

**Disentangling *The Vaccination Narrative*:
Vaccination Stories and Health Policy in B.C.**

**by
Leo Ruhl**

B.Sc. (Health Sciences), Simon Fraser University, 2017

Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

in the
Department of Sociology and Anthropology
Faculty of Arts and Social Sciences

© Leo Ruhl 2022

SIMON FRASER UNIVERSITY

Spring 2022

Copyright in this work is held by the author. Please ensure that any reproduction or re-use is done in accordance with the relevant national copyright legislation.

Declaration of Committee

Name: Leo Ruhl

Degree: Master of Arts

Title: *Disentangling The Vaccination Narrative:
Vaccination Stories and Health Policy in B.C.*

Committee: **Chair: Jie Yang**
Professor, Sociology and Anthropology

Dany Lacombe
Supervisor
Professor, Sociology and Anthropology

Stacy Pigg
Committee Member
Professor, Sociology and Anthropology

Bernice Hausman
Examiner
Professor, Humanities
Penn State College of Medicine

Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

- a. human research ethics approval from the Simon Fraser University Office of Research Ethics

or

- b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University

or has conducted the research

- c. as a co-investigator, collaborator, or research assistant in a research project approved in advance.

A copy of the approval letter has been filed with the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

Update Spring 2016

Abstract

In this thesis, I show how a ubiquitous narrative of vaccination has gained traction in contemporary public discourse, affecting public health practices and our identities more broadly. Drawing on ethnographic evidence, I describe how a particular narrative of vaccination is conveyed to me through scientific reports, media, and memes. This narrative contains a specific set of representations of both non-vaccinating people and vaccination itself, and has become intimately enmeshed with many other hopes, ideals, and aspirations. This hegemonic narrative is problematized by examining a local vaccination controversy: the B.C. Influenza Prevention Policy. Different actors in this debate have rhetorically positioned their stances in light of this broader narrative surrounding vaccination. By depicting how myriad factors are entangled within stories about vaccination, I expose how this reality is socially constructed. Being cognizant of this process and the values embedded within it can help us address future vaccination controversies with greater sophistication.

Keywords: Medical Anthropology; Critical Public Health; Narrative; Autoethnography;
Vaccination

Acknowledgements

I respectfully acknowledge that this thesis was conceptualized and developed on the unceded traditional territories of the Musqueam, Squamish and Tseil-Waututh Nations.

Table of Contents

Declaration of Committee.....	ii
Ethics Statement.....	iii
Abstract.....	iv
Acknowledgements.....	v
Table of Contents.....	vi
Introduction.....	1
Vaccination Literature	5
Theoretical and Methodological Framework.....	7
Chapter 1: Rhetoric and the B.C. IPP.	13
An Outline of the Controversy: the BCMJ Point/Counterpoint.....	16
Science, Evidence, and the B.C. IPP	18
Morality and the Law in the B.C. IPP.....	27
Vaccination as Common Sense.....	31
Chapter 2: The “Vaccination Narrative”	33
The Vaccination Narrative: A Story of Modern Triumph	37
The Moral Panic of (non)-Vaccination.....	39
Panic in Mainstream Media	42
The Vaccination Narrative and Internet Memes.....	45
A Vaccination Ideology	53
Chapter 3: The Vaccination Narrative and the B.C. IPP.	57
The Irrational “Anti-Vaxxer” in Health Research and Policy	57
Legitimacy and Expert Authority	61
Ideology Informed Intervention.....	64
Conclusion	71
References.....	79

Introduction

“It is an extraordinary achievement. To go from the discovery of a deadly new virus to the creation of a tested vaccine that can block its effects in less than a year is unprecedented in scientific history. For some, it is simply a medical miracle for it suggests—if nothing else—that the world may be able to shrug off the worst of its Covid-19 woes sooner rather than later. As Stephen Griffin of Leeds University medical school puts it: ‘The amazing progress in advancing a vaccine through to use in humans surely sets a new standard for what can be achieved when sufficient resource and scientific focus is applied to global health.’”

The Vaccine Miracle Published in **The Guardian**, December 6th 2020 (McKie, 2020)

Vaccination has long been touted as a cost-effective “magic bullet” solution to infectious disease. For many people, this medical intervention seems to have achieved a particularly important status: it is frequently featured on lists of humanity’s greatest achievements; it is a sign of a country’s success at modernization and an indicator of global progress; health organizations around the world depict it as the pinnacle of biomedical achievement and of modern progress writ large (Brewer et al., 2017; Centers for Disease Control and Prevention (CDC), 2011; Germani & Biller-Andorno, 2021). Vaccine developers are venerated as celebrities, and for many, vaccination itself is seen as a civic duty which is proudly upheld. Stories about vaccines and vaccination are abundant in my, and perhaps many other people’s, public and private lives. These stories we tell about vaccination offer a powerful monologic narrative which, at times, overwhelms me, and in the wake of the Covid-19 pandemic, has increasingly begun to penetrate my quotidian experience.

And yet, despite the praise vaccination has received from scientists, governments, health professionals, and concerned citizens alike, vaccination programs have been met with sharp resistance around the globe. Those who oppose these programs have been given a label we all know well: the infamous “Anti-Vaxxers”. Although dissent against vaccination campaigns has persisted since the medicine’s invention, this particular label has gained traction since the late 1990s. In the past twenty years of measles outbreaks, and the current Covid-19 pandemic, this group has been demonized by health officials and the general public alike. Non-vaccinated individuals have achieved the status of folk

devil, portrayed as deviants who are anti-science, anti-government, and anti-social. For many of us, even the mention of this label evokes feelings of disgust and moral revulsion. There appears to be a moral panic surrounding vaccination, which may contribute to the rise of coercive vaccination policies around the globe. Pockets of unvaccinated children throughout the U.S. have prompted mandatory vaccination policies for students entering school (Vazquez, 2019). A new law in Australia prevents parents of unvaccinated children from receiving access to financial and welfare benefits (Australian Government, 2019). Deadly measles outbreaks in Samoa have prompted legal action against vaccination dissenters (Kennedy, 2019). Covid-19 vaccination mandates and restrictions are increasingly commonplace (Beaumont, 2021). Resistance to these campaigns is often dismissed—the label of Anti-Vaxxer delegitimizes any concerns an individual might have.

But not all vaccination policies are met with the same kind of opposition. For example, in 2012 the B.C. provincial government implemented the B.C. Influenza Prevention Policy (B.C. IPP). The policy required all visitors and healthcare workers in acute and long term care facilities throughout the province to receive the flu vaccine or to wear a mask during the flu season (B.C. CDC, 2013, 2017). Like other vaccination programs, this policy has been met with resistance, but from a very different kind of person: healthcare workers and infectious disease experts themselves. Unlike the seemingly irrational dissenters of the recent measles outbreaks, the people who oppose this policy are part of the biomedical institutions and they critique the policy using scientific evidence (Offley, 2016; Serres et al., 2017; Thomas et al., 2010; Van Buynder et al., 2015). Health worker unions have been adamantly opposed to the policy and argue that it violates workers' basic rights (BCNU, 2015, 2017). Although the policy is portrayed as scientifically and ethically robust by health agencies, this claim is deeply contested. Similar policies in Ontario have even been legally overturned, specifically due to their lack of concrete supporting evidence (Lupton, 2018). Indeed, just last winter the B.C. IPP was reformed, and now only *suggests* flu vaccination for workers (Bains, 2019). Unlike protests over MMR vaccines for children, the resistance to the B.C. IPP seems much more difficult to dismiss as the act of common folk devils.

