced documentaries, and founded the World Mercury Project in 2011, which became Children's Health Defense in 2018. The organization's mission was "to end childhood health epidemics by working aggressively to eliminate harmful exposures, hold those responsible accountable, and to establish safeguards to prevent future harm."[41] In 2020, Children's Health Defense had a budget of 33-million dollars.[42] The organization funded a range of initiatives ostensibly related to children's health, although its listed partners consisted only of organizations focused on vaccine hesitancy or mercury toxicity.[43] Prior to his focus on thimerosal, Kennedy was well respected by liberals and environmentalists. However, as his focus shifted, he was

[39] Robert F. Kennedy, Jr. "Keynote Address: We Must Take America Back," *Journal of Environmental Law and Litigation* 22 (2007): 201-224.
[40] Jonathan Jarry, "The Anti-Vaccine Propaganda of Robert F. Kennedy Jr.," McGill University Office of Science and Society (April 16, 2021).
[41] "The Mission of Children's Health Defense," About Us, Children's Health Defense, https://childrenshealthdefense.org/about-us/childrens-health-defense-mission, Accessed September 12, 2022.
[42] Children's Defense Fund and Children's Defense Fund Action Council Audited Financial Statements and Supplementary Information for Years Ending in 2020 and 2019, https://www.childrensdefense.org/wp-content/uploads/2021/06/Childrens-Defense-Fund-and-Childrens-Defense-Fund-Action-Council-2020-Audited-Financials.pdf, Accessed September 12, 2022.
[43] Children's Health Defense's website and newsletter, "The Defender," exclusively portrayed medical freedom and anti-vaccine messaging and calls-to-action as of 2022.

publicly disparaged for dallying in conspiracy theory by his siblings and longtime media supporters.

In an essay for the *New York Times*, liberal columnist Frank Bruni told readers that he had received many messages from Kennedy hoping for a chance to talk about vaccine safety during the lead-up to California removing religious exemptions in 2015. Bruni could never have imagined a scenario in which he would dodge calls from a member of the Kennedy family. But Robert F. Kennedy Jr. was different. He was a leading a faction of "vaccine opponents," whom he characterized as "climate-change deniers with less gluten and more Prada [who] chalk up the fact that they're in a minority to the gutless groupthink of the majority."[44] Employing an extended religious metaphor, Bruni referred to Kennedy as espousing an "anti-vaccine theology" gleaned from "the church of Jenny McCarthy…the high priestess of anti-vaccine conspiracy theories."[45] Bruni's comparison of vaccine hesitancy to a religious disposition denigrated Kennedy, vaccine skepticism, and religion. All were dangerous, dishonest, and selfish. In a letter to the editor, Kennedy responded with a similar rhetorical strategy, arguing that there was "peril in faith in government orthodoxies" and that the media had an "undue reverence for the CDC."[46] During a time when liberal outlets tended to associate religion writ large with political conservatism because of the strong influence of white evangelicals on Republican politics, it was understandable that the metaphor of blind faith would cut both ways in the *Times*. However, it had a long lineage in the history of vaccine hesitancy.

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[44] Frank Bruni, "California, Camelot, and Vaccines," *New York Times*, July 4, 2015.
[45] Bruni, "California, Camelot, and Vaccines."
[46] Robert F. Kennedy Jr, "Robert F. Kennedy Jr. On Mercury in Vaccines," *New York Times*, July 10, 2015.

When the media reduced vaccination to a yes-or-no issue, each side disparaged the other by arguing that they followed a false religion. The move was rhetorically powerful. However, it mischaracterized vaccination as an ideology rather than an embodied practice with religious implications on people's perceptions of purity, responsibility, and sacrality. It cleaved open a space for distrust and dangerous propaganda.

The propaganda exploited historically oppressed minority groups to compare vaccines and mandatory vaccination to medical evils. In 2015, Kennedy sponsored a screening of a documentary about mercury poisoning called *Trace Amounts* in Sacramento, California. As a publicity tactic, he gave free tickets to every member of the California legislature—none of whom attended. At the event, Kennedy condemned the CDC's alleged laxity in monitoring vaccine safety. Referring to vaccine-injured children, he said, "They get the shot, that night they have a fever of a hundred and three, they go to sleep, and three months later, their brain is gone. This is a holocaust what this is doing to our country."[47] Kennedy was not along in comparing mass vaccination to a holocaust. Use of the term had been gaining steam among leaders of vaccine-hesitant organizations and in public presentations and films by Wakefield, Kennedy, and Del Bigtree. These leaders employed images of Nazi concentration camps and Jewish victims as they likened vaccine scientists to nefarious masterminds or modern-day Adolf Hitlers. When addressing predominantly Black audiences, they used images from the Tuskegee Syphilis Experiment and told them that vaccines were experimental. They warned that Black

[47] Jeremy B. White, "Robert F. Kennedy, Jr. Warns of Vaccine-Linked 'Holocaust,'" *The Sacramento Bee*, April 7, 2015. Kennedy credited *Trace Amounts* with helping to kill a bill in Oregon that would have removed nonmedical vaccine exemptions, which was up for debate in 2015.

people could not trust vaccines because of medical racism, which Kennedy called "the new apartheid."[48] In these situations, powerful leaders—mostly wealthy white men—claimed to speak the truth about medical racism and the trauma experienced by people of color and religious minorities.

To his supporters, Kennedy was revered as much as Wakefield. Both had endured personal and professional consequences on account of their convictions and activism. Their quasi-martyr status reinforced supporters' understandings of themselves as embattled by a mainstream culture whose leadership was deliberately trying to hide the truth. This shared sense of embattlement strengthened the commitment of Kennedy's supporters to the vaccine choice movement. His increasing alliance with conservative politicians also provided a pathway for longtime supporters to move to the Right, too. Kennedy had always identified as nonpartisan, but given his environmentalism and liberal family, in the public eye, he was identified as a Democrat. When Kennedy took on the cause of vaccine safety, it served as a crossover issue for liberals whose primary interests were medical freedom and vaccine choice. Kennedy and Donald Trump embraced one another when Trump was the 2016 Republican presidential nominee, and

[48] Children's Health Defense produced a documentary for streaming online called *Medical Racism: The New Apartheid* during the Covid-19 pandemic. The website for *Medical Racism* listed five producers: David Centner, a tech inventor; Robert F. Kennedy, Jr.; Kevin Jenkins, the CEO of Global Health Alliance; Tony Muhammad, a Nation of Islam minister; and Curtis Cost, the author of *Vaccines Are Dangerous: A Warning to the Black Community*. *Medical Racism* Film, https://medicalracism.childrenshealthdefense.org/#meet, Accessed March 21, 2022; Will Stone, "A Prominent Anti-Vax Group Is Spreading False Vaccine Info to Black Americans," *NPR*, June 8, 2021.

according to Kennedy, Trump floated the idea of having him lead a "vaccine safety commission."[49]

*Del Bigtree,* Vaxxed*, and Informed Consent Action Network*

Del Bigtree seemed to emerge from nowhere when his film, *Vaxxed: From Cover-Up to Catastrophe* 2016 was released in 2016. *Vaxxed* featured Wakefield, also the film's director, and it was produced by Bigtree and funded by Children's Health Defense and The Selz Foundation. The film claimed to decipher the "unsolved mystery" that a team at the CDC had purposefully omitted data indicating a correlation between the MMR vaccine and increased rates of autism in male African American children. One of the scientists, William W. Thompson, became a whistleblower, claiming that the omission had skewed the results of the study to disprove MMR-autism theory.[50] After Thompson made a public confession, his co-authors disavowed him, and investigators argued that the alleged events were impossible.[51] In *Vaxxed*, the events were presented as a true story.

*Vaxxed* was a call-to-action for viewers concerned about vaccine safety, autism, or both. By publicizing the idea that the CDC had defrauded the American people, the

[49] Michael D. Shear et al. "Anti-Vaccine Activist Says Trump Wants Him to Lead Panel on Immunization Safety," *New York Times*, January 10, 2017.
[50] Frank DeStefano et al. "Age at First Measles-Mumps-Rubella Vaccination in Children with Autism and School-Matched Control Subjects: A Population-Based Study in Metropolitan Atlanta," *Pediatrics* 113, no. 2 (2004): 259-266. For news coverage see Sydney Lupkin, "How a Now-Retracted Autism Study Went Viral — Again," *ABC News*, October 9, 2014.
[51] "Statement of William W. Thompson, Ph.D., Regarding the 2004 Article Examining the Possibility of a Relationship Between MMR Vaccine and Autism," Press Release (August 27, 2014); Emily Willingham, "A Congressman, a CDC Whistleblower and an Autism Tempest in a Trashcan," *Forbes*, August 6, 2015.

film provided room for further doubts about the veracity of scientific studies that had found no correlation between the MMR vaccine and autism. It suggested that viewers take political action, including to request their representatives repeal the National Childhood Vaccine Injury Act of 1986 (NCVIA). *Vaxxed* reflected how far the vaccine hesitancy movement had moved since its modern inception in the 1980s when Barbara Loe Fisher and her National Vaccine Information Council successfully agitated for the passage of the NCVIA. Now, the call was to repeal it entirely. For politically active vaccine skeptics, legislation on behalf of alleged vaccine-injured victims had completely lost favor because it shielded vaccine manufacturers from legal jeopardy.

From the beginning, *Vaxxed* was shrouded in drama. It was originally slated to premiere at the Tribeca Film Festival in New York City. However, numerous filmmakers participating in the festival threatened to retract their films if *Vaxxed* was shown, on the grounds that it promoted misinformation dangerous to public health.[52] Robert De Niro, the actor and founder of the festival, pulled the film. However, he admitted on *The Today Show* that he regretted the decision because the film deserved to be shown and people "deserve[d] to know the truth."[53] The Tribeca incident had the effect of making *Vaxxed* more controversial than it likely would have been if it was screened as planned. Anti-vaccine advocates argued that *Vaxxed* was censored.

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[52] Paul Offit, "Anti-Vaccine Doc 'Vaxxed': A Doctor's Film Review," *The Hollywood Reporter*, April 11, 2016.

[53] Savannah Guthrie and Willie Geist, "Interview With Robert De Niro on Anti-Vaccine Film Controversy: 'Let's Find Out the Truth," *The Today Show*, April 13, 2016.

The film's promotional website chronicled the successive banning of the documentary in London, Paris, and Australia. The marketing team utilized these events to their advantage, creating a metanarrative of embattlement in which *Vaxxed* played "David" going up against the "Goliath" of mainstream science and culture. Every time *Vaxxed* was banned or censored, it strengthened the filmmakers' claim that they had reported a truth so threatening that it could destabilize the status quo. People who had eagerly awaited the film's release because of their allegiance to Wakefield created an affinity with populists and conservatives who felt embattled by a liberalizing American society and feared censorship of their own views.[54]

Bigtree had previously worked on medical television shows in Hollywood, but he did not have a medical or activist background prior to creating *Vaxxed*.[55] Shortly after the movie went public, he founded ICAN with a $100,000 donation from The Selz Foundation. Another $1.7 million followed shortly thereafter.[56] ICAN's main projects included fighting lawsuits against federal and state government vaccine mandates; filing Freedom of Information Act requests for CDC data on vaccine studies; circulating

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[54] Sarah Boseley, "How Disgraced Anti-Vaxxer Andrew Wakefield Was Embraced by Trump's America," *The Guardian*, July 18, 2018.
[55] Deer, *The Doctor Who Fooled the World*, 332.
[56] The Selz Foundation was established by hedge fund manager Bernard Selz and his wife, Lisa Selz. Within a year of its founding, ICAN had also raised $2.46 million from the T. Rowe Price Charitable Foundation, according to reporting in *The Washington Post*. See Sun and Brittain, "Meet the New York Couple Donating Millions to the Anti-Vax Movement." According to a 2022 NBC News report, The Selz Foundation stopped donating to ICAN after an article about their donations to "anti-vax" causes was published in *The Washington Post* in 2019. Although their financial contributions to ICAN ceased, the ICAN organization continued to receive funding from wealthy donors and foundations, which were not made public. See Brandy Zadrozny, "Once Struggling, Anti-Vaccination Groups Have Enjoyed a Pandemic Windfall," *NBC News*, February 3, 2022.

petitions which requested further investigation into the licensing of vaccines; and boosting the profile of grassroots medical freedom organizations.[57]

Bigtree traveled the country for paid speaking engagements and appearances at rallies in communities and state capitols, often crossing paths with Kennedy and Wakefield, both of whom had worked on *Vaxxed*. Bigtree's style at these events was sensationalized and incendiary. As he was leaving a *haredi* event in Brooklyn in 2019, where he had likened children's immunization to "the intentional ritual murder of children," Bigtree stopped to tell reporters, "They should be allowed to have the measles if they want the measles."[58] At the "Parents Call the Shots" rally held in Austin, Texas, organized by Texans for Vaccine Choice, Bigtree called attention to the unvaccinated Hasidic Jews in New York who were fighting to have their children attend school during the measles epidemic. Referencing the Holocaust and holding up a yellow Star of David badge that said, "No Vax," he asked, "How will we know if you're not vaccinated? How will we know to arrest you? Maybe we'll do it the same way we did the last time."[59] Bigtree then pinned the badge on his shirt and encouraged the audience to do the same.

In 2017, Bigtree debuted "The HighWire," a weekly internet talk show and arm of ICAN. The show featured Bigtree uncovering government or pharmaceutical company corruption and spreading false narratives and misinformation about vaccine safety in the

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[57] Informed Consent Action Network, "Legal Action," https://www.icandecide.org/ican-legal-action/, Accessed March 21, 2022.
[58] Ben Sales, "Gospels and Child Sacrifice: Inside a NYC Ultra-Orthodox Anti-Vaccination Rally," *The Times of Israel*, June 6, 2019; Sun and Brittain, "Meet the New York Couple Donating Millions to the Anti-Vax Movement."
[59] Anti-Defamation League, "Anti-Vaccine Protestors Misappropriate Holocaust-Era Symbol to Promote Their Cause," *Anti-Defamation League Blog*, April 5, 2019.

name of libertarian-inspired patriotism. Compared to other conservative and Alt-Right personalities such as Rush Limbaugh, Alex Jones, and Joe Rogan, Bigtree was less bombastic and better-kempt, presenting himself differently than he did at live rallies. In an interview, Bigtree explained that ICAN fit into a broader American paradigm:

> Our founding fathers fought against tyranny to realize the dream of a great and free nation. It is time for the free people of the greatest nation on earth to stand up for our freedom to choose what's healthy for our own bodies, before the industrial agriculture and pharmaceutical industries pass laws that force those decisions.[60]

This statement would have appealed to people whose main goal was medical freedom, as well as to people who had longstanding commitments to alternative healthcare and naturalism. It captured the individualism of personal research, gut instincts, and vaccine choice.

ICAN's message of individual empowerment was articulated right in its name—"informed consent." An ethical and legal concept, informed consent is a part of the American Medical Association's "Code of Medical Ethics."[61] It requires that physicians inform patients or proxies of any risks associated with a course of treatment and receive consent from the patient to proceed. In vaccine hesitancy discourses, utilizing "informed consent" implied that, if parents knew of the risks of a vaccine, the sensible, rational thing to do would be to refuse it. ICAN and others created and engaged with a reality in which medical professionals were perceived to be either completely ignorant of these risks or deliberately withholding information from patients and families.

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[60] "A Message From Our Founder," Informed Consent Action Network, https://www.icandecide.org, Accessed September 12, 2022.
[61] "Informed Consent," American Medical Association, https://www.ama-assn.org/delivering-care/ethics/informed-consent, Accessed March 21, 2022.

Medical freedom is a broad ideal. It has historically been attached to causes associated with the political Left, such as abortion, euthanasia, and medical marijuana. Yet, vaccine choice organizations who espoused the ideal of medical freedom never connected the concept to those other causes. These obvious omissions were evidence of how politically conservative "medical freedom" became during the 2010s, both in mission and scope. Even organizations who changed their names to include "medical freedom" instead of "vaccine choice" did not expand their causes beyond vaccine hesitancy. In other words, medical freedom and anti-vaccine were one-in-the-same. Other issues of medical freedom related to sex and definitions of life and death were abhorrent to political conservatives who had long been aligned with religious conservatives. ICAN and others, funded by large conservative donors, helped to brand medical freedom as religious liberty by coopting both the struggles of religious minorities dealing with measles and the resulting political uncertainty about the future of religious and philosophical vaccine exemptions.

The messages that high-powered vaccine skeptics presented in the public square and to vulnerable minority groups appealed to three groups of people. First, they appealed to parents who utilized nonmedical exemptions to abstain from vaccines or who followed alternative vaccination schedules. They reinforced this group's preexisting concerns about vaccine safety, as well as their fears about the politicized fates of religious and philosophical exemptions in their states. Second, they appealed to those who practiced naturalism and used alternative health modalities—especially those in the conservative-alternative medicine camp—because these groups distrusted biomedicine

and were leery of public health recommendations and pharmaceutical companies. Third, they appealed to Trump supporters who felt embattled by elite institutions and mainstream American culture and were emboldened by populist ideas of medical freedom, bodily autonomy, and religious liberty.[62] The first two groups in this coalition had been active for decades, but their health commitments and their doubts about the integrity of biomedical institutions had likely not driven their political actions. They were ripe for politicization, and Trump's form of populism was effective at mainstreaming their doubt about vaccines.