This is my narrative of the B.C. IPP. When I first encountered this controversy, I was immediately captivated. How could there be such fierce opposition to a policy which was so clearly right? As someone who was trained in health sciences, and who worked in the B.C. Center for Disease Control (B.C. CDC), I found it incredible that medical professionals and researchers could doubt the legitimacy of a vaccination campaign. However, as I explored the topic further, it became clear to me just how complex this controversy is. It is the product of multiple social actors in and out of B.C., each with their own interests and agendas, of which “health” is just one. Each actor attempts to make claims about the nature of reality, constructing estimations of reality which aligns with their desired goals and outcomes through clever use of rhetoric, appeals to shared moral norms, and the mobilization of scientific evidence. The more I researched the positions of these different social actors, the more I became aware of the ambiguity surrounding scientific evidence itself. Although each actor makes claims about the reality of the Influenza virus, such claims rely on interpretations of scientific evidence.

More than this however, arguments surrounding vaccination inevitably draw on or allude to a more general notion of vaccination. Here, I draw on Heller’s stimulating work on the larger discursive structure he calls the Vaccination Narrative¹ (J. Heller, 2008). This narrative is what I refer to in my opening paragraph and it exemplifies how the idea of vaccination has become embedded within a complex web of social meaning. When public health officials, scientists, governments, or even the lay public refer to vaccination, they implicitly appeal to idealized notions of development, modernity, and scientific fact (J. Heller, 2008, p. 7). Like any other narrative, vaccination discourse generates character tropes, attributing a particular set of traits to groups of people with and imbuing them with intentions and agendas. It situates these characters within particular settings and creates a coherent set of predictable events—plots—for characters to follow (J. Heller, 2008, p. 154).

This project seeks to elaborate on Heller’s articulation of this vaccination discourse which I, and many others, are intimately involved with. Although Heller’s

¹ In his book, Heller calls this the Vaccine Narrative, but points out that the word vaccine – the object – and vaccination – the *practice* of using that object – are so intimately related that they can be used interchangeably (J. Heller, 2008, p. 157). I prefer to use this action-oriented use of the term because it explicitly connects the narrative surrounding vaccines with the active practice of vaccination.

work is foundational to this thesis, he writes about the vaccination narrative in the 20th century. His research analyzes how discussions of polio, pertussis, rubella, and HIV vaccines have interacted with the vaccination narrative from the 1950s to 1980s, but does not touch on the MMR controversies of the late 90s-2000s or the more recent controversies surrounding Covid-19 vaccines. While many components of this narrative remain unchanged in the 14 years since Heller's publication, there have been important developments to this story with media reporting of measles and Covid-19, which deeply inform my encounters with the vaccination narrative. Heller's work is also firmly situated in the American context. He draws on examples specific to the American experience, such as New York's experimentation with mass Diphtheria vaccination (see for example J. Heller, 2008, p. 34). It is fascinating reading this work as a Canadian however, and seeing how much of the narrative has been transplanted in Canada, despite the many historic and cultural differences between our two countries. In this thesis, I offer an updated account of this narrative, from the experience of a non-American who was born in 1994. Lastly, Heller argues that the Vaccination Narrative is created and sustained from within the health professions (J. Heller, 2008, p. 28). But while health organizations certainly are one way in which this narrative is established and communicated, I argue that they are not the only group who constructs this narrative. By enriching Heller's core argument with several other narrative theorists, this research demonstrate how the Vaccination Narrative is supported (and subverted) by far more than health professionals.

Through the example of the B.C. IPP, I wish to understand how the different actors in this local debate have rhetorically positioned their stances in light of this broader discourse surrounding vaccination. In order to understand this controversy fully, it is necessary to look past the truth claims made by actors in the debate, and to scrutinize how this debate is framed. By showing how myriad other factors have become entangled within our stories about vaccination, I wish to show how the reality of vaccination is socially constructed (Hacking, 1999, p. 19), and how being cognizant of this can help us address future controversies with greater sophistication.

Vaccination Literature

I write this thesis in light of a large body of literature—done in both the hard and soft sciences—about vaccination. Virtually all health related literature on vaccination programs is based on the core belief that vaccination is a safe and effective method of controlling a disease. Such research focusses on how effective vaccination is (Lewnard & Cobey, 2018), why people might resist such an intervention (Chapman & Coups, 2006; Hollmeyer et al., 2009; Kaboli et al., 2010; Prematunge et al., 2012), and, most importantly, how to increase vaccination uptake in a population (Betsch et al., 2015; Lugo, 2007). Anthropological inquiry into vaccination arises in two broad categories. Some authors look at vaccination in the context of global health, examining the relationships between global projects and local realities. This literature is often critical of the goals and process of global health, and may only briefly touch on the issues surrounding vaccination itself (Feldman-Savelsberg et al., 2000; Greenough, 1995; Renne, 2014). The second clade of research scrutinizes non-vaccinating individuals or groups. Like medical scholars, these authors start with the premise that vaccination is an inherently necessary procedure and their research is done, whether implicitly or explicitly, to improve vaccination uptake in a given group (Enria et al., 2016; McKnight & Holt, 2014; Sobo, 2015; Stadler & Saethre, 2010). The logic, it seems, is that by understanding the “culture” of a vaccine hesitant group, public health officials can create vaccination interventions that are more culturally sensitive (and therefore more appealing²), thereby increasing vaccination rates.

Many of these pieces are normatively slanted in favour of vaccination. Authors such as Reich use heavily moralized language to describe vaccine resistant groups, describing them as “free-riders” who coast on others immunity (2014, p. 697). As Hausman has argued (2019, p. 80), this stance is at best unreflexive and uncritical of the moral norms surrounding vaccination, and at worst, perpetuates common sense stereotypes of non-vaccinated people. While Reich offers an excellent critical analysis of the idea of parental responsibility, her work fails to analyze the setting in which such

² For example, Sobo describes how public health messaging could re-articulate vaccination messaging to reference one’s “natural immunity” or even invent small batch, non-Big Pharma vaccines, which align with Waldorfian values (Sobo, 2015).

moral criticism is levied against non-vaccinating groups or individuals, nor does it seriously attend to the variety of reasons why a group might be resistant to vaccination. In contrast, this project aims to analyze vaccination debates through a non-judgmental lens. I contend that such a biased stance denies us the possibility of analyzing a case such as the B.C. influenza prevention policy.

Although laudable, none of these works entertain the possibility that vaccination might not be the most appropriate health intervention in these contexts. Given the scientific evidence mobilized in the B.C. IPP controversy which refutes the effectiveness of flu vaccination campaigns, this case forces me to at least entertain the possibility that vaccination might not be an effective solution in this particular scenario. In many ways, this case shows how the calculus used to define the “effectiveness” of a solution is value laden in and of itself. Instead of seeing the opposition to vaccination as irrational, uneducated, or ill-informed, these social actors must instead be treated as health experts. Indeed, the legitimacy of these interlocutors is also far easier to accept precisely because they are recognized as prominent health experts. This reversal also prompts a critical examination of the moralized discourse surrounding vaccination, which portrays non-vaccinated people as ignorant or irresponsible. Again, the B.C. IPP controversy provides an opportunity for us to reconceptualize how vaccination resistance is framed.

Moreover, the stances of these authors seem to exhibit a Pro-Vaccination discourse, constructed in opposition to a supposedly homogenous and identifiable Anti-Vaccination group. Although such sentiments and ideologies supporting vaccination are pervasive in my life, there is a dearth in the literature describing these stances and why they might be so lodged in the public sphere. Following calls by others (Vanderslott, 2019), this research seeks to describe and understand Pro-Vaccination groups as well as their opposition. Doing so is both an exercise in my own reflexivity—uncovering why I am continually surprised by the resistance to the B.C. IPP—but can also shed light on the reasons why vaccination has become one of the de-facto methods of disease management. In doing so, I join a long trajectory of anthropologists who “study up” (Gusterson, 1997; Nader, 1972) and critically examine the culture of experts and officials involved in high level (health) decision making.

Theoretical and Methodological Framework

Unlike other social theorists, who study vaccination controversies as discourse (Brunson & Sobo, 2017; Quigley et al., 2016), I use the concept of narrative to describe a very specific kind of discourse. I base my analysis on Foucault's idea of discourse as a collection of thoughts, ideas, attitudes, and practices that are organized to systematically create subjects and lived realities (Lessa, 2006). While Heller sees narratives as being distinct from fact, arguing that "stories do their work, not evidence or argument" (J. Heller, 2008, p. 9), the case I present shows that evidence, argument, and story cannot be disentangled so easily: each of these is used to co-construct the other. Stories are constructed by evidence, and are solidified through argument, and the same evidence and argument are likewise buttressed by narratives. This fits well with Cheryl Mattingly's notion of narrative. Mattingly sees stories as powerful structures which shape both experience and action (1998, p. 3). They are both an aesthetic and moral form which underlies action and informs experience. Stories are strategies for organizing personal experiences and translating them into culturally intelligible scripts which provide models for action (1998, p. 13). Cultural narratives provide ways to over-ride personal experience, and as Heller notes, they can "elide and overwhelm contradictions, and simplif[y] our understanding of reality with scripted meanings and metaphors so that we can more easily make sense of the whole world" (J. Heller, 2008, p. 8). Stories provide ways for individuals to make sense of unfamiliar experiences by fitting their personal experiences into a larger cultural narrative or plot with a beginning, middle, and end (Mattingly, 1998, pp. 8, 14). Individuals can position themselves within a narrative and this positioning bestows them with new ways of being and acting in the world. But narratives are also co-constructions between a story-teller and audience (1998, p. 11). They refer not only to past or future events, but are contemporary products of a relationship between people or institutions. In this intersubjective space, the voices and experience of the audience and story-teller(s) can be contested, neglected, or reorganized.

Analyzing vaccination controversies as narratives is useful for several reasons. First, narratives describe a kind of directionality more readily than discourse. Narratives have plots: sequences of events that are organized and ordered (J. Heller, 2008, p. 154). Characters are expected to do certain things, and the world moves along with them,

progressing and changing into something different. As I discuss later in my thesis, this is a prominent feature of vaccination discourse—it is inextricably linked to ideas of linear progress and modernity. Second, narrative offers an intuitive way to understand characters in a discourse. This aspect is especially important in the Vaccination Narrative, in which a number of character tropes are developed and imbued with sets of symbolic traits, and are assumed to perform a set of actions. As a subset of discourse, narratives also have interpellating power, and as I argue throughout my thesis, can create subjects, and compel them to fit the character molds perpetuated by a story. Lastly, by viewing claims about the nature of reality as a narratives, it is easier to see how they are mobilized and employed by social actors to perform certain functions. As numerous authors have described, people tell stories to serve a variety of different purposes. They can be used to organize one’s life (or someone else’s life) and emphasize certain themes in a series of events to demonstrate a “truth” about a certain matter (Jourdan, 1997). Stories about the same series of events can be told in different ways, to different audiences, and by different tellers, each with it’s own goal or meaning (Cruikshank, 1998). In highly complex scenarios, where understanding of the problem is limited, stories can be employed to construct a certain “official” reality (Farmer, 1994; Mattingly, 1998).

In chapter one of this thesis, I draw on Gusfield’s (1981) work on drunk driving to describe how the B.C. IPP has been framed and rhetorically positioned. Gusfield shows how social actors mobilized both scientific and moral evidence to rhetorically create the “problem” of drunk driving. His work demonstrates how scientific documents are a form of rhetoric which construct a factual and ordered version of reality for a particular audience. Applying a literary analysis to scientific papers, Gusfield shows how scientists use persuasive techniques to argue their points—a far cry from the objective presentation of external facts that they claim to be. He describes how the body of scientific work surrounding drunk driving began as uncertain, inconsistent, and inaccurate, but was slowly fashioned in the public arena into a system of certainty. Critiques of the dominant lines of evidence were acknowledged, but at some point became silently ignored and forgotten, while other facts became publicized and repeated by authorities, the media, and professional practitioners. From this ephemeral and uncertain evidence base, an official narrative was constructed, and along with it a concrete reality which provided a certain

ground for authoritative action by experts and government officials. In great detail, Gusfield describes how the drunk driver has been constructed in the law as an antisocial character, who lacks responsibility as a capable agentic actor, and who is categorized as both a moral and factual deviant (1981, p. 153). Punishing this character, he argues, serves as a way to preserve Durkheimian social order as well as reinforce existing ideological structures which frown upon substance use. A key takeaway from Gusfield's analysis is that in exposing the constructed character of the "killer drunk driver", he exposes how this character trope is a constructed fiction with both moral and cognitive consequences.

This work on rhetoric is crucial to understand how the different social actors in the B.C. IPP debate have levied science and moral rhetoric. In this public controversy, several organizations are attempting to construct coherent realities of the influenza virus and its transmission. Scientific evidence is mobilized in the form of clinical and epidemiological studies, as well as moral evidence such as professional conduct guidelines, workers' liberty rights, and more general public norms. As in the case of drunk driving, there is a vast amount of scientific uncertainty surrounding influenza and its control, however, through the practices of these different actors, some of these facts are depicted as truth while others are dismissed as fiction. I apply Gusfield's analytic techniques to describe several different positions of the B.C. IPP and analyze how they serve to generate different narratives. Drawing on a narrative analysis of policy documents, media reports, and scientific literature, I elucidate important characters created in the statements of health and organization officials: what elements of the debate are emphasized, and which are left unmentioned, which plots are described—either implicitly or explicitly in texts or messages—and how they can work to organize actions. Although several agents aim to fix a particular narrative of the influenza-healthcare worker relationship, the situation in B.C. is not fully cemented—after all, the policy was overturned only a few years ago.