When measles burst back into American consciousness in 2015 because of under-vaccination, it shifted the national conversation about mandatory vaccinations into politics. Since the 1980s, vaccine hesitancy had been a fringe issue, something discussed in hushed tones among family and friends. There were activists and advocacy groups, such as the NVIC, but most Americans did not question the immunization schedule their pediatricians recommended. In the 2010s, the state's role in vaccination was thrust into the spotlight, and the quiet concerns that some parents had always nursed surfaced as markers of identity. In this new era of politicization, the return of measles forced people to decide how strongly they felt about vaccines and to pick a side. The issue at stake, however, was less about vaccines themselves—perceptions of risk and all—and more about religio-political identities and the information people consumed within their own

[62] Sarah Boseley, "How Disgraced Anti-Vaxxer Andrew Wakefield Was Embraced by Trump's America," *The Guardian*, July 18, 2018.

unique internet bubbles. These were the factors at play when Covid-19 took up all the airspace.

# CHAPTER NINE

## Covid-19 and the Pandemic That Didn't Exist

On April 19, 2020, a cold, blustery Sunday in Bourne, Massachusetts, there was an anti-lockdown protest held in the parking lot of Dunkin' Donuts positioned just over the bridge crossing onto Cape Cod.[1] It could easily have been mistaken for a pro-Trump rally. Standing in front of black tricked-out trucks and motorcycles outfitted with Trump 2020 flags flapping in the wind, dozens of people dressed in Trump-branded clothing stood together, unmasked, holding up signs and yelling at drivers. A month earlier, the governor of the Commonwealth of Massachusetts had declared a state of emergency and issued Covid-19 lockdown orders for two weeks, which had been extended.[2] These orders closed all brick-and-mortar businesses that did not provide Covid-19 essential services and prohibited all gatherings of people greater than ten. In addition, the state had instituted mandates for anyone over the age of five to wear face coverings, or masks, in public spaces. Unmasked, the protestors in Bourne brandished signs that read, "Reopen Massachusetts!" and "Reopen Gun Shops!" They screamed with vitriol into the nearby roundabout, and yet they were also jovial, as though they were enjoying a tailgate party with friends. As state and local governments enforced masking and social distancing measures, similar protests popped up around the country.

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[1] Doug Hook, "Coronavirus Cape Cod: Protestors Gather at Bourne Rotary to Protest Barnstable County Lockdown During Covid-19 Pandemic," *MassLive*, April 19, 2020.
[2] Charles D. Baker, "Order Assuring Continued Operation of Essential Services in the Commonwealth, Closing Certain Workplaces, and Prohibiting Gatherings of More Than 10 People," Office of the Governor of the Commonwealth of Massachusetts (March 10, 2020).

The protestors in Bourne gathered at the same site every weekend for months. They were angry with the governor for shutting down the economy, disturbing their livelihoods, and enforcing public masking and social distancing rules. In general, anti-masking protestors favored the slogan "Don't Tread On Me," and they compared masking to being "silenced." These events always featured Trump signs, clearly demonstrating that those who opposed masking were supporters of Trump. As president, Trump almost never wore a mask in public and, as his reelection campaign ramped up in 2020, he openly mocked his opponent Joe Biden for consistently masking, implying that it was not masculine to wear a mask.[3] Weaponizing grassroots conservatism, Trump and other rightwing leaders intentionally politicized the pandemic and the public health measures to contain it. They did so by encouraging extreme libertarianism—rebellion against the basic procedures required to mitigate the spread and mortality of the virus. Coded with the language of medical freedom, endless conspiracies promoted white Christian nationalism and gender essentialism as rallying cries to regain lost freedoms. Online, anonymous conspiracy theories circulated, arguing that vaccination was a tool to impose a dystopian "New World Order" or a malicious depopulation campaign. The message was clear: avoid vaccination at all costs.

From the earliest news that a novel coronavirus was infecting people in Wuhan, China, in December 2019, a small contingent of far-right conservatives and conspiracy theorists spread doubts about whether the virus, known as Covid-19, even existed. This

[3] Libby Cathey, "Trump, Downplaying Virus, Has Mocked Wearing Masks for Months," *ABC News*, October 2, 2020.

dissent was barely noticeable as the dark and terrorizing reality of the pandemic began to affect Americans at home. With caseloads ticking up and emergency lockdowns going into effect, the nation experienced a brief period of unity. However, it did not take long before large contingents of Americans, some of whom identified as "virus truthers," rebelled against public health guidelines. They argued that the strength and deadliness of the virus were being exaggerated by the mainstream media. They accused the media of working with the federal government to promote a propagandistic "Master Narrative" that would scare everyday people into submission to tyrannical rule under the guise of following Covid-19 safety protocols.[4]

Understood through this lens, each successive public health initiative that the CDC recommended was not meant to save lives. It was meant to limit Americans' personal freedoms and muzzle dissent. These ideas were propagated among followers of QAnon, a conservative, pro-Trump conspiracy movement. They provided a counternarrative to the realities of the disease, denying that thousands of people were dying alone in understaffed hospitals, and that fear of dying from Covid was justified. In other words, Covid denialists and Covid believers inhabited existentially different worlds. These worlds were divided along political and racial lines, as those who objected most to social distancing and other measures were predominantly white and politically conservative.[5] In fact, responses to the disease were so deeply politicized that blocs of

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[4] Matthew Rosenberg and Jim Rutenberg, "Fight Over Virus's Death Toll Opens Grim New Front in Election Battle," *New York Times*, May 11, 2020; David A. Graham, "It's Not Vaccine Hesitancy. It's COVID-19-Denialism," *The Atlantic*, April 27, 2021.

[5] Adrienne LaFrance, "The Prophecies of Q," *The Atlantic*, June 2020; Renée DiResta, "The Campaign Against the Vaccines Is Already Under Way," *The Atlantic*, December 20, 2020; Stephanie McNeal,

Americans refused to heed public health recommendations or to trust the scientists who conveyed the latest information about how to prevent infection and spread. This politicization different significantly from the politicization of the AIDS epidemic of the 1980s and beyond. Then, political conservatives hurled moralizing and religiously based judgments at victims. Now, political conservatives denied that there even were victims.

The story of Covid-19 vaccine hesitancy was also the story of pandemic denialism and rebellion against masking. For the first time in United States history, it was also the story of widespread and tenacious vaccine opposition. Anti-government sentiment, particularly at the state and local levels, animated by the longstanding libertarian streak in American politics, brought individual rights to the fore in debates about public health measures. A vaccine to protect against Covid-19 was hotly anticipated by large swaths of the population who saw it as a beacon of hope that would allow the country to return to normalcy. Yet at least one-third of Americans reported that they would *not* take a vaccine if or when it became available. Many claimed there was nothing that could be done to change their minds.

More than a year after the first vaccines were introduced into the general population, that percentage remained stable, and with only sixty-eight percent of the United States population was fully vaccinated. Why? Because, for the first time in America's long engagement with infectious diseases and vaccines, the Covid-19 epidemic was deeply, powerfully, and consequentially polarized. Looking back at the

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"QAnon Influencers Amass Mom Following on Instagram," *Buzzfeed News*, January 22, 2021; Craig Timberg and Elizabeth Dwoskin, "QAnon Groups on Telegram Seethe with Covid Denialism and Vaccine Misinformation," *The Washington Post*, March 11, 2021.

long stretch of vaccine history, the public's widespread excitement and acceptance of the polio vaccine in the 1950s was a divergence—a moment of unity, consensus, and collective anticipation—from the broader history of scattered, consistent, nonpartisan hesitancy toward vaccines. Seventy years later, the public's reception to the Covid-19 vaccine was even more anomalous. However, instead of unifying a country suffering terror, grief, and mass death, the Covid-19 vaccine was politically polarizing. For many Americans, how one felt about the syringes containing state-of-the-art, life-saving medical technology, was a litmus test of one's political identity. And political identity had become inextricably tied to religious and racial identifications.

The country had been steadily polarizing along political lines for decades. However, Donald Trump's entry into national politics in 2015 pushed the nation to a breaking point. He founded his political career on spreading the lie that President Barack Obama, the first Black man to hold the office, was neither a United States citizen nor a Christian. Trump did this by expressing doubt about where Obama was born and wondering publicly about the whereabouts of Obama's birth certificate. In short, he launched a conspiracy theory that Obama was an illegitimate president who liberals were protecting at all costs to push an agenda of racial diversity on the country. Trump took the presidency by a slippery margin, using dog whistle politics to signal solidarity with aggrieved white, lower-class voters. Even more slippery was Trump's governing style, in which "alternative facts" ruled the day and fact-checking was intentionally discredited as politically liberal. By the last year of Trump's presidency, during which he had earned one impeachment and was fighting a second, nothing was apolitical. In this context, when

Covid-19 hit during Trump's last year in office, every aspect of it was debated. And, it was an election year, which meant that Trump needed to depict himself as an unmitigated success and his leadership as both persecuted and triumphant.

Beliefs about Covid vaccines grew out of core intersectional identities at war over the character of American culture. On the one hand, there were Republicans and libertarians who were white, non-college-educated, pro-Trump, and who identified strongly as conservative Christians.[6] On the other hand, there were Democrats, liberals, and progressives, primarily white, college-educated, and anti-Trump. This side also included racial and ethnic minority groups, including Latinx and Black people who suffered disproportionately from Covid during the first surge of disease.[7] These groups were largely compliant with public health measures aimed at stopping the spread of the virus. However, there was a steep racial divide over eagerness to be vaccinated. While liberal white people were most eager to be vaccinated, at first, Black people largely were not.[8] A relatively small number of people on the Left remained vaccine hesitant, especially when it came to vaccinating their children. They argued that the vaccines were too new and that risks of the disease in children were lower than in adults. However, because of the politicization of vaccines and the fact that abstaining from vaccination was associated with right-wing affiliation, the liberal vaccine-hesitant and anti-vaccine

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[6] Reece Peck argues that Fox News primetime hosts, speak a "moral discourse of class" that joins together many aspects of conservatism into a moral community. See Peck, *Fox Populism: Branding Conservatism as Working Class* (New York: Cambridge University Press, 2019), 182.

[7] Bradley Jones, "The Changing Political Geography of COVID-19 Over the Last Two Years," Pew Research Center (March 3, 2022).

[8] When I use "Christian" here, I mean white conservative Protestant, or evangelical, Christians. I use the term "Christian" descriptively to represent how this demographic identifies itself. White conservative Catholics also fall into this category.

mandate faction was either quiet or found itself drawn into many of the same conspiracy theories that captured the Right, confusing their political identities. Even former supporters of Democratic-Socialist 2016 presidential Bernie Sanders found themselves fearing the loss of personal freedoms, "questioning everything," and skeptical of how pharmaceutical company corruption influenced vaccine production.[9]

The beliefs and attitudes of these two political groups, effectively made the Covid vaccine (and vaccination) into a proxy issue in the roiling debate over the moral character of the nation. And what was the core moral question at stake? Whether the United States should value individualism or communitarianism. Both moral orientations have long histories within United States politics. Traditionally, minority groups, and those who perceive themselves to be minorities, have argued for individual rights and rights-based equality. Women's rights, Black rights, and LGBTQ rights movements were of course rooted in protest movements for the rights of particular groups of people. But they were also individualistic in that they focused on individual women gaining rights equal to those of men, individual Blacks gaining rights equal to those of whites, and individual queer people gaining rights equal to those of straight people.[10] The founding thinker of this moral individualism was Thomas Jefferson, and the founding text was the

[9] Julie Bosman et al. "Who Are the Unvaccinated in America? There's No One Answer," *New York Times*, July 31, 2021; Kiera Butler, "The Anti-Vax Movement's Radical Shift From Crunchy Granola Purists to Far-Right Crusaders," *Mother Jones*, June 18, 2020; Angelina Chapin, "The Unvaxxed Lefties Hiding in Plain Sight," *The Cut,* November 19, 2021; Miranda Chistou, "Alt-Medicine: How the Alt-Right Weaponizes Vaccine Hesitancy," *Fair Observer*, October 21, 2021; Jessica Grose, "They're Not Anti-Vaccine, But These Parents Are Hesitant About the Covid Shot," *New York Times,* May 12, 2021; Andrea Stanley, "Why People Are Keeping Unvaccinated COVID Deaths Secret," *The Atlantic*, January 18, 2022.
[10] Andrew R. Lewis, *The Rights Turn in Conservative Christian Politics: How Abortion Transformed the Culture Wars* (New York: Cambridge University Press, 2018), 2.

Declaration of Independence, which asserted the "self-evident" truth that "all men are created equal" and that each and every citizen possessed a God-given right to "Life, Liberty, and the pursuit of Happiness."

Culturally hegemonic groups have tended to argue for communitarian values. Instead of thinking of society as a collection of individuals (as many "I"s), they think of it in collective terms (as one big "We"). *We* ought to all do things in one way, the best way, our way. However, these positions have also been reversed, with culturally hegemonic groups arguing for individual values and relatively disempowered groups arguing for communitarian values. Middle-class white people have frequently espoused the virtues of the sacred individual getting ahead through hard work, even as they denounced government programs to help the needy, arguing that each person should succeed on merit. In the twenty-first century, conservative Republicans grew increasingly individualistic and freedom-focused, and liberal Democrats more communitarian. They touted the benefits of Social Security and other safety net programs, and they drew on critical theories of race and gender to explain inequalities via metaphors of interconnectedness. The focus on a larger social body was employed as a moral imperative for inclusion of racial, ethnic, and religious differences. The collective body was sacred and should be protected through the efforts of individuals coming together as one.

The field of public health is inherently communitarian. Its focus has long been the collective health of the social body. There may be small sacrifices or risks that individuals need to take when responding to infectious disease epidemics, but they are

worth it because of the much greater benefits to the whole of society. Because of this orientation, the field of public health's the goals and methods of the public health field have fundamentally clashed with conservative values and commitments. Particularly as medical freedom and religious freedom became intertwined in the late 2010s, conservatives felt a strong dis-ease with public health mandates for most things, from a universal mandate for health insurance coverage to school vaccinations. Conservatives argued that public health mandates violated the individual's right to make her own decisions. As a result, medical freedom became a litmus test issue for conservatives leading into the 2016 presidential election. Communitarian approaches rang of socialism and provoked fears of a weakening capitalism. Lockdowns were assaults on personal liberties. Quarantines violated First Amendment rights to public assembly. Masks limited free speech.

Another new factor in the history of vaccine hesitancy in the United States reinforced conservatives' political mistrust of the authority of the public health establishment: widespread and fervent conspiracy theorizing. Many conservatives quickly came to believe that masks were dangerous for their health. Popular Fox News hosts and online conspiracy theorists alike referred to the pandemic as a hoax. Studies have shown that viewers of CNN were more likely to take the pandemic seriously than Fox viewers.[11] One of the chief conspiracy theories was that the pandemic was a ruse

[11] Natalie Moore, "Study Finds More COVID-19 Cases Among Viewers of Fox News Host Who Downplayed Pandemic," *NPR*, May 4, 2020; Margaret Sullivan, "The Data Is In: Fox News May Have Kept Millions From Taking the Coronavirus Threat Seriously," *The Washington Post*, June 28, 2020; Leonardo Bursztyn et al. "Misinformation During a Pandemic," Becker Friedman Institute for Economics at UChicago (September 1, 2020). This study found that viewers over the age of fifty-five who watched

being perpetrated by a powerful cabal striving for world domination. Health measures were secret methods of social control. Doctors were being instructed to fabricate that all deaths were caused by the coronavirus to inflate the morbidity numbers. If a vaccine against the virus were to come out, it would be another stage of a pandemic that was preplanned in an effort to tag and track people. Circulating through online forums, Fox News, and by word of mouth, conspiracy theories painted an even grimmer picture of the pandemic than the reality of the deaths, the broken medical systems, the massive financial outlays by hospitals and governments, and the emotional tolls of isolation. These theories were products of misinformation, disinformation, anti-science beliefs, and willful ignorance, but they were also a continuation of President Trump's assault on truth. The deliberate fostering of alternative realities by Trump and his allies generated tribalistic animus that verged on a cold civil war.[12]

In the years prior to Trump's election, during the height of the Tea Party era of the early 2010s, political scientists noticed that religious conservatives—mostly white evangelical Christians but also some conservative Catholics—had started to shift their political approach from a communitarian, "moral majority"-style agenda, to an individualistic, "rights-based" strategy. Some scholars have referred to this tactic as "the rights turn," while emphasizing the Christian Right's new focus on constitutional

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*Tucker Carlson Tonight* adopted personal safety measures against Covid-19 faster than did viewers of *Hannity*.

[12] Anthony R. DiMaggio, "Conspiracy Theories and the Manufacture of Dissent: QAnon, the 'Big Lie,' Covid-19, and the Rise of Rightwing Propaganda," *Critical Sociology* 48, no. 6 (2022): 1025-1048; Bruce L. Miller, "Science Denial and COVID Conspiracy Theories," American Medical Association (2020); Jeremiah Morelock and Felipe Ziotti Narita, "The Nexus of QAnon and COVID-19: Legitimation Crisis and Epistemic Crisis," *Critical Sociology* 48, no. 6 (2022): 1005-1024.

protections for the religious freedom of individual Christians.[13] This rights turn was a new tactic in culture war battles that had essentially been lost to liberals. In a spate of religious freedom legal cases, white evangelical Christians argued that they were victims of religious discrimination even as they asserted their constitutional right to be able to practice their religion freely.