But the truth claims about vaccination in the B.C. IPP controversy are only one part of a broader narrative on vaccination. Vaccination is heavily discussed by health professionals, governments, as well as the general public, in state documents, institutional policies, newspaper headlines, and online forums. Like Heller, I argue that this discourse

is a prominent feature of our public and private lives. In chapter two, I describe my own experience of the more monologic Vaccination Narrative—one that seems far more fixed in the public consciousness than the debate around the B.C. IPP. Using auto-ethnography, I systematically describe and analyze my own personal experience in order to shed light on shared aspects of cultural experience (Ellis et al., 2010). This auto-ethnographic endeavour includes an analysis of news articles, scientific papers, as well as forum comments and memes which I have identified in my own personal life. It uses my experience of this vaccination discourse, as a twenty-something, educated, left-leaning, almost-middle-class Canadian as a representation of what other similar people might be experiencing.

Using Mattingly's work on narratives, I show how this broader vaccination narrative has a plot line which organizes experience and action (1998). Mattingly describes how global health and development officials identified the problems they found in development projects through narratives, not by understanding the technical problems of the project itself. These acts of storytelling emphasized why actors in the field were not taking proper responsibility to manage technical problems; they placed primacy over the motivations of these actors rather than on the conditions in which they worked (1998, p. 4). The narratives of different officials were interwoven and combined into a collective story which was rehearsed and used as rhetoric in political discussions. Mattingly argues that these story-like narratives were particularly used when describing the opaque reasons why problems developed in the first place and why they remained unsolved. These stories, and the reality they construct, are thus rhetorical tools to persuade people into seeing the world in a certain way: they frame problems as well as the solutions implicitly held within this framing.

Drawing on labelling theorists (Becker, 1973; S. Cohen, 2002; Hall et al., 1978), I show how several prominent character archetypes have been created by this vaccination discourse. These scholars describe how a group can be rhetorically created and imbued with character traits. Drawing on Cohen's idea of a moral panic (2002), I show how these characters are positioned along a plot of anxiety and fear. Throughout this chapter, I show how anti-vaccination beliefs have become intimately linked with a host of other traits which are frowned upon by mainstream society. Mattingly's claim that stories can

organize action, provide meaning to experience, position actors within the narrative structure of a plot, and further a particular agenda fits well with Cohen's idea of moral panic. Like the narratives of the global health officials, moral panics are stories. They create a collection of dramatic characters, imbue them with special traits, and provide a particular plotline for these characters to follow. In the uncertainty following a crisis, when the reasons and motivations behind individual vaccination practices are largely unknown, we can see that the Vaccination Narrative is useful to construct a stable construction of reality (Gusfield, 1981, pp. 50–53). I argue that the depictions portrayed by this narrative fit into a particular ideology³, and I conclude the chapter by showing how this ideology is not only impressed onto individuals but is also actively constructed by them in everyday interactions on different media platforms.

In chapter three, I examine the relationship between the B.C. IPP and the Vaccination Narrative in more detail. I identify several underlying themes the Vaccination Narrative carries with it that can explain why this particular story might be supported over others. I address how actors in the B.C. IPP debate manage and negotiate different narratives: how do they adjust their narratives to subvert or support the Vaccination Narrative? How do they appeal to this broader narrative to further their own agenda? But more than examining how narratives are developed and negotiated, this chapter aims to describe how the Vaccination Narrative is reflected in the B.C. IPP controversy. I describe how my own interpretation of the B.C. IPP controversy has been influenced by this narrative, showing how deeply penetrating the more generalized Vaccination Narrative is. I show how the character archetypes spawned by this narrative have powerful interrelative properties which can create subjects, orienting them into certain positions and causing them to act in certain ways. As Hacking has previously noted, “all intentional acts are acts under a description... If new modes of description

³ Although the term has been heavily critiqued within academia, the notion of ideology remains useful for describing the politico-cultural system of beliefs presented in the vaccination narrative. I draw on Sonja Luehrmann's anthropological approach to ideology, which combines discussions from political theory seeking to define ideology as more than merely “false consciousness”, as well as discussions in anthropology which examine the “oscillation between explicit doctrine and everyday assumptions” (2011, p. 365). Luehrmann argues that while relationships may exist between ideas, interests, and foundations of power, one must not assume that ideology is always a deliberate distortion or misrepresentation of the truth. Instead, Luehrmann suggests that ideologies should be thought of as a set of *social representations* which describes social categories, everyday life, and the world around us.

come into being, new possibilities for action come into being in consequence.” (Hacking, 1986, p. 166). With this in mind, I question what new possibilities for action and thought are granted by the character tropes created in these different vaccination narratives, and where I fall in this contested discursive environment.

Chapter 1: Rhetoric and the B.C. IPP.

The B.C. IPP was first implemented by the Provincial Health Officer (PHO), Dr. Perry Kendall, and the B.C. Center for Disease Control (BC CDC) in 2012. The policy requires all healthcare workers working in patient-care areas to either receive the seasonal influenza vaccine each flu season, or to don a mask for the duration of their shift (Di Castri et al., 2020). Seen as an impressive feat of policy and organizational efforts by some (Van Buynder et al., 2015), the mandate was vehemently opposed by workers' unions throughout the province. In 2013, the Health Sciences Association (HSA), Hospital Employees' Union (HEU), and the B.C. Nurses' Union (BCNU) filed a labour grievance against the mandatory nature of the policy. Despite a history of similar policies being overturned by workers' unions elsewhere in Canada, the B.C. arbitrator ruled in favour of the B.C. IPP. The BCNU filed an additional industry wide application dispute again in 2015 after health authorities refused to revoke the policy. After several more years of resistance from health workers' unions, the PHO (now led by Dr. Bonnie Henry) agreed to amend the policy in 2019: instead of "requiring" all workers to receive the vaccine or wear a mask, workers are now "expected" to follow this protocol—effectively removing the mandatory component of the program (Bains, 2019).

The B.C. IPP is a particularly interesting policy because mandatory vaccination policies are not often the norm in Canada. Because health is under provincial jurisdiction, there are generally no federal policies regarding vaccination. Unlike many U.S. States (Walkinshaw, 2011b), only three provinces require children to get vaccinated before entering school⁴, and each allows for medical, religious, or conscientious exemptions (Walkinshaw, 2011a). Although many private care homes have their own mandatory vaccination policies, such programs are rare in the public sector (Walkinshaw, 2011a). Many of these policies are remnants of measles outbreaks throughout the 1970s, when the new measles vaccine (and later the MMR vaccine) were developed and deployed

⁴ Ontario and New Brunswick require diphtheria, tetanus, polio, measles, mumps, and rubella immunizations (both the MMR and DTP vaccines), and Manitoba requires only measles vaccination (Walkinshaw, 2011a).