All this was happening as the number of white evangelical Christians was declining sharply as a percentage of the United States population.[14] These legal efforts constituted their attempt to hold on to their longstanding social status in American society. The core characteristics of this protected status were racial whiteness, Christian cultural identity, and the belief that the United States was fundamentally a Christian and capitalist nation.[15] White Christian nationalism.

Because the Christian Right had taken this "rights turn," medical freedom arguments resonated with the religious argument advanced by conservative Christians during the years when measles returned after the Disneyland outbreak. Arguably, individual rights were the core moral issue of Trump-era Christian conservatism. Therefore, when Christians argued that religious freedom *was* medical freedom, objections to public health mandates made all the sense in the world. As a result, many

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[13] Lewis, *The Rights Turn*, 9. Stephen Prothero has argued that cultural conservatives fight battles that have already been lost to assert their primacy over American culture. Prothero, *Why Liberals Win the Culture Wars* (New York: HarperOne, 2016).
[14] Robert P. Jones, *The End of White Christian America* (New York: Simon & Schuster, 2017).
[15] Kristin Kobes Du Mez argues that many people who identify as "Christian" are participants in an "evangelical culture of consumption" which espouses an "operationalized theology" that is driven less by beliefs or church attendance and more by association with the culture of Christian conservatism. Kobes Du Mez, *Jesus and John Wayne: How White Evangelicals Corrupted a Faith and Fractured a Nation* (New York: Liveright Publishing, 2020), 7-9. Gorski and Perry refer to this phenomenon as the "creeping secularization of the evangelical label." See *The Flag and the Cross*, 44.

evangelical Christians understood Covid protection mandates to be assaults on Christian supremacy under the law.[16] Even before vaccines against Covid-19 were available, this contingent feared that they would be mandated, perhaps predicting their own dissent. This was anomalous behavior for conservative Christians. Neither white evangelicals nor Catholics had expressed sustained vaccine hesitancy as a political or religious bloc. Neither had they traditionally been on the side of medical freedom, given their staunch commitment to regulating or removing access to abortions and reproductive medical care since the 1980s.

Yet, in response to Covid-19, there was a radical change. Trump's political success had come from sympathizing with and glorifying white evangelical Christians who felt their culture and values were marginalized in a country that had been founded as a Christian nation and should remain one.[17] Tapping into individualism as a strategy for empowerment, Trump fanned the flames of white Christian anxiety and rage. He encouraged conspiracy theorizing and distrust in authorities other than himself. When Covid-19 hit, and communitarian values were operationalized via public health measures, Trump initially took a moderate approach by listening to the experts. But his supporters had already learned that these experts were not to be trusted.[18] Experts had an agenda, and that agenda was to take away their God-given civil rights.

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[16] Gorski and Perry, *The Flag and the Cross*, 91.
[17] Anthea Butler, *White Evangelical Racism: The Politics of Morality in America* (Chapel Hill, NC: University of North Carolina Press, 2021).
[18] Gorski and Perry, *The Flag and the Cross*, 32. Gorski and Perry found that at "extremely high levels of Christian nationalism, less than 20% of white Americans expressed a 'great deal' of trust in experts, while over 80% reported a great deal of trust in Donald Trump."

**A Brief History of Covid-19 and the mRNA Vaccines**

The illness known as Covid-19 is caused by an infection with SARS-CoV-2, a coronavirus. The name coronavirus derives from the word "crown" because coronavirus molecules are covered in spike proteins that stick outward to attach to human cells and replicate. Some coronaviruses cause common head and chest colds, while others cause rare diseases such as severe acute respiratory syndrome (SARS). Covid-19 cause mild symptoms in some people and can also be carried and transmitted by asymptomatic people, making disease containment extremely difficult. Most Covid-19 infections resemble the flu or pneumonia. They cause symptoms such as fever, acute respiratory congestion, fatigue, and muscle aches. However, many people report surprising symptoms, such as the loss of taste and/or smell, and brain fog. In the most severe cases, patients are unable to breathe unassisted. People who have preexisting medical conditions, such as obesity, heart disease, diabetes, or are pregnant, have an increased risk of severe symptoms and death from Covid-19 if they are unvaccinated. And, as many as twenty percent of those who have been infected with Covid-19 develop chronic disease symptoms, a syndrome known as "Long Covid" or "post-Covid."[19]

In mid-December of 2019, a treatment-resistant, pneumonia-like illness started to infect the residents of Wuhan, China. Within two weeks, Chinese health officials alerted the World Health Organization (WHO) that there was an uncontrolled outbreak of an unknown respiratory disease. It was quickly identified as a "novel coronavirus" and

[19] Adam Gaffney, "What Doctors Still Don't Understand About Long COVID," *The Atlantic*, October 5, 2022.

named SARS-CoV-2, or Covid-19. Chinese and WHO officials set into motion public health procedures that had been used for past coronavirus epidemics. Wuhan, a city of 11 million people, was placed under a lockdown order, just as the first American case of the novel coronavirus was confirmed in Washington State on January 20, 2020. The novel coronavirus moved around the world at a terrifying speed and by mid-March of 2020, the WHO declared a global pandemic that had caused 118,000 confirmed cases of Covid-19 and 4,291 deaths in 114 countries.[20] The Trump Administration issued a nationwide emergency, including a travel ban on non-citizens entering the United States. Four days later, individual state governments began to implement local shutdowns to prevent the spread of Covid-19.

By the end of March, the nation was watching New York City, where tens of thousands of confirmed cases completely overwhelmed the hospital system, and more than 2,000 New Yorkers had already died. Sick people, bracing themselves against the cold, stood for hours in lines that wrapped around makeshift hospital tents waiting to be tested for Covid. Often they were turned away because of lack of testing supplies. Under lockdown, the streets of the nation's busiest city were barren. Hospitals were forced to take extreme measures to handle the masses of extremely ill and contagious patients flooding their emergency rooms. Some hospitals converted buildings to Covid care, took over convention centers, and pulled doctors and nurses from other specialties to work extended shifts with Covid patients, many of whom required ventilators to breathe. They

[20] All pandemic-related time stamps and pandemic data are from the CDC's public timeline. David J. Sencer CDC Museum and Smithsonian Institution, "CDC Museum Covid-19 Timeline," August 16, 2022, https://www.cdc.gov/museum/timeline/covid19.html#Early-2020. Accessed November 16, 2022.

also cancelled non-urgent care. Looking back, the American Hospital Association estimated that the country's hospitals and health systems had experienced $202.6 billion in losses in the first four months of the pandemic because of emergency expenditures, staff overtime compensation, care for the uninsured, and lost revenue from cancelled procedures.[21]

Meanwhile, personal protective equipment (PPE), including medical gowns, gloves, facepiece particulate respirators (N95 masks) and face shields were in dangerously short supply. Standard protocol for taking "transmission-based precautions" requires a medical provider to wear an N95 mask for one single encounter with a highly infectious patient before discarding it and using a new one.[22] However, the spread of Covid-19 far outpaced production and availability of PPE. When it became clear that following normal safety protocols was impossible, doctors and nurses improvised, fashioning protective gowns from garbage bags, and reusing one mask for an entire week (wiping it with hand sanitizer between shifts).[23] Operating as makeshift morgues, freezer trucks parked outside of hospitals such as NYU Langone in lower Manhattan and Elmhurst Hospital in Queens to pick up the bodies of people who had died. In the early

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[21] American Hospital Association, "Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19," Report (May 2020); Sarah Hockaday et al. "Protocols for Personal Protective Equipment in a COVID-19 Medical Shelter," *Disaster Medicine and Public Health Preparedness* (July 14, 2020): 1-7.

[22] Karen Jones, "Transmission-Based Precautions," Centers for Disease Control and Prevention, https://www.cdc.gov/infectioncontrol/pdf/strive/PPE102-508.pdf. Accessed November 16, 2022.

[23] Brian M. Rosenthal, Joseph Goldstein and Michael Rothfeld, "Coronavirus in N.Y.: 'Deluge' of Cases Begins Hitting Hospitals," *New York Times*, March 20, 2020; Michael Rothfeld, Somini Sengupta, Joseph Goldstein and Brian M. Rosenthal, "13 Deaths in a Day: An 'Apocalyptic' Coronavirus Surge at an N.Y.C. Hospital," *New York Times*, March 25, 2020.

days of the pandemic, to the terrified observer, going to the hospital seemed to be a death sentence.

This was especially true for people of color. In the first six months of the pandemic, Latinx and Black people were three times likelier than white people to contract Covid-19, and roughly twice as likely as white people to die from the infection.[24] American Indian and Alaska Native (AIAN) populations were also disproportionately hurt by the disease. These disparities, especially notable before vaccines became widely available, were caused by structural inequalities in medical care and access, as well as poverty. Put simply, people of color were likelier to contract Covid-19 because they disproportionately lived in high-density, low-income communities, had fewer primary care doctors, had less access to medical care, and held jobs as essential workers in food and delivery services or warehouses. Many were also undocumented immigrants and others who fell outside of the social safety net.

The stark facts of the pandemic were widely reported in grim daily news briefings given by the White House Coronavirus Task Force, fronted by CDC Director Dr. Anthony S. Fauci and White House Coronavirus Response Coordinator Dr. Deborah Birx. The pair reported morbidity and mortality statistics, provided projections for viral spread, and educated the public on safety guidelines to slow the spread of the virus. Although CDC protocols changed frequently in the early days of the pandemic because

[24] Centers for Disease Control and Prevention, "Risk for COVID-19 Infection, Hospitalization, and Death by Race/Ethnicity" (November 9, 2022); Latoya Hill and Samantha Artiga, "COVID-19 Cases and Deaths by Race/Ethnicity: Current Data and Changes Over Time," *Kaiser Family Foundation*, August 22, 2022; Richard A. Oppel Jr. et al. "The Fullest Look Yet at the Racial Inequality of Coronavirus," *New York Times,* July 5, 2020.

the virus was being studied in real time, the CDC and the World Health Organization (WHO) both recommended quarantine for nonessential workers, keeping a six-foot distance between people, wearing surgical or other face masks that covered both nose and mouth when in public, and frequently sanitizing hands and surfaces.

The terror level that the pandemic fostered in the majority of the population was difficult to maintain, particularly in geographic regions that had not yet been affected by Covid. As Covid science advanced, it shifted, leaving many fatigued and aggrieved by the limitations on daily life and the economic decline brought on by government rules and protocols.[25] The CDC and local government officials were targeted with hatred and violence, which was often encouraged by Republican politicians.[26] Fauci, who had served as the Director of the National Institute for Allergy and Infectious Disease (NIAID) since 1984, and was the Chief Medical Advisor to the President, was particularly (and critically) scrutinized. Although he was lionized by mainstream media and liberals, conservatives looked for any reason to discredit him. Their accusations of deceit or fraud were the subjects of countless conspiracy theories. Trying to paint the dire pandemic situation in a rosy light, Trump repeatedly promised that the government and economy would reopen, but his predictions were politically rather than scientifically based.[27] In the

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[25] Deborah Birx, *Silent Invasion: The Untold Story of the Trump Administration, Covid-19, and Preventing the Next Pandemic Before It's Too Late* (New York: Harper, 2022).
[26] Anna Maria Barry-Jester, "The Herd: Hazardous to Your Health Official," *This American Life* Podcast (April 23, 2021); Jon Cohen, "Almost Everything Tucker Carlson Said About Anthony Fauci This Week Was Misleading or False," *Science*, August 25, 2022. For example, Senator Ted Cruz (R-TX) referred to Fauci as "the most dangerous bureaucrat in this country's history" in an interview with Sean Hannity on Fox News. Cruz posted the interview clip on his official government website on November 30, 2021.
[27] Kevin Breuninger, "Trump Wants 'Packed Churches' and Economy Open Again on Easter Despite the Deadly Threat of Coronavirus," *CNBC*, March 24, 2020; Kaitlan Collins and Kevin Liptak, "Trump Trashes Fauci and Makes Baseless Coronavirus Claims in Campaign Call," *CNN*, October 20, 2020.

context of his 2020 reelection campaign, Trump was eager to demonstrate pandemic successes, including the delivery of a soon-to-come vaccine, but he also frequently scapegoated others for administrative failures.

Traditional media, long conditioned by norms of fairness to tell "both sides" of a story, gradually came around to referring to all of the above as misinformation or disinformation. Accusations of disinformation were difficult to prove because they implied that their propagators were intentionally lying to mislead others. Investigative reporters and researchers found that certain conservative-alternative medicine influencers profited financially by spreading lies about Covid and vaccines. One year into the pandemic, the Center for Countering Digital Hate published a report called "The Disinformation Dozen," which argued that two-thirds of the anti-vaccine content spread on Facebook and Twitter originated from the accounts of only twelve individuals.[28] At the top of the list? Joseph Mercola, Robert F. Kennedy Jr., Sayer Ji of GreenMedInfo, and Sherri Tenpenny. These were well-known figures in the vaccine hesitancy world who had published extensively against vaccines for years. In short, they were veterans in the field of vaccine misinformation.[29]

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[28] The "Disinformation Dozen" were Joseph Mercola, Robert F. Kennedy Jr., Ty and Charlene Bollinger, Sherri Tenpenny, Rizza Islam, Rashid Buttar, Erin Elizabeth, Sayer Ji, Kelly Brogan, Christiane Northrup, Ben Tapper, and Kevin Jenkins. The Center for Countering Digital Hate identifies itself as "a UK/US non-profit that disrupts the spread of digital hate and misinformation." The report, "The Disinformation Dozen," was published on March 21, 2021. It was analyzed by mainstream media outlets, such as the *New York Times* and *The Washington Post* as well as the McGill University Office for Science and Society.

[29] Jonathan Jarry, "A Dozen Misguided Influencers Spread Most of the Anti-Vaccination Content on Social Media," McGill University Office for Science and Society (March 31, 2021); Victoria Knight, "Will 'Dr. Disinformation' Ever Face the Music?" *Kaiser Health News*, September 22, 2021; Sheera Frenkel, "The Most Influential Spreader of Coronavirus Misinformation," *New York Times*, July 24, 2021; Camden Carter and Spencer Silva, "Instagram's Link Sticker Feature Is Lining the Pockets of Some of the Platform's Most Prolific Misinformers," *Media Matters for America*, January 24, 2022.

*The Vaccines Arrive*

Almost immediately following the discovery of SARS-CoV-2, the United States government invested billions of dollars in multiple companies to work on the development of vaccines. Two companies, Moderna Therapeutics and Pfizer, working with the German pharmaceutical maker BioNTech, producing promising options within months. Moderna, a newcomer to the vaccine industry, had latched onto the spike protein as the key to creating an innovative vaccine technology that would utilize messenger RNA (mRNA), the genetic material that communicates a cell's DNA instructions to its protein-making factory. Scientists had been working to replicate the functions of mRNA to be used for other purposes, including to build spike proteins that could mimic disease-causing coronavirus cells.[30] Moderna and Pfizer utilized an existing 3D model of a spike protein that had been developed by the National Vaccine Center to advance their vaccine development. Because of research and technology that had been in the works for many years, formulating vaccines against the novel coronavirus was far more streamlined than it would have been if scientists were starting from scratch.

In mid-March of 2020, just as the country went into lockdown, Moderna started human trials of its Covid-19 vaccine. By the end of April 2020, the Trump Administration launched Operation Warp Speed, which funded the production of six vaccine candidates that were still in clinical trials with the goal of selecting a workable vaccine from the options as quickly as possible. Just as the number of recorded deaths

[30] Carolyn Y. Johnson, "A Gamble Pays Off in 'Spectacular Success': How the Leading Coronavirus Vaccines Made it to the Finish Line," *The Washington Post*, December 6, 2020.

from Covid-19 in the United States surpassed 300,000, the government issued Emergency Use Authorizations (EUA) to Pfizer-BioNTech and Moderna. The Trump Administration purchased hundreds of millions of doses of vaccine from each company, and the CDC delineated a schedule for people over the age of eighteen to be vaccinated in order of risk, beginning with the elderly and healthcare and frontline workers. Roughly two-thirds of adults were eager and ready to be vaccinated, and within a month, twenty-three-million doses of vaccine had been administered around the country, primarily in mass vaccination sites held in parking lots, schools, and stadiums.[31] People documented their first vaccine doses on social media and posed with their biceps curled and bandages visible. They wrote long captions extolling the strength they felt in receiving the vaccine and the gratitude they had for healthcare workers. They cried with relief as they were vaccinated. They proudly sported "I Was Vaccinated Against Covid-19" buttons and stickers, and many young people helped their parents, grandparents, and elderly friends and family navigate complex online systems to reserve sought-after vaccine appointments or to drive to vaccination sites. Vaccination clinics in low-income areas, urban and rural, were also set up to minimize inequities in vaccine access. Many operated around the clock, and people lined up for hours to get their shots.[32] Throughout the spring of 2021,

[31] Deborah Barfield Berry, "COVID Vaccine Sites: Churches Offer Vaccinations to Help US Rollout," *USA Today*, February 24, 2021.
[32] Abby Goodnough, "In Quest for Herd Immunity, Giant Covid-19 Vaccination Sites Proliferate," *New York Times,* February 28, 2021; Nada Hassanein, "COVID Vaccine: Low-Income Clinics Gear Up to Receive Extra Doses," *USA Today*, February 23, 2021; Adam MacInnis, "Black Churches Step in to Help Distribute COVID-19 Vaccine," *Christianity Today*, January 24, 2021; Lydia Saad, "U.S. Readiness to Get COVID-19 Vaccine Steadies at 65%," Gallup, January 12, 2021; Jada Yuan, "Take Me Out to the Ballpark, Vax Me Up With the Crowd," *The Washington Post*, March 6, 2021.

successive age groups received vaccines, slowing the speed and mortality of the disease. Much of the nation was hopeful.

Perhaps the group that provided the clearest example of the politically partisan divide over vaccines was Black Americans who, from the earliest days of the pandemic, met the prospect of a future Covid-19 vaccine with skepticism. In the month before the first vaccines were brought to the public, Black Americans had only a forty-nine percent desire to be vaccinated, and most wanted to "wait and see" before getting vaccinated themselves.[33] The reasons for this resistance were clear: Black Americans had long been victims of medical racism. Aware of this history and this resistance, public health officials partnered with local community-based organizations and churches to customize educational campaigns for Black populations. They emphasized community protection and highlighted the work of Black medical providers on the frontlines.[34] Local and national organizations, such as the NAACP, also partnered with private companies, such as Twitter, to amplify factual Covid-19 information among Black users, as well as Lyft, to provide free rides to vaccination appointments.[35] These collective efforts were very successful.

Between April 2021, when most age groups were able to be vaccinated, and July 2022, the race gap in vaccination rates between white and Black people decreased from

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[33] National Foundation for Infectious Diseases, "National Survey: Black Adult Perspectives on COVID-19 and Flu Vaccines" (December 2020).
[34] East Bay Community Foundation, "COVID-19 African American Education and Outreach Partnership," https://www.ebcf.org/initiatives/covid-19-african-american-education-and-outreach-partnership, November 21, 2022.
[35] National Association for the Advancement of Colored People, "LyftUp Access," https://naacp.org/resources/lyftup-vaccine-access. Accessed November 21, 2022.

fourteen percent to five percent.[36] Certainly, Black people grew more receptive to vaccination because they had experienced the extreme devastation that Covid-19 caused their communities. However, another factor was likely political polarization. Black Americans overwhelmingly identify as Democrats and hold liberal political positions and affiliations, and in the end, many acted in accordance with other Democrats in adopting disease mitigation efforts and getting themselves and their family members vaccinated. In sharp contrast, white evangelical Christian Trump voters were not persuadable, and over the two years of the pandemic, they became the population with the most deaths from Covid-19.[37]

As Republicans and lower-income Americans remained disproportionately unvaccinated, some hospitals and businesses sought to require Covid vaccination, causing strong dissent among unvaccinated people who utilized religious exemptions to avoid vaccination. This was controversial, as employers and journalists alike questioned the sincerity of religious exemption requests.[38] As Covid-19 started to mutate, and numerous variants of the virus emerged around the world causing surges of infection and deaths, Pfizer-BioNTech and Moderna developed booster shots to increase waning immunity levels and protect against the Delta and Omicron variants, which were far more infectious

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[36] Tasleem J. Padamsee et al. "Changes in COVID-19 Vaccine Hesitancy Among Black and White Individuals in the US," *JAMA Network Open* 5, no 1 (January 21, 2022).
[37] Akilah Johnson and Dan Keating, "White Covid Deaths Increasing in U.S., Surpassing Death Rate of Blacks," *The Washington Post*, October 19, 2022.
[38] Curtis Chang, "Christian Exemptions to Vaccine Mandates Lack Sound Basis," *New York Times*, September 6, 2022; Georgina Gonzalez, "Hospital Execs Worry Workers Are Abusing Religious Exemptions for Vaccination," *Becker's Hospital Review*, February 28, 2022; Kay Lazar, "A Murky Battle Over Religious Beliefs and COVID-19 Vaccination Continues," *The Boston Globe*, September 18, 2021; Juan A. Lozano and Brian Melley, "Workers Push Back Against Hospitals Requiring COVID Vaccines," *Associated Press*, June 14, 2021.

than the original virus.[39] As the pandemic wore on, deaths from Covid-19 migrated from high-density urban centers in blue states (before vaccines) to rural areas in red states (after vaccines).[40] This geographic shift was directly correlated to vaccination rates.

Equally as infectious as Covid-19 was the misinformation that shot through social media feeds and message boards, throwing gas on the fire of partisanship that had been burning for years. In November 2020, Trump refused to concede his election loss, and on January 6, 2021, thousands of his followers attempted a coup on the United States Capitol. Just as there had been a clear overlap between Covid deniers and vaccine refusers, there was now a clear overlap between election deniers and vaccine resistance. By the time two members of the Disinformation Dozen spoke at a "Stop the Steal" rally just prior to the January 6th attack, anti-masking and anti-vaxxing had become core positions, identity markers even, among disaffected white male conservatives.[41] Among this constituency, religious freedom and patriotic individualism required that they refuse to protect themselves, their families, and their communities against a disease that had killed 500,000 of their fellow Americans, a vast number of whom lived in red states.[42]

On September 18, 2022, President Joe Biden declared that the Covid-19 pandemic was over.[43] Covid-19 was not actually over, but thanks to the vaccines, the country was

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[39] Ariana Eunjung Cha et al. "A Rush to Get Shots," *The Washington Post*, July 31, 2021; Megan Scudellari, "Omicron's Surprising Anatomy Explains Why It Is Wildly Contagious," *Scientific American*, February 11, 2022.
[40] Bradley Jones, "The Changing Political Geography of COVID-19 Over the Last Two Years," Pew Research Center (March 3, 2022).
[41] Curt Devine and Drew Griffin, "Leaders of the Anti-Vaccine Movement Used 'Stop the Steal' Crusade to Advance Their Own Conspiracy Theories," *CNN*, February 5, 2021.
[42] Philip Bump, "How Much of Right-Wing Opposition to Vaccination Was Fox News's Fault?" *The Washington Post* (October 10, 2022); Jones, "The Changing Political Geography," March 3, 2022.
[43] Becky Sullivan and Rob Stein, "How Biden's Declaring the Pandemic 'Over' Complicates Efforts to Fight COVID," *NPR*, September 20, 2022.

moving on. And yet, one-third of Americans staunchly abstained from vaccination. Their resistance was political, racial, religious, and cultural. It was so resolute that some commentators on both side of the issue argued that the sentiment must be a welcoming acceptance of death.[44]

**Unmasking Whiteness**

Covid-19 entered a culture where public health measures were already branded as dangerous impositions on individual freedom. One of Trump's primary promises in the 2016 presidential campaign was to repeal the Affordable Care Act (ACA), the signature legislation of the Obama administration. The ACA provided a safety net for people who did not have health insurance by expanding Medicaid and extending coverage for young people. Even before the ACA passed, the Republican Party's platform was anchored to repealing the law, and Trump campaigned on the issue during his first and second presidential runs.[45] Demonizing the law and referring to it as socialist, government-run healthcare—dog whistles that implied racial and ethnic minorities were the true beneficiaries—Trump argued that Americans should be free to have insurance or not have insurance as they wished. His message appealed to voters in red states whose

[44] Jamelle Bouie, "Many Republicans Are Anti-Vax. Are They Also Pro-Covid?" *New York Times*, August 31, 2021; Eleanor Cummins, "The Chilling Popularity of Anti-Vax Deathbed Videos," *The New Republic,* September 15, 2021; Jonathan Chait, "American Death Cult," *New York Magazine,* July 20, 2020, Joy Pullman, "For Christians, Dying From COVID (Or Anything Else) Is A Good Thing," *The Federalist*, October 18, 2021; Michael Sean Winters, "'Pro-Lifers' Make Suicide Pact With Anti-Vaxxers," *National Catholic Reporter*, October 15, 2021.

[45] Patrick Healy and Abby Goodnough, "Seizing on Rising Costs, Trump Says Health Law Is 'Over,'" *New York Times,* October 25, 2016; Devlin Barret, "Trump Vows Complete End of Obamacare Law Despite Pandemic," *The Washington Post*, May 6, 2020.

populations, ironically, had most benefited from Medicaid expansion and would have gained most economically from the more rigorous ACA provisions that Democrats campaigned on. Analyzing this bitter irony, sociologist Jonathan Metzl argued that these white, lower-class Americans and their families were "dying of whiteness."[46] In other words, Trump and other Republicans were preying upon existing white animus toward racial minorities and immigrants to convince white voters to disregard their own health prerogatives in pursuit of "biologically perilous" political stances.[47] Written before the pandemic, this assessment was prophetic.

Early into the pandemic, mask-wearing was politicized by conservatives who opposed it. Grassroots activists, such as the Cape Cod protestors, were part of the new wing of Trump-style Republican governors and members of Congress who discouraged wearing masks as an act of resistance against "oppressive" public health authorities, whom they deemed liberal. Republican leaders in Florida, Louisiana, and Texas likened mask-wearing to an assault on civil liberties. Some Republican governors attempted to ban masks from schools and other public settings, while others compared Democrats and public health officials to Nazis.[48] In using language that described mask-wearing as a marker of oppression or submission, anti-maskers cast themselves rhetorically as

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[46] Jonathan M. Metzl, *Dying of Whiteness: How the Politics of Racial Resentment Is Killing America's Heartland* (New York: BasicBooks, 2019). Metzl puts a spin on Thomas Frank's famous argument (Frank, *What's the Matter with Kansas?)* that Republicans vote against economic self-interests to promote socially conservative values.

[47] Metzl, *Dying of Whiteness*, 18.

[48] Gorski and Perry, *The Flag and the Cross*, 35; Jakob Rodgers, "Where Mask-Wearing Isn't Gospel: Colorado Churches Grapple With Reopening," *Kaiser Health News*, July 29, 2020; Jaclyn Cosgrove, "L.A. Megachurch Pastor Mocks Pandemic Health Orders, Even as Church Members Fall Ill," *Los Angeles Times*, November 8, 2020; Timothy Bella, "Ted Cruz Calls for 'Zero' Covid Mandates, While Rand Paul Urges Defiance Amid Delta Surge," *The Washington Post*, August 10, 2021; Lindsay Whitehurst, "Schools Fight Back Against GOP Governors, Defy Bans on Masks," *Associated Press*, August 11, 2021.

members of enslaved, colonized, and marginalized groups who had been historically "Othered" and forced to submit to totalitarian rule. This rhetorical move was not an overture of empathy toward the oppressed, however. Rather, it rang with anger as anti-maskers asserted themselves to be *not* the Other. Their language, imagery, and actions indicated a belief in white racial superiority that was enacted through rebellion against prisons of precaution.

Their rebellion was often stoked by their religious communities. Although most churches and worship centers across the country complied with local guidelines for in-person gatherings and pivoted to online services, a vocal minority of white evangelical church pastors mimicked the libertarian language of firebrand Republicans in discouraging mask-wearing in their churches, even during surges of infection within their own congregations. These pastors received outsized media coverage, bringing their views into the homes of conservative Christians states away. Linking their positions to godly authority, divine protection, and religious liberty, these pastors flouted public health mandates against large gatherings, turning their Sunday services into "super-spreader" events. At New Life Church, a nondenominational megachurch in Colorado Springs, Colorado, Pastor Mark Cowart opened services on the first Sunday after the state's mask mandate was enacted by telling congregants, "If they come trying to tell us we can't meet anymore, or we can't sing, or we can't have a Bible study anymore, that's not going to go. God does not want us to allow that to happen."[49]

[49] Rodgers, "Where Mask-Wearing Isn't Gospel."

In Baton Rouge, Louisiana, Tony Spell, the pastor of a Pentecostal megachurch, accrued numerous legal misdemeanor charges for leading his church members to violate masking rules in 2020. He was blocked from entering the courthouse and missed his own court appearance when he refused to wear a mask there. Explaining his legal debacle to followers in a video on his personal YouTube channel, Spell defended his decisions, comparing himself and other anti-maskers to the biblical prophet Daniel, who refused to stop praying and was sent to the lion's den for disobedience to the government. "We are God's anointed. We are standing up for our religious and civil liberties and preaching the gospel of Jesus Christ. We will never stop doing that," Spell said before adding, "There is no science to say the mask works."[50] In his video, Spell made four arguments to his congregants which resonated broadly among evangelical Christians. First, not wearing a mask was biblically correct; second, to wear a mask against one's will was a violation of constitutional rights; third, congregants did not need to wear masks because they are already "anointed," or under God's spiritual protection; and fourth, there is no scientific evidence that masks were effective. Although the third argument would logically nullify the fourth, Spell's contribution to Covid misinformation was in keeping with the sharply politicized moment.

Some white evangelical pastors were dismayed at this disregard for public health rules because death was ravaging their communities and the country. They also lamented

[50] Tony Spell, "Legal Update," YouTube, August 5, 2020, https://youtu.be/OZ09lM8Guks. Accessed November 5, 2022; Jaclyn Peiser, "Megachurch Pastor Tony Spell, Who Repeatedly Held No-Mask Services, Misses Hearing After Refusing to Wear Mask in Court," *The Washington Post*, September 23, 2020.

their inability to sway their own congregants on vaccines. In Houston, Steve Bezner, an evangelical pastor with preexisting conditions, eagerly awaited a vaccine but noted that his own church members were hard to reach. Swimming against the tide of anti-vaccine content on social media and Fox News was impossible, he said. "If I'm talking for one hour a week and they're feeding their souls elsewhere for fifteen hours a week, I simply can't win."[51] Bezner described what was, essentially, a magnetic pull into misinformation that was irresistible because of its sheer ubiquity and tantalizing culture wars attitude. Even when Jerry Falwell Jr. posted a selfie sporting an "I Got My Covid-19 Vaccine!" sticker, he used politics and the policing of personal freedom as a persuasive tactic to encourage followers to get a shot. Writing from his home in Virginia, his caption said, "Please get vaccinated so our nutcase of a Governor will have less reasons for mindless restrictions!"[52]

Scores of anti-authoritarian and pro-freedom anti-masking messages circulated through social media feeds and discussion threads. Masks were depicted as forms of enslavement; as dangerously limiting people's oxygen capacities and therefore counter-effective; and as erasers of individual identity that dehumanized autonomous people and turned them into a herd of "sheep." Antivaccine doctors such as Russell Blaylock, a frequent contributor to conservative media outlets and longtime vaccine skeptic, posted a viral article entitled, "Face Masks Pose Serious Risks to the Healthy," while anti-vaccine doctor Sherri Tenpenny tweeted, "The #MaskAgenda has nothing to do with your health

[51] Steve Bezner quoted in Sarah Pulliam Bailey, "A Pastor's Life Depends on a Coronavirus Vaccine. Now He Faces Skeptics in his Church," *The Washington Post*, December 11, 2020.
[52] Jerry Falwell, Jr. (@jerryfalwelljr), Instagram, April 8, 2021.

and everything to do with control & suppressing your #immunesystem. The longer you wear one, the more unhealthy you become."[53] Such messages often drew on racist, misogynistic, anti-Semitic, and Islamophobic tropes. They implied that if you resisted mask mandates, you were superior to people who accepted oppression.

In August 2020, Tenpenny posted a meme to her Instagram account that featured a close-up photograph of a white, blonde woman's facial profile against a dark background. The woman, her eyes closed, wore a pale pink facemask. In place of the stretchy white ear loop was a chain link and padlock. The overlaid text read:

> 2300 years ago, long before Islam, Arabs discovered that forcing people to cover their nose and mouths, broke their will and individuality, and depersonalized them. It made them submissive. That's why they imposed on every woman the mandatory use of a fabric over her face. Then Islam turned it into the woman's symbol of submission to Alah [sic], the man owner of the Harem, and the King. Modern psychology explains it: without face we don't exist as independent beings. The child looks in the mirror between the ages of two and three and is discovered as an independent being. The mask is the beginning of deleting individuality. He who does not know his history is condemned to repeat it.[54]

Anticipating backlash, Tenpenny's caption stated, "This is about breathing, not about triggering Islamophobic sentiment. Take it off." Regardless of whether Tenpenny created the meme, her post garnered tens of thousands of likes. The multilayered message was clearly Islamophobic, as it perpetuated prejudicial stereotypes of Islam as misogynistic, violent, sexually exploitive, and inhumane. The meme also promoted racist ethno-centrism and compared secular cloth surgical masks used for disease mitigation during a pandemic to Muslim veiling. It argued that facemasks functioned as veils, so they put

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[53] Russell L. Blaylock, "Face Masks Pose Serious Risks to the Healthy, May 11, 2020; Sherri Tenpenny (drtenpenny), Twitter, June 23, 2020. Neither post is available on the internet.
[54] Sherri J. Tenpenny (@drtenpenny), Instagram, August 28, 2020.

people in chains, and erased their identities, likening them to veiled Muslim women who are presumed to be oppressed. As this meme suggests, mask misinformation drew on and reinforced white male anxieties. It argued that masks were emasculating and suppressed free speech. In using words such as "enslaved," "oppressive," and "controlled," it suggested that wearing a mask transformed you into a colonized "Other" who had been kept down and forced to comply by a brutal regime. This Islamophobic example was suggestive of several key characteristics of the white Christian nationalism that powered Trump's populist movement.