(Trepanier, 2021)⁵. Vaccination rates for most vaccine-preventable diseases are high throughout Canada and comparable to other OECD countries (Statistics Canada, 2021). Influenza vaccination rates however, tend to lag behind other vaccine preventable illnesses (PHAC, 2021). However, since the early 2000s, concerns about pandemic influenza have been hotly discussed in health circles (see for example Ruderman et al., 2006; Thompson et al., 2006). The 2009 H1N1 pandemic confirmed the need for these concerns, and brought forth a surge of academic interest—as well as public health attention—towards influenza (for example Atlani-Duault & Kendall, 2009; Kaboli et al., 2010; Prematunge et al., 2012). Although these kinds of pandemic influenzas are often distinguished from *seasonal* influenza (CDC, 2019a), the looming potential of pandemic influenza remains a specter in contemporary influenza discussions. Since the H1N1 pandemic, several mandatory vaccination programs were introduced in other provinces throughout Canada. Saskatchewan implemented a mandatory vaccinate or mask policy in the 2014-2015 flu season, but it was struck down in a 2015 arbitration (Graham, 2015). While Ontario’s provincial government has never endorsed mandatory policies, a group of hospitals, the Toronto Academic Health Science Network (TAHSN), implemented vaccinate or mask policies in 2014 (Jones, 2014). Although these were also struck down by arbitration in 2015, the TAHSN refused to accept this ruling, arguing that their policy rested on a different rationale. However, these policies were struck down a second time in 2018 (Dyer, 2018). The B.C. IPP is unique among Canadian policies because it has survived several rounds of arbitration, despite using the same rationale to justify the policy as other jurisdictions⁶. This chapter draws on data gained through a narrative analysis of policy documents from several vocal organizations involved in the B.C. IPP

⁵ Interestingly, B.C. has historically opted for a variety of promotional campaigns in response to measles outbreaks instead of the mandatory measures used in other provinces (Trepanier, 2021). The province has also entertained an interesting history of vaccination resistance. For example, one historian points to a well-known member of Ontario’s opposition to mandatory measles vaccination policies for school children, who moved to B.C.’s Slokan valley in the 1980s, arguing “She fit right into the strong environmental movement, a strong back-to-the-land movement and, to a certain extent, the feminist opposition to medical expertise and knowledge” (Hennig, 2019). Recent protests against Covid-19 vaccine mandates (for example Michaels & Potenteau, 2021; Sajan, 2021) speak to the lasting impact of this legacy in provincial vaccination politics. This history of resistance might be one reason why B.C. judges have been adamant in their rulings supporting the B.C. IPP.

⁶ Outside of Canada, vaccinate-or-mask policies are more common. For example, some studies estimate that 60% of U.S. hospitals have a vaccinate-or-mask policy for influenza (M. T. Greene et al., 2018).

debate, news articles from prominent Canadian media outlets such as *CBC* and *The Globe and Mail*, as well as the pieces of evidence cited in these sources. These documents illustrate how official narratives form and are promoted, while the diverse responses to these requirements show how alternative narratives are created which dispute, challenge, or subvert this official script. Social actors use their various kinds of capital (Bourdieu, 1993, p. 99) to make assertions about the “facts” of the flu: what evidence is valid or invalid; which risks are harmful or improbable; which actors are knowledgeable or ignorant. In this way, authoritative and scientific understanding of the flu is established, consolidated, and transmitted. Although the vast majority of these rhetorical actions are discursive, they have very objective effects. What’s at stake in this debate is not just a narrative, but the credibility of mandatory vaccination policies. As I hope to demonstrate, the stakes of this game extend to norms surrounding disease, health workers’ obligations, and what the appropriate social response to non-vaccinating individuals should be.

In the following sections, I present the narratives created by different players in the B.C. CDC and other provincial health authorities⁷, healthcare worker unions most notably the B.C. Nurses’ Union, other medical associations such as the Canadian Medical Association (CMA) and the Canadian Medical Practitioners’ Association (CMPA), as well as independent groups of scientists and health care providers. I describe the overarching plots they articulate, as well as how particular characters are generated. In the spirit of Gusfield (1981), Hall et al. (1978), and Cohen (2002), I show what evidence each group draws upon to support their narrative, and how they legitimate that evidence to assert that theirs is the only truly valid perspective. I conclude this chapter with a scrutiny of the ethics literature surrounding influenza prevention which, I argue, provides a glimpse into how this particular debate is affected by a larger set of assumptions surrounding vaccination.

⁷ The B.C. CDC is the public health section of the Provincial Health Services Authority (PHSA), an arms-length organization funded by the provincial government to provide health services. Unlike other health authorities that are organized around specific geographic regions, the PHSA provides specific services (such as funding for cancer, organ transplant and HIV organizations) across all of B.C. This arrangement is unique to B.C. and provides a centralized center of public health authority for the entire province. Although I refer to the B.C. CDC as a single organization, it is intimately linked with the PHSA and the provincial government more broadly.

An Outline of the Controversy: the BCMJ Point/Counterpoint.

Perhaps the best way to outline the debate is through an examination of a point/counter-point series published in the *B.C. Medical Journal* (BCMJ)—a journal run by the professional association of BC doctors. This series pitted the opinions of registered nurse, Will Offley⁸, against Bonnie Henry⁹ (then provincial executive medical director of the BC CDC) and PHO Perry Kendall. The pieces are peer-reviewed and draw on both scientific and moral claims to support their arguments. The rhetoric mobilized by each actor represents prominent narrative themes that are featured elsewhere in the debate.

In his critique of the B.C. IPP, Offley frames the B.C. IPP as an arbitrary policy which rests on unfounded evidence, and unjustly violates the rights of healthcare workers. Offley argues that “best practice” policies require three core components and that the B.C. IPP fails on each of these counts: evidence supporting risk, consistent application of policy, and an assessment of whether or not the policy achieved its goals (2016). It fails the first component because the policy assumes that hospital acquired influenza is a significant threat to patients. Offley cites that there are no statistics kept on nosocomial (hospital acquired) influenza, and so there is no way to distinguish between influenza that was acquired in the hospital or in the community. Moreover, he draws on several scientific statements saying that there is little evidence that masks prevent influenza transmission in the first place. It fails the second component because it is not consistently applied: only workers and staff are forced to vaccinate or mask, but not incoming visitors¹⁰. If health authorities were serious about reducing illness and death, Offley argues, why not enforce this policy for *everyone* in hospitals? Lastly, he contends that this policy is morally incoherent, placing the rights of patients above the rights of

⁸ Offley, a well-known health and political activist in B.C., has had a tumultuous relationship with the BCNU, at one point running for the presidency of the organization and becoming involved in a defamation lawsuit with the then-president, Gayle Duteil (Smith, 2017).

⁹ Bonnie Henry has also become a local celebrity, with regular press and media appearances during her management of the Covid-19 pandemic. Some newspapers even claimed that the provincial government’s election victory in 2019 was aided by their proximity to Henry, and her internationally applauded response to first waves of Covid-19 (McElroy, 2020).