Audiences who consumed content by Tenpenny, Pastor Spell, or myriad anti-mask influencers came to view masking and other public health measures as dehumanizing and dangerous to their survival. Coming from trusted sources, the directive to "take it off," was a blessing to flout the rules. Enacted and embodied, rejecting a mask was a political protest statement against a regime understood to be liberal, dangerously diverse, anti-individualistic, un-American, and godless. These beliefs were corroborated by conservative news coverage that depicted people in blue states and liberal cities wearing masks. To not wear one—to refuse—was then an assertion of political identity. The same dynamic of rejection as identity protection occurred around vaccines. Six months after the vaccines became available, even Trump could not convince supporters to vaccinate—there was already too much communal pressure and identity formation around *not* vaccinating and denying the severity of the pandemic.[55] The assertion of "I

[55] Allan Smith, "Trump Booed at Alabama Rally After Telling Supporters to Get Vaccinated," *NBC News*, August 22, 2021; Jamelle Bouie, "Many Republicans Are Anti-Vax. Are They Also Pro-Covid?" *New York Times*, August 31, 2021.

am not the Other" was the driving force behind anti-vaccination movements during the Covid-19 pandemic. As Peter D'Abrosca wrote for the conservative publication, *American Greatness*, "I won't take the vaccine because it makes liberals mad."[56] This oppositional strategy led people to die of whiteness.

**Conspiracy Realists and the Population Panics**

In the late twentieth and twenty-first centuries, "Big Pharma" became the central evil of most vaccine conspiracy theories. The pharmaceutical industry's soaring stock prices and profits, direct-to-consumer advertising, and global conglomeration made it an easy target, especially for those who supported alternative medical treatments that were not FDA-approved. Alex Jones, Sayer Ji, Sherri Tenpenny, Joseph Mercola, and other big names in conservative media demonized pharmaceutical industry executives for having a stranglehold on biomedicine and the FDA. They also capitalized on their opposition by selling millions of dollars in "holistic" supplements and books to consumers within their own echo chambers. They argued that pharmaceutical giants such as Pfizer and Merck had overmedicated people to create dependence on their own patented drugs, earning them billions of dollars off the backs of everyday people who were "sicker" than they ever had been before with chronic illnesses such as heart disease, diabetes, autoimmune disorders, and cancer.[57] Within these soulless schemes, the government, the American

[56] Peter D'Abrosca, "I Won't Take the Vaccine Because it Makes Liberals Mad," *American Greatness*, April 26, 2021.
[57] John P. Thomas, "Is it Normal to Be Sick?" *Health Impact News*, April 6, 2014, https://healthimpactnews.com/2014/living-sick-and-dying-young-in-rich-america/. Accessed November 14, 2022.

Medical Association (AMA) and its doctors, were at times willing participants, and other times easy dupes.

Conspiracy theories which appealed to people on the far-Left *and* the far-Right of the political spectrum cast doubt on trusted authority figures and allowed individualism, intuition, and personalized folk knowledge to shine as beacons of morality in a dystopic world of drugs and dark money. These theories explained mass illness and the marginalization of alternative and holistic medical approaches. They connected the dots of corruption and abuses of power. And they were not entirely wrong to do so. The decades-long opioid crisis is one example of how the government's dereliction of duty, combined with willful corporate profiteering, led to the tragic destruction of millions of people's lives because of drug addiction.[58] What makes conspiracy theories powerful is that they are based on a sliver of truth. Yet, the sliver of truth becomes conspiracy as it is grossly sensationalized. Conspiracy theories are impossible to disprove and yet categorically false, or "nonfalsifiable."[59]

Anti-vaccine conspiracy theories have been part and parcel of vaccine history, dating back to at least to the smallpox inoculations and vaccinations in Great Britain and the New England colonies. During the Era of Suspicion (1700-1890), some skeptics feared that mass vaccination was not only governmental overreach, but also a plan concocted by an Antichrist figure who schemed to turn people into thoughtless cows who

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[58] Keith Humphries et al. "Responding to the Opioid Crisis in North America and Beyond: Recommendations to the Stanford-*Lancet* Commission," *The Lancet* 399 (February 5, 2022): 555-604.
[59] Michael Barkun, *A Culture of Conspiracy: Apocalyptic Visions in Contemporary America* (Berkeley, CA: University of California Press, 2013), 7.

would do his bidding with the push of a syringe. Modern vaccine-hesitant movements also worried that the government concealed evidence of harms caused by vaccines to allow pharmaceutical companies to profit from vaccine sales and to suppress alternative or holistic medicine as a viable alternative to biomedicine.[60] Some asserted that the government intentionally hyped multiple non-existent swine flu epidemics to scare Americans into receiving unnecessary vaccines, again profiting pharmaceutical companies.[61]

Historically, skeptics have spun conspiracy theories during times of social transformation that are "unsettled."[62] Unsettled times are characterized by mass confusion, death, and economic insecurity. They are also times when minorities and other marginalized groups feel anxious about their social standing.[63] People in these groups feel compelled to find answers or make meanings out of threads dangling from the worn blanket that had previously comforted or sustained them. One journalist characterized this work of meaning-making as "flowchart conspiracism," because conspiracy theorists conceive of the world as a series of linked events that lead to one all-powerful entity and explanation.[64]

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[60] Reich, *Calling the Shots*, 137.
[61] Joseph Mercola, *The Great Bird Flu Hoax* (Nashville, TN: Thomas Nelson Publishers, 2006); Sherri J. Tenpenny, *Fowl! Bird Flu: It's Not What You Think* (NMA Press, 2006).
[62] Ann Swidler, "Culture in Action: Symbols and Strategies," *American Sociological Review* 51, no. 2 (April 1985): 273-286. Swidler argues that "unsettled lives" produce new explanatory beliefs that allow people to operationalize different social and cultural tools to create meaning out of social transformation.
[63] Anna Merlan, *Republic of Lies: American Conspiracy Theorists and Their Surprising Rise to Power* (New York: Metropolitan Books, 2019), 16; 39. Merlan notes that during the 1990s, Black and Latinx communities were more often the purveyors of conspiracy theories and that this changed during the 2010s to be more often white and male.
[64] Jonathan Kay, *Among the Truthers* (New York: Harper, 2011), 33.

Those who believe in conspiracy theories or attempt to prove them correct—by filling in the boxes of the flowchart—often refer to themselves as conspiracy theorists, realists, and truthers.[65] Many proudly identify this way in their social media bios. Borrowing the concept from progressive social activists, they also identify as "awake" or "woke" because they claim to be able to see the connections and corruption that so many leaders—and followers—would like to remain hidden.[66] For example, along with a misinformation article about Bill Gates creating a new "tattoo ID" for vaccination status, Kelly Brogan, a psychiatrist and member of the Disinformation Dozen, warned followers, "Wakey wakey folks. If we don't say no now, there may not be another opportunity."[67] Similarly, Erin Elizabeth of Health Nut News posted a cryptic message resembling a QAnon post: "There is a reason why perfect vision is called 20/20 vision. 2020 is the year that all is being revealed for those who have eyes to see."[68] In general, conspiracy theorists believe that the powers-that-be have written a "Master Narrative" that is deployed as fact in all media, from traditional journalism to cable news to history books to scientific journal articles to Google search results. They argue that this propaganda prevents people from waking up. Consequently, conspiracy theories are a self-fulfilling prophecy—they can never be proven right because those who write the "Master

[65] M. Giulia Napolitano and Kevin Reuter, "What Is a Conspiracy Theory?" *Erkenntnis* (September 24, 2021).
[66] Tim Dickson, "How the Anti-Vaxxers Got Red-Pilled," *Rolling Stone*, February 10, 2021.
[67] Kelly Brogan (@kellybroganmd), Instagram Stories, July 22, 2020.
[68] Erin Elizabeth (@healthnutnews), Instagram, August 17, 2020.

Narrative" have already destroyed the evidence. As Mikki Willis, a pandemic truther, argued, "Most 'independent factcheckers' are neither independent nor factual.'"[69]

Trump-era conspiracy theories, including those promoted by QAnon, fueled a latent hunger among truthers to find meaning within global chaos, following the axiom that "nothing happens by accident [and] nothing is as it seems."[70] They also promoted a clear alternative moral framework that consisted of anti-socialism, libertarianism, and the salvific powers of a Christianity-soaked free-marketplace. Many Christians had long imagined that human history was a series of battle between Good, those who followed God, and Evil, those corrupted by the Devil. Viewing the Covid-19 pandemic as a harbinger of evil world domination, believers were convinced that only good forces could fight back the evil creep of the government, the Deep State, and the New World Order. They considered themselves true patriots who were righteous defenders of the social body against a regime whose mission was to control people—body and soul.[71] In these beliefs, conservatives drew on a long twentieth-century history that understood capitalism as uniquely Christian, and therefore free, and derided communism, socialism, unionism and social safety net programs as tyrannical.[72]

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[69] Mikki Willis and his interviewee David Martin make this argument explicitly in his documentary film, "Plandemic 2: Indoctornation."
[70] Barkun, *A Culture of Conspiracy*, 3.
[71] The "New World Order" is a genre of conspiracy that has a history in the United States. See Barkun, *A Culture of Conspiracy*, Chs. 3, 4.
[72] Alison Collis-Greene, *No Depression in Heaven: The Great Depression, the New Deal, and the Transformation of Religion in the Delta* (New York: Oxford University Press, 2015); Kruse, *One Nation Under God*, 2015; Kim Phillips-Fein, *Invisible Hands: The Making of the Conservative Movement from the New Deal to Reagan* (New York: W.W. Norton, 2009).

Conspiracy theories about Covid vaccines fit neatly into the larger puzzle of the twenty-first century conservative Christian, pro-Trump worldview, which was propagated by prophet-like figures and other thought leaders who provided vaccine conspiracy theories with a platform. Barbara Loe Fisher of the NVIC continued to radicalize her views and increasingly kept company with anti-vaccine power players, such as Kennedy, Bigtree, and Wakefield.[73] The same was true for swaths of alternative health and spirituality influencers whose beliefs, dubbed by some scholars as "conspirituality," or the blending of conspiracy and spirituality, also made them ripe to consume and share conspiracy-based, anti-authority misinformation about Covid vaccines.[74]

By the time Covid hit the United States in early 2020, the internet was already comprised of millions of echo chambers, wherein user experiences were entirely personalized. Facebook, Twitter, YouTube, and Instagram algorithms fed users content that was informed by their prior clicks, purchases, and Google searches. If someone interacted with one piece of anti-vaccine misinformation, these algorithms automatically served them up more. These algorithms also amplified content that was inflammatory,

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[73] In the National Vaccine Information Center's 40th Anniversary fundraising letter, Fisher referred to "The Great Reset." She also argued that "First Amendment rights are on the chopping block in America." Barbara Loe Fisher, "Fall 2022 Fundraising Letter," National Vaccine Information Council (Sent via U.S. Postal Service, November 2022).

[74] Charlotte Ward and David Voas, "The Emergence of Conspirituality," *Journal of Contemporary Religion* 26, no. 1 (2011): 103-121. "Conspirituality" as descriptive term was popularized among independent scholars and journalists, as well as given much investigation by independent scholars and journalists. See Derek Berez, Matthew Remski, Julian Walker, *Conspirituality: How New Age Conspiracy Theories Became a Health Threat* (New York: Public Affairs, 2023). In news coverage, Ali Breland, "Wellness Influencers Are Spreading QAnon Conspiracies," *Mother Jones*, April 15, 2020; Matthew Remski, "Kelly Brogan's Covid-Denying Conspiracy Machine," Medium, September 16, 2020; Marissa Meltzer, "QAnon's Unexpected Roots in New Age Spirituality," *The Washington Post*, March 29, 2021; Eva Wiseman, "The Dark Side of Wellness: The Overlap Between Spiritual Thinking and Right-Wing Conspiracies," *The Guardian*, October 17, 2021.

sensationalist, and false. That sort of content had proven to engage the emotions of users more than traditional news stories, prompting more likes and reposts. Social media companies gained by magnifying conspiracy and multiplying the reach of content that incited anger, distrust, and other negative emotions. There had been ample evidence of this information loop in the 2016 presidential election, and some social media platforms attempted to tighten their community rules to prevent the spread of misinformation and disinformation, as they had around measles outbreaks, but this had little effect.[75]

Just as the virus that causes Covid-19 mutated into new variants making itself more resilient and infectious, so did the conspiracy theories created to make sense of it. New theories conceded that the virus *was* real, but that alternative therapies were being gagged by Big Pharma. Theorists argued that learning about these medications or herbal supplements and taking them would give you the protection you *really* needed.[76] And, the Covid vaccines caused injuries at alarming, unreported rates, and they were also turning people into cyborgs. Although these theories were easily debunked by journalists, scientists, and public health officials as factually incorrect misinformation, their stickiness meant that they continued to grip the imaginations of millions of Americans. It would be impossible to chart the full range of conspiracies that the pandemic generated—many have been deleted. However, the most influential Covid conspiracies did three

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[75] Elizabeth Culliford, "Facebook to Label All Posts About COVID-19 Vaccines," *Reuters*, March 15, 2021.

[76] Joseph Mercola, "Why They Don't Want You to Take Ivermectin," Email Newsletter (September 13, 2021); Joseph Mercola, "Better Than Hydroxychloroquine? Easier to Obtain," Email Newsletter (October 14, 2021); Amanda Arnold, "What Is Hydroxychloroquine Anyway?" *The Cut*, June 3, 2020; Samir Ferdowsi, "Can Ivermectin Cure Covid? No. *Vice*, August 19, 2021.

things. They discredited authorities. They fostered population panic. And they preached apocalypticism.

The content that flowed from these tropes powered anti-vaccine sentiment and actions, creating separate worlds of misinformation. They spurred fears that reflected back upon their believers' collective anxieties of loss of freedom, loss of population, and the loss of a good future. These created a complex flowchart leading people to conclude: We cannot trust science and therefore we must not let our liberties be taken away by its high priests. If scientists win, freedom, and the world as we know it, will be irretrievable.

*Discrediting Authorities:* Plandemic and *The Fauci Takedown*

The insecurity and confusion caused by the pandemic carved out space in the cultural imagination for new whistleblower figures to enter the spotlight as representatives of conservative vaccine hesitancy. The aim of these whistleblowers was to reveal alleged corruption within major health institutions and therefore impugn the character of Anthony Fauci and those who supported his public health agenda. To do this, the major players who spread vaccine misinformation, Kennedy, Mercola, Bigtree, Wakefield, and Tenpenny, often worked together, cross-promoted publications, appeared at joint speaking events, and boosted the same new anti-vaccine propagandists.

On May 4, 2020, two months into the pandemic in the United States, Mikki Willis, a filmmaker with few credits to his name, posted a twenty-six-minute

documentary called *Plandemic* to his Facebook, YouTube, and Vimeo accounts.[77] The video was a simple interview between Willis and a microbiologist named Judy Mikovits. Presented by Willis as a martyr, Mikovits was finally sharing her story. She claimed that Fauci had ruined her burgeoning career in the early 1990s so that he could personally profit from her groundbreaking work she had done as a graduate student. In the short film, the details of Mikovits's story were difficult to follow, but her message was clear: Fauci was corrupt and untrustworthy. On conservative social media, Mikovits was quickly lauded as a heroic whistleblower for unmasking that Fauci's pandemic hoax had been "planned," and #plandemic went viral. The release of *Plandemic* was orchestrated for maximum impact. Just two weeks before it dropped, Mikovits published a tell-all book, *Plague of Corruption*, which included a foreword written by Kennedy and a seal from Children's Health Defense (CHD) on the cover. Kennedy named Mikovits "an heir to [scientific] martyrs and, more directly, to a long line of scientists, whom public health officials have punished, exiled, and ruined specifically for committing heresy against reigning vaccine orthodoxies."[78] For people following Kennedy, Mikovits was a newcomer to the cause who would soon become a familiar face. The fact that she had not worked with vaccines before made her story even more believable. The video went viral, and Mikovits's book became an Amazon and a *New York Times* bestseller.

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[77] Casey Newton, "How the 'Plandemic' Video Hoax Went Viral," The Verge, May 12, 2020; Josh Rottenberg and Stacy Perman, "Who Made 'Plandemic'? An Ojai Dad Who Says it Cost $2,000," *Los Angeles Times*, May 13, 2020; Sheera Frenkel, Ben Decker, Davey Alba, "How the 'Plandemic' Movie and Its Falsehoods Spread Quickly Online," *New York Times*, May 21, 2020.

[78] Kurt Heckenlively and Judy Mikovits, *Plague of Corruption: Restoring Faith in the Power of Science* (New York: Skyhorse Publishing, 2020), xv.

Willis was upfront with followers about his longstanding hatred of Fauci. His brother had died from AIDS and been treated with AZT in the early 1990s. According to Willis, the treatment was not only ineffective but harmful. Why did this matter now? Willis asserted that Fauci, as director of the CDC, deliberately promoted AZT so that he could personally profit from its sales. He had done so intentionally because the medications that could actually cure AIDS were out of patent. Now, Willis argued, Fauci was at it again, suppressing available medications that would help Covid patients survive so that he had time to patent technologies for testing, treatment, and vaccination. Using a series of underhanded connections, Willis claimed that Fauci had planted SARS-CoV-2 in the Wuhan laboratory knowing that it would lead him to riches.[79] The takeaway from *Plandemic* and its spin-offs was that Fauci was a heartless and corrupt killer. Preempting factcheckers, Willis later claimed in his own book that it was impossible to factcheck his arguments, but the inability to find evidence to corroborate his data proved it was true. He offered $10,000 to anyone who could debunk one of his claims, but no one ever claimed the prize.[80]

*Plandemic* and *Plague of Corruption* were harbingers for the creation of content––memes, conservative news articles, documentaries, and books—that maligned Fauci and propped up alternative scientific and health authorities who claimed to find scientific errors in his work and flaws in his integrity. As Americans were being told to "follow the science" of public health recommendations, many conservatives co-created conspiracy

[79] Mikki Willis, *Plandemic: 100% Censored. 0% Debunked* (New York: Skyhorse Publishing, 2021).
[80] Willis, *Plandemic: 100% Censored. 0% Debunked*, 32.

theories that identified Fauci as a corrupt, soulless monster who was secretly a key member of the cabal working to run the New World Order. In his stead, they publicized figures with scientific credentials who disagreed with Fauci, such as Mikovits, Mercola, Tenpenny, Kelly Brogan, and Robert Malone, a scientist who was publicly bitter about Covid vaccines because he claimed to have invented mRNA vaccine technology and had not received credit.[81]

Other content linked Fauci to other despised figures, including billionaire-philanthropist Bill Gates and convicted child sex trafficker Jeffrey Epstein, as though they were part of a club colluding to create the New World Order. In one meme, Gates and Fauci were in a joint mugshot with the word "Catastrophe!" above their heads.[82] In another, Gates was the character Dr. Evil from *Austin Powers* and Fauci is his sidekick Mini-Me. "We have a vaccine to save the world," they said, with pinkies to their chins. "It's going to cost you $6 trillion dollars."[83] Memes often used humor, such as the Dr. Evil reference, to convey misinformation subtly. They were also contradictory—Fauci was an evil mastermind one day and an impish pawn the next—but they worked nonetheless to discredit the science and scientific authorities behind Covid regulations and vaccinations, feeding anti-vaccine sentiment and later, vaccine refusal, among conservative white populations.

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[81] Tom Bartlett, "Robert Malone: Vaccine Scientist, Vaccine Skeptic," *The Atlantic*, August 12, 2021; Elie Dolgin, "The Tangled History of mRNA Vaccines," *Nature*, September 14, 2021.
[82] Robert F. Kennedy Jr. (@robertfkennedyjr), Instagram, May 19, 2020.
[83] Robert F. Kennedy Jr. (@robertfkennedyjr), Instagram, June 23, 2020.

*Population Panics*

Safety fears have plagued vaccines since they were first introduced. However, Covid vaccines posed an altogether new problem for public health officials. The speed and efficiency with which they were developed, tested, and introduced to the public was, for many officials and Americans, a miraculous feat of medical technological innovation. In this respect, their reception was like that of the Salk polio vaccine in 1954, which inspired hope and pride in the powers of medicine to cure deadly and disfiguring disease. A certain amount of skepticism about the timeline and the Emergency Use Authorizations (EUA) of the vaccines was expected, and millions of people, particularly people of color opted for a "wait-and-see" approach, postponing their shots until a few months past when their vaccination bracket opened.[84]

Out of the near-constant din of misinformation (and disinformation) about the safety of Covid vaccines, there emerged a conspiracy theory centered on population control. Building upon the New World Order theory, some theorists said that Covid vaccines endangered reproductive functions for men and women and that Gates or other subversive world leaders were engaging in a population control plot. The evidence? A viral video featuring an alleged audio clip by Gates saying that the world needed three billion fewer people to slow the pace of climate change.[85] The quote, spoken by a robotic voiceover, was taken out of context, as Gates never linked this argument to vaccines.

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[84] Jessica Grose, "They're Not Anti-Vaccine, but These Parents Are Hesitant About the Covid Shot," *New York Times*, May 12, 2021.

[85] Angelo Fichera, "Video Targets Gates with Old Clip, Misleading Edit," *FactCheck*, March 5, 2021. Gates had also publicly discussed population growth in Africa as a "challenge" to controlling global poverty and public health problems. Also, because the Bill & Melinda Gates Foundation had funded so

However, #depopulationgate, as it became known on social media, evoked very present fears for white Christian nationalist Trump supporters who were new to the anti-vaccine movement. In 2015, the U.S. Census Bureau projected that growth of the foreign-born population would far outpace the growth of native-born people, and that this trend would continue through 2060.[86] In just a few decades, no single racial group would hold a majority of the United States population. News reports called this demographic shift "the browning of America," a phrase that frightened many white Trump voters and contributed to his own nativist, anti-immigration agenda.

Christians were losing their share of the religious marketplace, too. While Americans were disaffiliating from traditional religious groups and denominations, Christians were on track to constitute less than half of the population by 2070 because of a combination of mass defection by American-born Christians as well as immigration by non-Christian people.[87] Evangelicals, and even most Americans, believed the country was founded by Christians, and the belief that the United States was a Christian nation, ordained and protected by God, has been one of the most enduring and foundational myths in American history.[88] Republicans were losing the latest battles in the decades-

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many initiatives to combat infectious disease spread worldwide, conspiracy theorists implied that he, like Fauci, had much to gain by supporting the vaccine.

[86] Richard Alba et al. "The Myth of a Majority-Minority America," *The Atlantic*, June 13, 2021; Sandra L. Colby and Jennifer Ortman, "Projections of the Size and Composition of the U.S. Population: 2014-2060," U.S. Census Bureau (March 2015); Domenico Montanaro, "How the Browning of America Is Upending Both Political Parties," *NPR*, October 12, 2016.

[87] Robert P. Jones, *The End of White Christian America* (New York: Simon & Schuster, 2016); Stella Rouse and Shibley Telhami, "Most Republicans Support Declaring the United States a Christian Nation," *Politico*, September 21, 2022; Pew Research Center, "Modeling the Future of Religion in America," Report (September 13, 2022).

[88] John Fea, *Was America Founded as a Christian Nation?* (Louisville, KY: Westminster John Knox Press, 2011); Kerby, *Saving History*, 2020.

long national culture war over the policing of gender roles and sexuality. In particular, white Christian conservatives took offense at campaigns for LGBTQ rights because, in their view, LGBTQ people violated God-given biological sex differences and gender roles. Because of these well-documented demographic losses, a conspiracy theory called the "great replacement" emerged, claiming that liberal elites were replacing white Christians with non-Christians and people of color. Fertility rates in the United States had been declining since 1990, and economic crises caused by the pandemic threatened to steepen this downturn.[89] According to conservative white Christians, procreation boosted their population, and they sorely needed increased numbers if they were going to restore the white Christian majority in the United States. In these contexts, the specters of infertility, sterility, and miscarriage were particularly threatening.

As millions of people received shots during the first six months of 2021, average Americans discussed their vaccine side effects, often with pride. While flu symptoms for a day or two were expected, social media posts about abnormal side effects—or presumed side effects—went viral. Some women described disruptions to their menstrual cycles with alarm on Twitter and Instagram.[90] A relatively small number of posts about prolonged menstrual bleeding received outsized coverage, and conspiracy theories circulated as vaccine skeptics posted and reposted them. Secondary posters purported that the vaccines wreaked havoc on women's hormones, increased pregnant women's risk of

[89] Dana Goldstein and Daniel Victor, "U.S. Birthrate Ticks Up 1 Percent, Halting a Steady Decline," *New York Times*, May 24, 2022.
[90] Jennifer Couzin-Frankel, "Thousands Report Unusual Menstruation Patterns After Covid-19 Vaccination," *Science*, July 15, 2022. In 2022, a scientific study confirmed that Covid-19 vaccines could temporarily alter menstrual cycles, although they did not affect fertility or increase risk of miscarriage.

miscarriage, caused women to bleed for weeks, and to have contaminated breastmilk. Ironically, some pro-vaccine mothers were so eager to pass on some vaccine-induced immune protection to their infants (in the form of antibodies) that they prolonged breastfeeding, tried to restart lactation, or shared the breastmilk of vaccinated women among friends and contacts made in Facebook groups.[91] This was yet another instance in which echo chambers kept people's mindsets toward vaccines worlds apart from one another.

The prevailing fear in conspiracy theory circles was that vaccinated people "shed," meaning that invisible vaccine-based toxins were transmissible and could affect even unvaccinated people nearby. Building on Covid denialism, people who opposed the vaccine reasoned that, if the pandemic was a hoax, then forced vaccination could lead to forced sterilization and population control. Stories about vaccine-induced hormone disruption and vaccine shedding were shared word-of-mouth and online. Before social media, vaccine hesitancy had spread between people who told stories about injured children they knew. In the age of social media, everyday people had much larger audiences for their stories. For example, Madeleine Doherty, an Australia-based alternative medicine influencer who had long claimed she was injured by the HPV vaccine, Gardasil, reposted an anonymized text during the Covid pandemic that stated:

> Been bleeding for 3 weeks now, since a few days after returning from a trip to Sydney. And hubs has colleagues who had the j.a.b. the week prior to me going down too. I had already had my norm cycle a week prior to that so one week off and now 3 weeks on with it increasing in heaviness and clots.

[91] Heather Murphy, "Vaccinated Mothers Are Trying to Give Babies Antibodies via Breast Milk," *New York Times*, April 8, 2021.

Madeleine added her own advice, in bolded, all-capitalized text. "Ladies, stay da fk [sic] away from people who have had the jab!!!!"[92] This warning would have stoked panic among deliberately unvaccinated people who began to fear even being in proximity to people who had been vaccinated. In a curious adaptation of the logic of social distancing, unvaccinated people worried about adverse effects from the vaccine instead of the disease.

The effects of this panic quickly migrated offline and into the real world. Within a week, Centner Academy, a private school in Miami, Florida, banned vaccinated teachers and staff from interacting with students in person and announced that teachers who chose to vaccinate after the school year was over would be terminated. The school's CEO, Leila Centner, explained that "even among our own population, we have at least three women with menstrual cycles impacted after having spent time with a vaccinated person."[93] Citing online misinformation, Centner made decisions about her employees based on the false belief that toxic material in the vaccine was transmissible from vaccinated to unvaccinated people. Specifically, she argued, it could disrupt menstruation, and by association, fertility. Medical freedom groups applauded Centner's actions, even though they prohibited employees from exercising their own medical freedoms. The Centner

[92] Madeleine Doherty (@madeleinesrhythym), Instagram Stories, April 21, 2021. Note that social media users discussing controversial content often use abbreviations or alternative punctuation, such as "j.a.b." (vaccine) to avoid being flagged by platform moderators. This dynamic increased as anti-vaccine content and misinformation was increasingly removed or users de-platformed throughout the Covid pandemic.
[93] Patricia Mazzei, "Florida Private School Bars Vaccinated Teachers From Student Contact," *New York Times*, April 26, 2021; "Miami School Says it Won't Employ Vaccinated Teachers, Citing Debunked COVID Myths," *NBC News 6 South Florida*, April 26, 2021.

Academy decision illustrated how "medical freedom" was becoming synonymous with "anti-vaccine."

An even more graphic image that circulated on Instagram was posted by Christiane Northrup, a gynecologist best known for writing alternative health books about menopause during the 1990s and early 2000s and for being a frequent guest on *The Oprah Winfrey Show*. Northrup embraced conspiracy theories and QAnon during the pandemic, causing her to be named one of the "Disinformation Dozen."[94] In August 2021, Northrup posted, without attribution, a close-up photograph of a woman holding what appeared to be a very small, dark red, shriveled, dead fetus. The text on the image read, "You can even see the ridges of the uterus," and Northrup's caption explained, "This is called a decidual cast. Thousands of women are experiencing the sloughing of their uterine linings. Just from being around those who have had the 'thing.'"[95] The image was shocking and ambiguous, and Northrup did not provide any medical explanation for the occurrence. Rather, she stoked fear and confusion precisely the way Trump did in public speeches.

The Covid vaccine fertility panic extended to men's virility as well. Vaccine-induced sterility content was graphic and sexist, likening vaccination to emasculation. One meme depicted a row of seedless fruits above images of a woman's and a man's legs, all clad in tight jeans. Beside these was a photo of two vials of vaccine with

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[94] Jonathan Jarry, "A Dozen Misguided Influencers Spread Most of the Anti-Vaccine Content on Social Media," McGill University Office for Science and Society (March 31, 2021).
[95] Christiane Northrup (@drchristianenorthrup), Instagram photo, April 20, 2021.

syringes. “If they can make fruit seedless, they can make you seedless” the meme read.[96] The bodies were nearly indistinguishable, almost androgynous. The meaning behind the meme was that the Covid vaccine dampened one’s sexual identity and procreative functions. Unvaccinated bodies, especially male bodies, were virile, belonging to masculine leaders who were in control. Vaccinated bodies were weak, sterile, and feminine.[97]

Along these lines, Erin Elizabeth, the founder of Health Nut News, a member of the Disinformation Dozen and wife of Joseph Mercola, tweeted “Trigger warning. Sexual content. Sort of :)” along with a photo of a pair of twentysomething women in a crowded European square, smiling and holding up a homemade sign that read “Looking 4 Unvaxxed Dick,” which included a phallic drawing.[98] More seriously, Rashid Buttar, a physician, conspiracy theorist, and Disinformation Dozen member, told followers that “becoming sterile [is] almost a certainty” if they got vaccinated. Conspiracy theorists also planted the idea that a vaccinated or masked man would be less desirable to women because he would be rightly seen as a follower or a sheep who was not “awake.” A self-identified “conspiracy realist” with the Instagram handle @blacksheep_escape created a series of memes to this effect, jokingly rating potential boyfriends using pandemic beliefs

[96] Account suspended (@thevoxwolf), Twitter, October 12, 2021.
[97] Tucker Carlson, Fox News host and influential rightwing figure, claimed that having COVID itself was emasculating. Matthew Loh, “Tucker Carlson Falsely Claims That COVID-19 ‘Does Feminize’ People,” *Business Insider*, December 9, 2021.
[98] Erin Elizabeth (@unhealthytruth), Twitter, May 3, 2022. A few months after this post, Elizabeth’s account, which was also for Health Nut News, was suspended for violating Twitter Rules. As she reported to followers who searched for her website, she had also been banned from Facebook, Instagram, and YouTube, losing millions of followers. Closing the website, a major spreader of health misinformation, launched a private subscription Substack newsletter.

and responses as criteria: "He's a 10 but he wore a mask until the TV told him he could take it off" and "He's 10 but he believes in routine childhood 'v.'"[99]

It is important to view these memes and misinformation posts in the broader context of rising white Christian nationalism in the United States. White Christian nationalism idealizes heteronormative gender roles and a morally correct family structure that is inherently homophobic.[100] As vaccine hesitancy grew to be more aligned with white Christian nationalist beliefs, conspiracy theories about vaccine dangers were more on homophobic in content. Many anti-vaccine writers despised what they viewed as a liberal national culture that was not only accepting of LGBTQ identities and rights, but also celebrating and encouraging sex and gender fluidity. Anti-vaccine advocates and misinformation spreaders frequently asserted sex and gender essentialism and propagated homophobic content. Conspiracy theories along these lines claimed that gay and lesbian people were flagrantly promoting Covid vaccines in order to make straight people gay or to sterilize Americans as part of a sinister depopulation agenda.[101] A post on *The Covid Blog*, a website that published conspiracies about Covid and offered legal support to people purporting censorship of anti-vaccine views argued that mRNA vaccines were uniquely part of a forced depopulation campaign perpetrated by queer people.

> *The COVID Blog™* started the LGBTV (for vaccine) acronym because the mRNA and viral vector DNA injections are required for admittance and acceptance into that culture. Both homosexual culture and the injections (vaccine genocide) are

[99] Laura Schmidt (@blacksheep_escape), Instagram, July 18, 2022.
[100] Sophie Bjork-James, "Christian Nationalism and LGBTQ Structural Violence in the United States," *Journal of Religion and Violence* 7, no. 3 (2019): 278-302.
[101] Ruaridh Marr, "QAnon Supporters Embrace Conspiracy That COVID Vaccine Makes People Gay," *MetroWeekly*, February 11, 2021.

> vital elements of the depopulation agenda. The previous eliminates procreation, while the latter eliminates human life in real-time.[102]

Within a year of the vaccine launch, scientists did corroborate the claims of many women that the Covid vaccine temporarily disrupted menstrual cycles, although they assured the public that this was a benign side effect.[103] This news only propelled Covid vaccine fertility panic. This panic also played out in discussions among anti-vaxxers regarding hot-button topics, such as vaccination-while-pregnant and vaccination-while-breastfeeding, both of which were strongly recommended by medical professionals. Highlighting the panic over fertility and procreation, another documentary arrived on the scene in 2022. In another collaboration between anti-vaccine leaders, *Infertility: A Diabolical Agenda* was a streaming film executive produced by Kennedy and directed by Wakefield. The cross-promotion between these leaders publicized one another's platforms and sent the same messages to followers, just differently articulated. Bigtree's online news show ran segments about "the sudden, unexplained rise in both miscarriage and infertility," while Mercola publicized the "post-jab explosion of infertility."[104]All promoted fears of increased risks of post-vaccine miscarriage that had been debunked in the scientific consensus.

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[102] Brian A. Jenkins, "2022 Midterm Elections: Rampant Homosexuality Is the Universal Eschatological Sign of the End Times," *The COVID Blog*, October 11, 2022, https://theCovidblog.com/2022/10/11/midterm-elections-the-universal-eschatological-sign-of-end-times-rampant-homosexuality-and-non-vote-democrats-out/. Accessed November 15, 2022.
[103] Knuvil Sheikh, "New Study Shows Covid Vaccines Can Temporarily Alter Menstrual Cycle," *New York Times*, September 27, 2022.
[104] Del Bigtree, "The Miscarriage of Science," Email Newsletter (November 10, 2022); Joseph Mercola, "The Great Cover-Up of Post-Jab Disease Explosion," Email Newsletter (July 3, 2022).