¹⁰ He also makes a comment about the inconsistent monitoring of more “prestigious” healthcare workers, such as physicians, medical students, and residents who he has anecdotally not seen wearing masks during the flu season.

staff and workers without sufficient scientific justification. Given the evidence, Offley argues that there is no scientific reason to favour vaccination over the less invasive but well-recognized intervention of handwashing. By forcing those who refuse vaccination to wear masks, which are perceived as uncomfortable and demeaning, he contends that the policy is punitive – its only purpose to mark the unvaccinated¹¹ (2016).

Henry and Kendall’s piece presents their own narrative, depicting the B.C. IPP as “an evidence-supported, systematically implemented, and ethically defensible program that has successfully improved influenza vaccine coverage among health care workers in the province and, as a result, improved protection for our vulnerable patients” (2016, p. 555). The authors systematically refute many of Offley’s key points. For example, they provide some evidence to show how masking can reduce influenza transmission, which although not as strong as the evidence supporting immunization, they argue is at least as robust as the evidence supporting hand washing. When touching on the issue of the erratic effectiveness of the flu vaccine, they argue that despite these challenges, flu vaccinations are still almost universally recommended by health organizations. To counter Offley’s comparison of mask-wearing as a punishment pursuant to non-vaccination, Henry and Kendall argue that vaccination is offered as a way to *prevent* workers from having to wear an uncomfortable mask for prolonged periods of time, re-articulating the policy as an incentive “carrot” measure rather than a punitive “stick”. Although they admit that the policy is not applied consistently, they maintain that rule breakers represent only a small proportion of professionals. Lastly, they conclude their piece with an ethical appeal to a central axiom of the Hippocratic oath: “primum non nocere”—First, do no harm (2016).

Even from this preliminary examination of these positions, we see that there is a disagreement in both the scientific and moral underpinnings of the policy. Offley presents evidence which questions key premises of the policy, while Henry and Kendall provide evidence which supports it and which refutes several of Offley’s points. Each author attaches a moral impetus to their scientific construction of the “facts” of influenza

¹¹ Such critiques are also reflected in the arbitration processes in Ontario. Opponents of the policies have highlighted how some hospitals dropped the mask requirement in a year where the flu vaccine was not effective—and no one was expected to receive the vaccine (Dyer, 2018). If masks were not required when the vaccine was ineffective, critics argue, why would they be required in a normal season?

vaccination, motivating a particular kind of action based on their construal of reality. Offley's narrative constructs an arbitrary policy, which wantonly damages the rights of health workers based on hunches and guesses rather than fact. Henry and Kendall frame the policy as scientifically robust, following the recommendations of prominent epidemiological and biotechnological organizations. They diminish any resistance to the policy as a vocal minority, and paint the majority of B.C. workers as reasonable and moral agents who will act upon their professional obligations to their patients.

Science, Evidence, and the B.C. IPP

To explain the contours of the B.C. flu debate, it seems only fair to begin by describing the justifications for why the policy was introduced in the first place. Interestingly enough these reasons are laid out most clearly in an evaluation of the program, published by the B.C. CDC in 2017, five years after the policy was first implemented. The justifications are listed clearly in the introductory section:

- 1) To increase influenza immunization rates in healthcare workers employed in BC health authorities.
- 2) To prevent transmission of influenza from healthcare workers to patients/residents and to other healthcare workers in healthcare facilities in B.C.
- 3) To reduce influenza-related absenteeism in healthcare workers employed by health authorities in B.C. (B.C. CDC, 2017, p. 6)

These goals themselves present a sort of sequential narrative. First, the government aims to increase flu vaccination in healthcare workers. This increase in vaccination helps prevent transmission of influenza in hospitals and now the vaccinated population can work through the flu season without taking days off. In order for this causal-pathway-qua-narrative to be accepted as reality however, it must be grounded in evidence—in the case of the B.C. CDC, scientific fact.

Amid the initial protest against the policy in 2012, the B.C. CDC released an extensive document which aimed to defend the B.C. IPP by drawing on a wide variety of scientific literature (B.C. CDC, 2013). The report begins with a brief background section, outlining the justification for the program and presenting several general facts about the flu. The authors start by presenting influenza as a disease worth worrying about: they draw on national death statistics, data regarding its transmissibility, how it is especially

dangerous to vulnerable groups such as the elderly or immune-suppressed, and how influenza causes the most preventable deaths of any vaccine-preventable diseases. Influenza is not a danger in and of itself though, “healthcare workers have been implicated as the source of influenza infection in healthcare settings” (2013, p. 2). The authors declare that vaccinating workers against influenza is the best way to prevent the spread of this deadly virus and to manage these key vectors of disease. This intervention, the “cornerstone of efforts to control influenza transmission” (2017, p. 2), reduces the risk of workers getting sick and of transmitting that illness to their patients. Although some other forms of prevention are acknowledged, such as mask wearing, hand hygiene, restrictions on visits, or anti-viral medication, the authors make it clear that vaccination is the most effective strategy. These claims are all left uncited—perhaps it is expected to be elaborated in more detail in the body of the report, or perhaps it is deemed such common knowledge that it need not warrant further explanation. However, the goal of this section is clear: influenza is constructed as a disease worth worrying about, healthcare workers are implicated as key facilitators in the spread of this disease, and urgent action is necessary if this issue is to be remedied.

The body of the report involves the authors identifying various points of contention regarding the narrative that they have constructed, and supporting their view with a rigorous scrutiny of scientific evidence. I highlight several specific cases in which the truth-claims about influenza articulated by the B.C. CDC are still subject to some scientific ambiguity. Far from being the objective narrative of events which the authors claim, there is a considerable amount of interpretation involved in the reading of scientific evidence. For example, in supporting their claim that influenza is a sufficiently widespread and serious disease that it requires interventions, the authors delve into influenza morbidity and mortality statistics. They draw on data from a 1998 influenza textbook to claim that between 3-30% of unvaccinated adults develop an influenza infection annually (B.C. CDC, 2013, p. 3). But statistics on influenza are problematic for several reasons, many of which revolve around the fact that influenza is an extremely difficult disease to diagnose. A typical influenza infection involves generic symptoms, such as a runny nose, a cough, fever, and general body pains, but these are symptoms of a multitude of other infections (a fact I am sure we have all been particularly aware of in

the recent pandemic). The most accurate way to diagnose someone with the flu is through lab based testing, but this is often either too resource intensive to be operationalized, or the flu is just not considered an important enough disease to follow up on¹² (B.C. CDC, 2013, p. 9). To manage this space in diagnosis, two different definitions of flu-related illness have been constructed: “the flu” which is an illness caused by an influenza infection, and “influenza-like illness” (ILI), defined as “the sudden onset (over 2 days or less) of flu symptoms with fever and cough and with one or more of the following: sore throat, joint pain, muscle aches, or fatigue that is likely due to the flu, but not confirmed by a lab test” (Canada, 2014). Given the much broader illness definition of ILI, it is expected that this encompasses many more types of infections than the flu. Indeed, the authors cite evidence that influenza is responsible for only 20-35% of ILI in unvaccinated adults during the influenza season.