Fertility panics were projections of deep social concerns onto an Other. They represented a lack of control over the future of American demographics, and by extension, the future of American politics and culture. Trump's "Make American Great Again" branding had been successful because it spoke to those who felt embattled by a "browner," more racially, religiously, and ethnically diverse country. It also appealed to those who enshrined traditional gender roles and sexual essentialism. And yet, not much had changed during the Trump presidency to course-correct what conservative white Christians saw as an unnatural decline in their cultural influence. As a result, this contingent turned Covid-19 vaccines into scapegoats. As they told the story, those vaccines were *causes* of degeneracy intentionally implemented by "the powers that be" in order to accelerate the process of undercutting white supremacy and depopulation. In these population panics, vaccines were bioweapons used to make women infertile, men sterile, and cause miscarriages. These ideas contributed to low vaccination rates and increased morbidities in predominantly white, conservative, rural regions.

*The End of the World As We Know It*

Perhaps the greatest conspiracy theory that fueled vaccine skepticism and anti-vaccine sentiment was the "The Great Reset."[105] This theory proposed that most elite people in the world were in a secret cabal that was using the pandemic—likely started by

[105] In 2020, World Economic Forum leaders Klaus Schwab and Thierry Malleret published a book titled *Covid-19: The Great Reset*. Conspiracy theorists picked up on their concept and adapted it into a theory in which world leaders were using the Covid pandemic to "reset" the global economy and promote a "green energy" agenda that would hurt most people. See Olga Robinson et al. "What Is the Great Reset – and How Did it Get Hijacked by Conspiracy Theory?" *BBC News*, June 24, 2021.

Fauci—to "break America" by forcing Americans to submit to one hegemonic socialist government with no national boundaries and no unique identities allowed.[106] According to The Great Reset, conniving elites, intent on "resetting" the global economy and implementing a global surveillance state. Technologies, including the Covid vaccine, would serve as tools for marking and tracking everyone, and "vaccine passports" indicating vaccination status would be required to enter public spaces or participate in daily life. Conspiracy theorist Naomi Wolf argued, "in the wake of COVID the whole world has become a digitized platform owned by six entities that can be switched on and off at will.… Grids can be switched off. Gone. Supply chains can be switched off. Gone. Personalities can be switch off. Gone. Whole populations can be switched off."[107]

The Great Reset was a Covid-based interpretation of other grand conspiracy theories, such as the creation of a One World Government, which conspiracy theorist Alex Jones had been warning about for years, or the New World Order that QAnon followers spoke about.[108] Central to The Great Reset were the Covid-19 vaccines that utilized mRNA vaccine technology, which conspiracy theorists falsely claimed could edit genes. A broad range of terrible consequences of this Great Reset traveled around social media, planting fear among vaccine skeptics. One such theory was that vaccinated people

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[106] Naomi Wolf, *The Bodies of Others: The New Authoritarians, COVID-19 and the War Against the Human* (All Seasons Press, 2022), 6; 280. Wolf refers to "The Great Reset" concept as "Davos 2022"
[107] Wolf, *The Bodies of Others*, 226.
[108] "The Great Reset" came into use when Klaus Schwab, the founder and executive chairman of the World Economic Forum coined the term and co-authored the book, *Covid-19: The Great Reset* in 2020. In Schwab's view, the global economic shake-up was a positive direction for humanity, a second chance. In conspiracy theories, The Great Reset had eschatological implications or signaled a complete loss of personal liberties. Conspiracy theorist Alex Jones published a counternarrative, *The Great Reset: The War for the World* in 2022.

would be connected wirelessly to the fifth generation (5G) broadband telecommunications network that was rolling out around the country.[109] Humans would then be programmable and would require "software updates." The frequency with which Covid-19 mutations caused new surges fanned the flames of this theory, as Pfizer and Moderna developed booster vaccines to help protect against the Delta and Omicron variants.

Another theory propagated by conservative alternative health influencers, including Mercola, a previously licensed osteopath, and Kelly Brogan, a psychiatrist, were that mRNA technology would permanently change a person's DNA and fundamentally dehumanize people. In her lengthy essay, "Health as Spiritual Warfare," Brogan wrote, "Could it be that this vaccine is the ultimate gesture of spiritual capture and transhumanistic abandonment of human biology? If we are no longer genetically human, do we still have human rights?"[110] Here, Brogan suggested that taking charge of one's personal health is an act of biological and spiritual salvation. This follows familiar logic among vaccine-hesitant forebears that health is a state of being "natural," or unvaccinated. Brogan's depiction of vaccine-induced soul-death was a dystopic premonition of what she called spiritual warfare. Brogan envisioned a brave new world in which vaccines edited or deleted biological differences and erased identities and humanness. Rhetorically, she was just asking questions, leading readers into improvable

[109] Cellular towers have a long history of concerning natural health proponents as well as conspiracy theorists which was amplified with the rollout of 5G in 2019. ProPublica, the independent news organization, has noted that the Federal Communications Commission has not conducted health and safety studies on 5G. See Peter Elkind, "How the FCC Shields Cellphone Companies from Safety Concerns," *ProPublica*, November 10, 2022.
[110] Kelly Brogan, "Health as Spiritual Warfare," KellyBroganMD.com (n.d.).

territories that would stir fear and provide no answers, a similar technique to Trump's common excuse for pushing conspiracy theories: "I'm just asking questions."

Brogan's discussion of transhumanism—of becoming technologically "more than human"—reflected similar themes previously advanced by her then-husband, Sayer Ji. Ji, the owner of GreenMedInfo and another Disinformation Dozen member, had written extensively against vaccines for years, arguing that they established a slippery slope toward transhumanism. Eerily dystopic, this conspiracy theory also resonated with vaccine-hesitant parents who had been engaged in the cause for decades. Specifically, it appealed to mothers who believed in the power of their children's sacred immune systems to fight illness. It also appealed to mothers who had long disliked or feared vaccines because of their "one-size-fits-all" dosing and schedules.[111]

Beside these dystopic theories, there were apocalyptic ones, too. While some envisioned The Great Reset bringing on a future of technological enslavement and transhumanistic soullessness, a subset of white evangelical Christians viewed the pandemic as a sign of the "End Times." For some who read the Book of Revelation in the New Testament as a prophecy for the rapture, or the second coming of Jesus Christ, the vaccine could be understood as the "mark of the beast."[112] According to this prophecy, signs identifiable to true believers in God would appear, signaling the coming of the apocalypse and ultimate judgment. A political figure, understood to be the Antichrist,

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[111] Meg Kilcup (@awholehealthlife), Instagram, August 13, 2020. "We are all bio individual. We have unique genes. We have unique environmental exposures. This is why a biologic product can generate a variety of reactions in individuals. One size fits all medicine does not make clinical sense."

[112] Curtis Chang, "Is the COVID Vaccine the 'Mark of the Beast'?" *BioLogos*, March 10, 2021, https://biologos.org/series/should-christians-take-the-vaccine/resources/is-the-Covid-vaccine-the-mark-of-the-beast. Accessed November 10, 2022.

would assume totalitarian power and require his followers to be marked, testing the faith of Jesus Christ's true believers. To achieve everlasting life, the faithful must read the signs, refuse the mark, and oppose oppression, likely risking their lives in the process. Some Christians propagated the theory that the appearance of the Covid vaccine was akin to the Antichrist testing their faith by requiring the vaccine to mark their skin.[113] The mark of the beast theory of Covid vaccines encouraged some white evangelical churches to actively disobey state quarantines by continuing to gather for in-person services. It also inspired some martyrdom enactments, which were posted online. While liberals used the term "apocalyptic" to describe overflowing hospitals, mass deaths, and empty streets, a small number of evangelicals used it biblically. In sum, the mark of the beast theory was a handy corollary to the more common fear that vaccines would diminish the liberty of individuals to experience and express their unique identities and to experience freedom.

Apocalypticism has been an enduring and recurring belief in American culture. Just as conspiracy theorizing surges during unsettled times and then recedes, apocalyptic fantasies and prophecies "invite constant reappraisal in the light of cultural configurations and historical circumstances."[114] As they map onto unsettled times, they bring meaning to events and circumstances that are otherwise incoherent. One historian of religion in the United States has charted spikes in evangelical apocalypticism, finding it correlated to global events such as the Bolshevik Revolution, the Great Depression, the rise of Italian

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[113] Elizabeth Dwoskin, "Some Evangelicals Say Covid Vaccine Is the Mark of the Beast," *The Washington Post* (February 16, 2021); Elizabeth Dias and Ruth Graham, "White Evangelical Resistance Is Obstacle in Vaccination Effort," *New York Times*, April 5, 2021.
[114] Randall Balmer, "'Thy Kingdom Come': Apocalypticism in American Culture," *Union Seminary Quarterly Review* (1995), 26.

dictator Benito Mussolini, the New Deal, the fall of the Soviet Union, Iraqi dictator Saddam Hussein's invasion of Kuwait, and the terror attacks of September 11, 2001.[115] It is no surprise that apocalypticism resurfaced among white evangelicals during those most unsettled times of the Covid pandemic. The appropriation of vaccines as a "sign of the times," was even more significant, as vaccine opposition became identified as a white evangelical identity trait. Conservative white Christians enacted the anxieties fueling their cultural embattlement and perceived marginalization by claiming an apocalyptic prophecy which, if followed, provided reason *not* to get vaccinated against Covid.

During the Covid-19 pandemic, conspiracy theories functioned both as signs of unsettled times and as identifications with racial, religious, political, and gendered ideals and morals. Many people who at one time believed in QAnon have attested to the power of belonging and purpose that the meaning of "Q drops" provided them during dark days.[116] Covid vaccine conspiracy theorizing performed important identity work, carving out boundaries of yet another vaccine-hesitant community and creating among its members a shared, embodied experience of being *unvaccinated*.

The results of this identity construction were tangibly tragic. By adopting anti-vaccination as an ideal, one-third of the United States population remained uncompliant with vaccine recommendations, causing Covid-19 transmissions and deaths. They caused demonstrable demographic changes to rural communities in red states that might have

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[115] Matthew Avery Sutton, *American Apocalypse: A History of Modern Evangelicalism* (Cambridge, MA: Belknap Press, 2014). Apocalyptic theology is a tenet of the larger worldview known as "premillennialism," the belief that the world will end before Jesus returns.

[116] Christopher T. Conner and Nicholas MacMurray, "The Perfect Storm: A Subcultural Analysis of the QAnon Movement," *Critical Sociology* 48, no. 6 (2022): 1049-1071.

long-term consequences for the Republican electorate. And they shifted the course of United States vaccination-hesitancy history.

No events could have predicted the vitriolic reaction to the Covid-19 vaccines among tens of millions of Americans. As this project demonstrates, there had been vaccine-hesitant Americans before. However, the type of anti-vaccine sentiment that Covid produced was new. It was the product of deeply unsettled times occurring just as a flow of instantaneous social media posts collided against religious beliefs and practices concerning vaccination that had been centuries in the making. In the years prior to the pandemic, Trump had effectively capitalized on large-scale disaffection among conservative white Christians who were experiencing the shockwaves of economic uncertainty and demographic changes. He magnified their feelings, gave credence to their embattlement, and encouraged them to maintain their hegemonic cultural identity at all costs. Religious liberty was a battle they could fight, even if their rights were never really in question. At the same time, vaccine skeptics who worried about the purity of their children's bodies and struggled with parental guilt had transformed their scattered beliefs and practices into a burgeoning medical freedom movement. Two key issues, religious liberty and medical freedom, grew together during the pandemic, and the sheer number of Trump supporters swallowed up what had, for centuries, been a rather small set of vaccine-hesitant movements. In the blink of an eye, almost half of the population equated vaccines with tyranny and used them as objects on which to project their anxieties. What had been a largely reasoned skepticism in the Era of Promise (1890-1997) and the Era of Controversy (1997-2015) became unreasoned opposition when the Covid pandemic hit—

just one box in the endless flowchart of conspiracy. As with prior vaccine resistance movements, Covid anti-vaccinationists often appealed to religious liberty to defend their stances, but now they were far more public and political than they ever had been. Becoming anti-vaccine had become an identity marker for a desperate, individualistic conservative population that was fighting for its life.

# CONCLUSION

In April of 2022, my colleague Joanna posted photographs to her Instagram stories of a carefully typed letter that she had received in the mail. Aunt Margaret, a Catholic from Pennsylvania, had written to decline Joanna's wedding invitation. "I had been excitedly planning to attend what amounts to be a much looked-forward-to family reunion," she wrote. However, "I was very dismayed that the first communication in the envelope [we] received was not an announcement of your nuptials but rather was a jarring notice about your wedding venue's 'COVID-19 Protocol.'" Aunt Margaret elaborated two reasons for declining vaccination. First, she believed that Covid vaccines used aborted fetal cells for testing. The original abortion and the use of the aborted fetal cells were sins—two wrongs could not make a right. This was a well-worn argument made by a subset of conservative Catholics against many past vaccines—one which ignored Church doctrine. Aunt Margaret's second argument was timelier:

> I think it's awful that your venue is using you, and probably other couples, as their frontline compliance officers for what I see as politically correct maneuvering and coercion of conscience by the institutional elite to steer people to submit to an experimental 'vaccine' for COVID-19 if they want to be with their families and friends, and then further discriminating against those who don't have their 'papers' by insistence on their submitting to medical testing, and requiring submission of their private health information to you in order to gain admission, especially when we know that the vaccinated transmit COVID-19 also.
>
> These two factors, in my humble opinion, do not add up to a conclusion that it is a simple or profound way to care for one another by submitting to these vaccine(s). For me it is a more charitable act to reject these vaccines per the reasoning above and to speak the truth, in love, about them.[1]

[1] Letter from Margaret to Joanna, Instagram Stories (April 13, 2022). Names changed. Because Joanna has a private Instagram account, I asked her for permission to quote the contents of the letter, which she granted under anonymity. All other quotes from social media that have previously been cited in this manuscript were from public accounts, so the names of posters were not changed.

Aunt Margaret signed off with well wishes for a long and happy married life, blessed with children and grandchildren. Below her signature, she included a clip art depiction of a fetus ensconced in flowers.

Aunt Margaret and her family did not attend Joanna's wedding because doing so required submitting proof of vaccination or a negative Covid PCR test prior to the event. Her letter, thoughtfully composed and seemingly written in good faith, neglected some important issues. By April 2022, only mRNA vaccines developed by Moderna and Pfizer were used in the United States against Covid-19. Neither one used testing on fetal cell lines for their development and manufacturing. The Vatican, Protestant denominational bodies, and major anti-abortion organizations had long argued that Covid-19 vaccines were not only "morally permissible," but also that vaccination was a moral imperative.[2]

For Aunt Margaret, Covid-19 vaccines, non-invasive testing, and documentation were unreasonable and oppressive requests. Echoing rhetoric similar to that on Fox News or circulated through anti-vaccine memes on Facebook, she also alluded to conspiratorial actions by pharmaceutical companies, the event venue, and the social requirement of political correctness. Aunt Margaret neglected to mention the pandemic at all—the lives lost, the risk of health and life heightened by a large gathering, and respect for the concerns that Joanna may have harbored about hosting such an event during a global

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[2] David Crary, "Evangelicals' Vaccine Skepticism Isn't Coming from the Pulpit," *Associated Press*, April 7, 2021; Joshua J. McElwee, "Pope Francis Suggests People Have Moral Obligation to Take Coronavirus Vaccine," *National Catholic Reporter*, January 11, 2021; Vatican News, "Vatican CDF Says Use of Anti-Covid Vaccines 'Morally Acceptable," *Vatican News*, December 21, 2020. Early into Covid-19 vaccine roll-out, some American Catholic leaders differed from Pope Francis I on the morality of certain vaccines, such as those produced by Johnson & Johnson, which did use fetal-cell lines for testing. This was a short-lived controversy. See Michelle Boorstein, "After Days of Halting Statements About Vaccine Morality, Multiple Catholic Leaders Call the Shots Urgent, Important," *The Washington Post*, March 5, 2021.

health crisis. In this, she failed to acknowledge why Joanna and her fiancé, as well as their wedding venue, had implemented Covid-19 precautions in the first place. These omissions were one small expression of how Covid-19 testing, vaccines, and mandates had caused immeasurable rifts among many American families.[3]

The grim realities of the Covid-19 pandemic laid bare how polarized the United States had become by 2022. Responses to the pandemic were fueled by tribalism, misinformation, and disinformation. Conspiracy theories were so well-accepted among large swaths of the population that they were no longer theories. In a foreseeable twist, members of the Disinformation Dozen and other conspiracy theorists began, in late 2022, to flip the script on misinformation. They described mainstream news and scientific facts as an "axis of misinformation" in email newsletters to subscribers and described censorship of their content as a "war on truth."[4] Opposition to vaccination had tragic repercussions. More than 400,000 Americans died in the year immediately following the Covid-19 vaccine rollout, and we know that a great number of these people were unvaccinated and living in counties that supported Donald Trump.[5] After the Trump presidency ended in 2020, the "ReAwaken America" tour, a show featuring many of his high-profile supporters, and even the original MMR-autism scientist Andrew Wakefield, traveled the country for years. Showcasing Christianity-infused, conservative patriotism,

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[3] Eve Peyser, "The Families Torn Apart by Vaccine Politics," *New York Magazine*, May 2021.
[4] Joseph Mercola, "Everything You Believe Is Wrong: Why Misinformation Now Rules," Email Newsletter (November 12, 2022); Informed Consent Action Network, "Panicked," Email Newsletter (October 14, 2022); Christiane Northrup, "My Growing Truth Community Needs You!" Email Newsletter (November 22, 2022).
[5] Bradley Jones, "The Changing Political Geography of COVID-19 Over the Last Two Years," Pew Research Center (March 3, 2022).

speakers rallied voters on core conservative issues—anti-vaccination and medical freedom among them.[6]

The ramifications of anti-Covid vaccine sentiment are many. Rural regions of the United States lost significant proportions of their populations, which may weaken Republican electorates in those areas for years. If Republicans continue to maintain broadly anti-vaccine positions, elected leaders may choose to limit vaccine research funding, greatly slowing down the ability to create next-generation Covid vaccines.[7] During the pandemic, twenty-five million children worldwide fell behind on routine immunizations, and some officials have predicted that the United States population could lose herd immunity against many of the diseases that vaccines had eliminated from parental worry during the twentieth century.[8] Given the political nature of Covid vaccine opposition, parents, particularly in red states, might opt out of vaccinating their children, giving measles, whooping cough, and polio the ability to spread and take lives.[9] And because of the successes of the medical freedom movement and its alliance with the Republican Party, religious exemption rights would remain in place or be expanded.