The uncertainty in the evidence comes up again when the authors discuss the mortality of influenza. Since influenza is infrequently tested for, and it is complications that are often the cause of death rather than the disease itself, mortality data relies on estimates and epidemiological models. The authors show the estimated mortality rate and deaths derived from five different models, and then explain why some should be taken more seriously than others. For example, they argue that a model based only off of lab-confirmed influenza cases which predicted 370 deaths per year was dismissed because not all influenza-related deaths would be diagnosed. Instead, the authors cite a different study by the National Advisory Committee on Immunization (NACI) (PHAC, 2011) as well as other uncited literature “from the US and Europe”, to state that between 2000-4000 Canadian die from influenza annually (B.C. CDC, 2013, p. 5).

Perhaps because of this uncertainty in the literature, the authors never provide statistics on the incidence of flu. At many points they even acknowledge how difficult the impact of influenza is to measure. But instead of focusing on this area of uncertainty, they draw on data from several case studies of nosocomial (hospital) transmission of influenza to show estimates of prevalence and case fatalities—“as if” (Gusfield, 1981, p. 64) they represent hospitals throughout the province (B.C. CDC, 2013, p. 4). They also

¹² A statement which seems to contradict their earlier argument that influenza is a significant threat which warrants our concern and action.

highlight more certain statistics about vaccination, for example citing a systematic review article on how vaccination can prevent up to 60% of asymptomatic infections, and using their own data to show how vaccination rates of healthcare workers have lagged behind the desired levels for many years, despite having programs aimed to voluntarily increase vaccination uptake (2013, pp. 3–4).

Beyond the statistics of influenza, the authors spent the vast majority of this piece refuting the findings of an infamous Cochrane review¹³ (Thomas et al., 2010) which found that vaccinating healthcare workers did not affect patient health outcomes in long-term care facilities. To refute the findings of the Cochrane report, the B.C. CDC authors suggest the findings of four other randomized control trials (RCTs) are more convincing, and systematically go through the critiques against these trials lodged by the lead author of the Cochrane review. For example, they question why the Cochrane authors chose to measure mortality of respiratory illness instead of all-cause mortality, arguing instead that all-cause mortality is *always* the most important outcome in clinical trials: “what is most clinically relevant”, they argue, “is whether patients are alive at the end of a study” (B.C. CDC, 2013, p. 7). They also lodge various arguments about the statistical meaningfulness and scientific validity of the four studies they chose compared to the ones included in the Cochrane review (2013, p. 10). Again, the problem arises that the most accurate metrics to judge flu incidence and death—lab-confirmed cases—are not being measured: the virus is just not considered important enough to warrant the resources (2013, p. 9). The authors contend with the Cochrane reviewers’ criticism that most RCTs did not compare the results of vaccination campaigns to other flu reduction programs, such as hand washing, face masks, early detection policies, quarantines, avoiding new admissions, use of antivirals, and asking healthcare workers with ILI’s to stay home (2013, p. 11). The CDC authors argue that many of these other approaches were already implemented in B.C. and other parts of Canada, and there were still periodic outbreaks that contributed to patients’ deaths, citing three cases in Manitoba and Ontario. They also cite an editorial by

¹³ Cochrane reviews are often seen as the ‘gold standard’ of evidence in the medical and policy field, and are specifically designed to guide policy decisions such as these. The findings of this particular series of studies have been a thorn in the side of mandatory influenza policies across the world.

a different meta-analysis which found similar statistically significant relationships between vaccinating healthcare workers and reductions in all-cause mortality and ILI's.

Finally, after reviewing each critique of the Cochrane study, and lobbying their own retorts, they conclude with the following statement:

In sum, there is no question that influenza vaccination of healthcare workers providing care for residents/patients in long term care protects residents from significant morbidity and mortality. This reduction is achieved by preventing the introduction of influenza into these facilities by staff, and by reducing the risk of transmission of influenza among staff and between staff and patients (B.C. CDC, 2013, p. 12).

Throughout this section, we can see the many layers of uncertainty involved in science, and how much scientific discretion is used when interpreting clinical and epidemiological evidence. Health officials are dealing with uncertainty over how to define a case of influenza; what indicators are most appropriate to consider; which methodologies a team of researchers employed, and how that can bias their results. Different scientists and professionals have different estimations about what evidence is best and what values that decision ought to reflect. However, through this process of critiquing some evidence and justifying others, scientific uncertainty is cemented into fact, and this fact is then used to support a particular version of reality. This is one way in which the reality of vaccination is socially constructed: through the judgements and intuitions of authoritative scientific officials. Not only is it decided that vaccinating healthcare workers reduces patient mortality, but that it does so by preventing the illness from entering hospitals and care homes, as well as by reducing the risk of transmission between staff and patients.

This narrative is not unique to the B.C. CDC. In fact, Henry and Kendall's defense of the program in the *BCMJ* draws on statements from several other health organizations which articulate this same etiologic narrative. For example, the Association of Medical Microbiology and Infectious Disease (AMMI), a Canadian medical specialty association, released a 2012 position paper which argued that immunization should be a *requirement* for new and ongoing employees who spend time in areas where patients are present. Their paper states a series of claims, all of which are portrayed as objective facts, and uses similar evidence as the B.C. CDC: influenza is the most common infectious disease cause of death in Canada; vaccine efficacy is limited and mortality or morbidity

occurs even within vaccinated people; hospital acquired influenza can have high mortality in acute care facilities. Finally, they draw on the same four RCTs that the B.C. CDC defends to show that vaccinating healthcare workers might reduce patient mortality (Bryce et al., 2012). Most notable in this position piece is the way in which the agenda of the scientists is rhetorically erased and is instead replaced with an objective representation of the external world—as if the paper were a window pane (Gusfield, 1981, p. 84) through which to view the problem of influenza. Once again, the uncertainty surrounding the “facts” of influenza in care facilities is erased in favour of a concrete narrative of reality.

But not all scientists agree with this narrative. For example, research done by Danuta Skowronski, an epidemiological expert in the B.C. CDC, has shown that flu vaccine effectiveness is far lower than previously expected (Skowronski et al., 2016). This has been a constant issue behind influenza vaccination: the influenza virus mutates rapidly and there are many different strains that exist in a population at a given time (Paules et al., 2018). Surveillance data is collected from around the world which can describe which strains of influenza are circulating, and vaccine producers look at this data to make educated guesses about what the dominant strains will be each season. Sometimes they guess correctly, but sometimes they do not—thus the effectiveness of the flu vaccine can vary greatly from season to season, jumping from 13% to 80% depending on the season (Paules et al., 2017, 2018). Other vaccines such as MMR or polio vaccine—95% and 99% effectiveness respectively—target pathogens that do not have high rates of mutation, thus that effectiveness is more likely to last over time (barring any large mutation event). Although it is assumed that influenza vaccination was effective, many of these assumptions could have been based on early industry funded research, and as Skowronski says, “this was a blanket assumption that is simply not true” (Crowe, 2016). These new findings which question the effectiveness of seasonal flu vaccines are critically important to the validity of the flu programs. Skowronski herself concedes, “There’s no use promoting a vaccine that isn’t working well” (Crowe, 2016, para. 16).