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[6] Elizabeth Dias and Ruth Graham, "The Growing Religious Fervor in the American Right," *New York Times*, April 6, 2022; Lisa Hagen, "A Tour Fuses Conservative Christianity and Conspiracy Theories," *NPR*, November 3, 2022; Sam Kestenbaum, "I Think All the Christians Get Slaughtered: Inside the MAGA Road Show Barnstorming America," *Rolling Stone*, September 17, 2022; Peter Stone, "Trump Loyalists Team Up with Anti-Vax Doctors for 'Health and Freedom' Tour," *The Guardian*, September 3, 2021.
[7] Benjamin Mueller, "The End of Vaccines at 'Warp Speed,'" *New York Times*, November 18, 2022.
[8] Stephanie Nolen, "Sharp Drop in Childhood Vaccinations Threatens Millions of Lives," *New York Times*, July 14, 2022; Lena H. Sun and Mark Johnson, "First Polio Case in U.S. in Nearly a Decade Confirmed in Unvaccinated Rockland County Man," *The Washington Post*, July 21, 2022.
[9] Lena H. Sun, "Growing Vaccine Hesitancy Fuels Measles, Chickenpox Resurgence in U.S.," *The Washington Post*, December 26, 2022; Yasmin Tayag, "Will America Continue to Turn Away from Vaccines?" *Vox*, November 22, 2022.

**Embodied Religious Practice**

Vaccines and mandatory vaccination have always been controversial, and even frightening, to minority factions small and large. Are vaccines too akin to dark magic, too good to be true? Are the scientific mechanisms too difficult for most to comprehend? Are the needles too fearsome? Or is the puncture of skin, what would seem to be the barrier between our insides and the outside world, too unnerving? Perhaps it is the preventative nature of vaccines, the thought of "does he really need this?" that darts through a parent's mind when her child screams in the doctor's office? Or is it *something else* entirely?

There are plenty of things we do that we do not understand, that scare us, that make our children cry. Unlike other biomedical practices or technologies, vaccines evoke existential ideas about what our bodies are made of, the meaning of children, and the acceptable degree of personal sacrifice to the social body. Over three centuries, vaccines incurred people to ask: what is pure, natural, and should be left untouched? And conversely, what is polluted, unnatural, and should be exorcised? Vaccines do not simply blur the line between sacred and profane. They forge a space between the sacred and profane where the religious meets the political, the medical, and the social.

During the twenty-first century, the biomedical, public health, and mainstream media establishments falsely identified vaccine hesitancy as an issue of scientific ignorance or incorrect belief. The prevailing assumption has been: if vaccine skeptics knew more facts, they would be less skeptical. They would believe science and trust those who teach it to them. Scholars from various disciplines have demonstrated the longevity of the vaccine hesitancy impulse and offered nuanced analysis for how this

impulse was enacted nationally and in subcultures. Most of these efforts have relied on two assumptions. The first is that vaccine hesitancy or abstention is an aberrant behavior. The second is that vaccine hesitancy occurs when misinformation carries more credibility with an individual or group than does true, scientific information. In other words, vaccine hesitancy is all in one's head.

I argue that vaccine abstention is embodied and religious because hesitant people conceive of their bodies differently, or even contradictorily, from the materialism and standardization of biomedicine. Because of its focus on evidence, the biomedical paradigm cannot account for sacrality, soul, or spiritual pollution. Likewise, the stoic authority conveyed by doctors clad in white coats who have undergone almost a decade of medical training which many find comforting is disconcerting to vaccine-hesitant people.[10] They fear that this training and social authority forces biomedical doctors to ignore the complexities that vaccine-hesitant people have consistently valued most. For the vaccine hesitant, abstaining from vaccination actively preserves moral goodness, spiritual health, or divine oversight of the human body. In other words, abstainers believe vaccination violates the sacredness of their bodies in some way. As an embodied practice, hesitancy and abstention require an attunement to how the body functions, both well and poorly. In addition, when vaccination is mandated, the hesitant object because the state is infringing on sacred ownership over their own bodies (and those of their children).

[10] On biomedical training and social prestige, see Tania M. Jenkins, *Doctors' Orders: The Making of Status Hierarchies in an Elite Profession* (New York: Columbia University Press, 2020).

In the assembled historical cases, skeptics of vaccines from smallpox to DPT to MMR to HPV, the flu to Covid-19, felt deeply that vaccines made physical, biological changes to their bodies that extended beyond their intended effects. In many examples, skeptics also argued that vaccines altered souls or soul matter. The specific changes they identified varied according to contemporary and cultural anxieties about illness, gender, race and racialization, and morality. Smallpox vaccine rejectors in the nineteenth century worried about satanic influences and humans becoming animals. The parents of Dissatisfied Parents Together in the 1980s and the MMR mother warriors of the 1990s came together to find meaning in their children's neurological diseases. People avoided giving their adolescent children the HPV vaccine because they feared it would encourage inappropriate sexual activity, or sexual immorality. Some people who skipped the flu shot felt that vaccination disrupted their God-given natural immunity. Parents who viewed mercury, aluminum, and the unpronounceable ingredients in vaccine adjuvants as toxins worried that they were disrupting their children's sacred bodily functions, instigating autoimmune disorders. In deciding whether to vaccinate their children and themselves, the vaccine-hesitant relied on research and intuition, a deeply felt sense of what was right for the unique individual body at hand. Not vaccinating was religious in orientation. It was also a practice—an act of inaction. It protected the purity of bodies and souls.

Skeptics' decisions not to vaccinate had high-stakes ramifications on daily lives. They limited where their children could go to school, what activities they could participate in, and with whom they could socialize. In other words, the individualist morality of their embodied religious practices often conflicted with the communitarian

morality that informed the basic tenets of twentieth- and twenty-first century public health. Because vaccination biologically connects groups into a "herd" by fostering shared immunity, individual decisions not to vaccinate do increase the risk of disease in a community—especially to those who are most vulnerable to disease. When vaccine-hesitant people weighed the risks of vaccine-preventable disease against the perceived—biological and spiritual—risks of taking the vaccine, they concluded that the risk to the spirit, or their own feelings of guilt, were untenable.

People who opted out of vaccines created moral communities that valued individual responsibility to self and family. By sharing the same books, documentaries, and following influential figures on social media, these moral communities created camaraderie and accumulated social and political power. In the 2000s, disparate networks condensed. At the state level, they argued for vaccine policy reforms. Nationally, they pushed back against the one-size-fits-all principles of biomedicine by adopting language and social capital from the women's health and alternative and holistic health movements. Fighting an uphill battle against expanding vaccine requirements for school attendance, some followed an individualist path by abstaining from vaccines, in many cases, arguing that it was immoral *to* vaccinate.

Hesitant people in every era expressed a commitment to individual and parental sovereignty over the body. This ownership sacralized both the body itself *and* its protector. Hesitant people also consistently understood the "outside" as physically and potentially spiritually pollutive. To protect sovereignty and purity, then, required embodied rituals—repeated practices that kept corruption at bay. These ranged from self-

education and research to holistic health modalities for bodily detoxification to homeschooling children to avoid vaccine mandates for public school. These practices have been consistently overlooked by the biomedical and public health communities. However, when we view them as religious practices, we can make better sense of the meaning that they have represented and conveyed back onto the body.

**Mothers and Children**

When I began this project, I did not know that my research subjects would primarily be women, nor did I know that so many of my topics of inquiry would be mothers and motherhood, children, and childhood. Over the twentieth century, vaccines against routine illnesses, such as pertussis, polio, measles, and mumps, were developed, rolled out, and codified into recommended immunization schedules for babies and children. Children took on the lion's share of responsibility for vaccination, becoming medical citizens as states required vaccinations for school attendance. Mothers were—and remain—children's primary medical decision makers. As a result, their trust in doctors, the medical system, and vaccines was critically important to vaccine success. When cultural expectations and trends for mothering changed, often so did the degrees to which mothers expressed vaccine acceptance or hesitation.

Motherhood is both a biological fact and a culturally constructed role that is shaped, in part, by gender norms. It is unsurprising that vaccine hesitancy increased along with the influence of the burgeoning women's health movement during the 1970s and 1980s. More middle-class women earned college degrees and joined the workforce, and

they questioned the authority of medical providers to know what was best for their own children. They testified publicly about their personal experiences, articulating their conversions from medical follower to medical objector. They channeled their advocacy skills into fighting for vaccine-injured children and creating a vaccine-injury compensation system. They garnered national respect and curried political favor.

However, with change came backlash. Some argued that working mothers were too absent from their children and should refocus their energies on home life. From the late 1980s through the early 2000s, child psychologists and parenting guide authors popularized new forms of mothering, known as "intensive" and "natural," in forums such as *Mothering* magazine. Their approaches had the effect of sacralizing children, emphasizing their uniqueness and the fragility of their developing bodies. Caring for sacred children was sacred work. Mothers needed to be intuitive, all-knowing, and all-giving managers of their children, shepherding them through resource-intensive yet natural childhoods. When something broke, they became mother warriors whose devotion to the details gave them the power to fix it. Mothers were taught to approach their mothering work with a sense of sacred duty and calling—they knew what was best for their children. Using this knowledge, they would keep their children pure and reject an impure world seeping with toxic pollutants.

It is debatable whether this perceived control over children's fates—and the labor it entailed—was empowering or if it was yet another patriarchal cage built around women to keep them close to the private home sphere. The result was that mothers assumed tremendous responsibility for making the "right" decisions. With this responsibility came

the emotional labors of doubt, self-education, guilt. Intensive mothering also demanded physical labors, such as increased breastfeeding, added doctor visits, and preparing chemical-free natural meals. Natural or intensive mothers differed significantly from their own mothers' generation, which had followed the lead of pediatricians during the postwar years of peak trust in biomedicine that had ushered in almost universal excitement about the polio vaccines.

In the late 1990s, Jenny McCarthy entered the spotlight as the face of mercury-autism theory. After mercury-autism theory was debunked, McCarthy and her mother warriors were judged harshly in the court of public opinion for continuing to propagate the theory. They were lambasted as ignorant and labeled pejoratively as anti-vaxxers. Critics implied that the qualities and commitments that I have characterized as sacred motherhood had pushed McCarthy, and mothers like her, too far into the fringe. They represented a feminized vaccine hesitancy movement which valued maternal authority over scientific authority. In the press, vaccine-hesitant women were characterized as hysterical. Their movements asking for changes to vaccine composition and immunization schedules were dismissed as overly focused on feelings rather than facts. Their supposed obsession with their children was downright devotional, ruining the millennial generation. Social critics recapitulated well-worn arguments about "disorderly women" overtaking public and religious spaces or over-feminizing their children, especially their boys.[11]

[11] For examples of how women have stepped outside of prescribed gender roles in American Protestant history, see Gail Bederman, *Manliness and Civilization: Cultural History of Gender and Race in the United*

There is no doubt that McCarthy's outsized public platform transformed mercury-autism theory from an unfortunate medical misdemeanor into a vortex of misinformation that undermined the public's trust in vaccine safety. However, the outrage at McCarthy, and her embodiment of sacred motherhood, was overwhelmingly sexist. As a reaction, vaccine-hesitant mothers turned to social media and online resources, and they entered a world of holistic health which valued purity of body and soul and discouraged pollution in the form of chemical toxins. They created an underground network of people who quietly fought a battle against biomedicine by utilizing religious exemptions for vaccination. Within a decade, there were measles hotspots all over the country. From these episodes in the religious history of vaccine hesitancy, two points are clear. First, prevailing attitudes about mothers, mothering, and children informed degrees of vaccine hesitancy, as mothers who were most valued in the home were more likely to question vaccine safety during the 1990s and 2000s. Second, when vaccine hesitancy during this period was feminized and framed as a women's issue, it was met with derisive sexism in the public square. Sexism is at least one piece of the puzzle as to why the subtle religiosity of vaccine hesitancy has been overlooked. Women, religion, and religious women have a long history of being undervalued in scholarship and writ large.

During the Covid-19 pandemic, vaccine hesitancy shifted to true vaccine opposition, simultaneously undergoing a process of masculinization *and* politicization.

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*States, 1880-1917* (Chicago: University of Chicago Press, 1995); Ann Braude, "Women's History *Is* American Religious History" in *Retelling U.S. Religious History*, ed. Thomas A. Tweed (Berkeley: University of California Press, 1997), Ch. 3; Ann Douglas, *The Feminization of American Culture* (New York: Knopf, 1977); Betty A. DeBerg, *Ungodly Women: Gender and the First Wave of American Fundamentalism* (Macon, GA: Mercer University Press, 2000); Susan Juster, *Disorderly Women: Sexual Politics & Evangelicalism in Revolutionary New England* (Ithaca, NY: Cornell University Press, 1994).

Harkening back to the anti-smallpox vaccine protests of the late-eighteenth and early-nineteenth centuries, protests of local government, then and now, turned into mob violence. Although the decades prior to the Covid pandemic had put women and mothers front and center, those who led the fight against Covid vaccines and mandates were men––Robert F. Kennedy Jr., Del Bigtree, Joseph Mercola, Sean Hannity, Mikki Willis. The new iteration of vaccine opposition was built upon masculinized libertarianism and conspiracy theories, in many ways eschewing its religious roots. It used sensationalist, militaristic messaging about fighting government corruption and crusading for medical freedom and religious liberty to appeal to Trump's base. The movement's front men were angry and confrontational. Their movement was far better funded and exponentially more dangerous than any that had come before.

**Speaking the Language of Vaccine Hesitancy**

Many will encounter this project looking for a guide to reducing vaccine hesitancy and increasing vaccine acceptance. Whether a medical professional thinking about patients or an individual looking for common ground in fractured relationships with family members, the only productive path forward is to learn the language of vaccine hesitancy. During the Covid-19 pandemic, public health officials and doctors undertook numerous initiatives to address Black vaccine hesitancy head-on. They met Black populations with open arms, created safe spaces, enlisted trusted community leaders, and importantly, addressed the fact that there is, and has always been, medical racism in the United States. The first wave of Covid killed a disproportionate number of Black and

Latinx people because of structural racism, which leaves many communities of color in medical deserts with a paucity of healthcare. However, when Covid vaccines arrived, these groups largely rolled up their sleeves. Within a few months, they were the demographic most likely to state that they got vaccinated to protect their communities.[12] The success of this public health outreach should not be read as overly triumphant, nor does it indicate a definitive turn away from race-based vaccine hesitancy. It also does not mean that emphasizing community protection would be effective among other populations—in fact, we know that this is not the case.

Rather, it is an example of how speaking the language of hesitancy can help to reduce hesitancy. What if public health officials and doctors had taken seriously the concerns of bodily and spiritual pollution that made some mothers queasy about vaccinating their children? Or if they had addressed parental concerns about vaccine injuries directly and acknowledged the moral dilemma that they faced? We cannot know if these approaches would have had an impact, but they seem worth trying. Talking about science and medicine using only the language of science and medicine has brought us a long way. But, as the pandemic has demonstrated, that strategy came up tragically short.

I will refrain from making predictions about how these developments will shake out—this is a history book, after all. What we can learn from the past three hundred years is that vaccines have almost always been controversial. Although the cultural contexts and controversies change, vaccines have caused people to question who oversees their

[12] "National Survey: Black Adult Perspectives on COVID-19 and Flu Vaccines," National Foundation for Infectious Diseases, https://www.nfid.org/national-survey-black-adult-perspectives-on-covid-19-and-flu-vaccines, Accessed November 28, 2022.

bodies and those of their children. They have evoked revulsion and fear of bodily and spiritual pollution. They have caused people to wonder about what is natural and human, and what makes a body unhuman. They have elicited moral quandaries concerning the sacrality of mothers and children and about personal risk and communal sacrifice. In other words, vaccines have made people think and act religiously. Vaccines are not the only battleground upon which questions of religious freedom, scientific and medical authority, and public safety are being contested. As an arena where the needs of the public penetrate the private sphere, vaccines provide a poignant example of how far awry things can go when we ignore the religious underpinnings of seemingly secular or anti-scientific behaviors.

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