Perhaps more concerning however, is that Skowronski’s research shows that individuals who receive the flu vaccine season to season may be *more* at risk of developing the disease than those who take the vaccine without any prior exposure

(Skowronski et al., 2010, 2016, 2017, 2019). Referred to as the “Canada Problem” because the same outcomes have not always been consistently corroborated in other countries, Skowronski’s findings further confound public health decisions about influenza vaccination. As the then-public health officer Perry Kendall said, “[the Canada Problem] makes the decision-making a lot more complex... It would be very nice to have information cut and dried, and very clear in advance in plenty of time to make the decisions. But that isn’t unfortunately the world that we’re living in.” (CBC, 2009). Although claims about the negative relationship between influenza vaccination status and immunity, which date back to the 1970s, have themselves been contested ¹⁴, a growing body of evidence has emerged around the world which supports Skowronski’s findings. Rather than being strictly a “Canadian Problem”, the issue seems to persist across the globe. Although Skowronski agrees that these findings should motivate public health to find a better solution to influenza prevention, she still acknowledges that vaccination may be the best option available for many people:

I think it’s reasonable that currently the recommendation is to continue, for instance, especially for people who are at high risk, immediate risk of hospitalization or death ... For these people, there is a clear and present and real threat that they need to deal with and vaccine is the best way. (Crowe, 2015, para. 19)

So even though the intervention may be flawed, for many disease experts vaccination continues to be something to fall back on in times of desperation.

In a commentary published in the Canadian Medical Association Journal, Gardam and Lemieux¹⁵ (2013) argue that current flu vaccines are not effective enough to warrant mandatory vaccination. They question the robustness of the commonly cited statistics, arguing that they are often derived from older estimates or “worst-case scenarios” derived

¹⁴ See Skowronski *et al.*’s recent article (2017) for a more thorough history of the negative relationship between seasonal influenza vaccination and influenza morbidity.

¹⁵ Like Skowronski, both authors are highly acclaimed in their field. At the time of writing this piece, Gardam was the Director of Infection Prevention and Control and Lemieux was the Chief of Family Medicine at the University Health Network in Toronto. Both have extensive careers in infectious disease management.

from models¹⁶; they put forward evidence that flu vaccination is “considerably less effective than is commonly accepted”; they draw on the Cochrane review and agree with the authors that influenza specific mortality (not all-cause mortality) is the best indicator; and they argue that the erratic effectiveness of the vaccine season to season could undermine a mandatory policy’s legitimacy (2013, p. 640). Because of this uncertainty, they suggest that coercive measures such as mandatory policies should only be implemented once flu vaccination technology has been improved. They argue that health authorities stand a greater chance at winning lawsuits lodged by health workers’ unions by waiting for a more effective vaccine to be developed, such as the much sought after universal flu vaccine¹⁷.

Gardam and Lemieux are not alone in this critique. The *Globe and Mail* interviewed a physician from Western Canada who echoes the common critiques of the policy: the limited effectiveness of the vaccine season to season, and the evidence that mandatory campaigns do not reduce transmission (Weeks, 2014). They even go so far as to claim that many advocates of the mandatory policies have received research and funding from vaccine-makers—implying that their opinions have been corrupted by Big-Pharma¹⁸. Indeed, with all the discussion about the effectiveness of the vaccine, and how it reduces patients’ mortality, one might have forgotten the B.C. CDC’s third goal of the

¹⁶ Gardam and Skowkronski later co-authored a paper published in PlosOne which critiqued the four RCTs espoused by the B.C. CDC’s Review of the Evidence, drawing attention to an error in their statistical interpretation of their data and application of their models (see Serres et al., 2017). In their estimation, if one took the results of these four trials seriously, the reduction in mortality attributed to vaccinating healthcare workers would vastly exceed how many flu-related deaths there are each year. Put simply, the numbers just do not add up.

¹⁷ A “universal” flu vaccine is a vaccine which will grant immunity against *all* strains of influenza (Campbell, 2018; Paules et al., 2017, 2018). With this panacea, scientists would no longer have to perform the arduous task of guessing what strains will be most dominant season to season, and vaccine producing companies would no longer have to pay for this research. Unsurprisingly, this is a highly anticipated discovery in many professional circles.

¹⁸ Although this may seem like a lofty claim, there have been a number of authors who have described how pharmaceutical companies can influence scientists, patients, and professionals (see for example Hausman, 2019, p. 147). Bioethicist Carl Elliot (2010) describes how even bioethicists are implicated in pharmaceutical driven corruption (see also Hausman, 2019, p. 127). Even when pharmaceutical companies “play by the rules”, they can often have a significant sway on how research is done as well as its outcomes (see Angell, 2004; Dumit, 2012; J. A. Greene, 2006; Hausman, 2019, pp. 166–167). Whether or not professionals in Canada are part of pharma-backed conspiracies is far beyond the scope of this project. But it is interesting to note that such scandals are far from fictitious, and the mistrust that stems from these lugubrious relationships is an important feature of some researcher’s’ narratives.

policy: to reduce influenza-related absenteeism in healthcare workers. Instead of being wholly for the public good, one might argue that this goal is a pragmatic way for health authorities to reduce the cost of absenteeism and paid sick days for their workers.

But those critiquing mandatory influenza policies often feel silenced. Gardam has been heavily criticized and undermined in the medical community for his commentary in the *CMAJ*, and the physician interviewed by the *Globe and Mail* wished to remain anonymous specifically because they were afraid of the consequences for speaking out against vaccination and the B.C. IPP (Weeks, 2014). Similar issues have been reported by other scholars who have remained skeptical of vaccination programs, including a researcher from the Oxford Vaccination Group who has confessed that she receives a large amount of hate mail and derogatory comments on her work (Vanderslott, 2019). Critiquing vaccination, it appears, can have dire consequences on one's career and their claims to authority or professional legitimacy.

In her discussion on vaccination controversies, Hausman shows that arguments for and against vaccination often mobilize scientific evidence to support their claims, and yet different groups attempt to deny the legitimacy of each other's truth claims by depicting them as either irrational or invalid (2019, pp. 64, 87–89). Even though the impetus to vaccinate (or not to vaccinate) is often framed through a lens of objective facts, claims *to* fact are often denied. Hausman recognizes this and argues that science alone is insufficient to support these rhetorical statements—after all, scientific fact itself is socially produced and therefore value laden. In her view, all beliefs are subject to values and ideologies, making “the facts” far less objective than we might be led to believe (2019, p. 90). Rather than denying the idea of “truth”, she argues that this post-structuralist framing of fact emphasizes how facts are created in highly contextualized and value-laden settings (2019, pp. 91, 94, 112, 113, 188, 122). This trait of vaccination controversy is exemplified in the narratives mobilized by the different actors involved in the B.C. IPP debate, who all use scientific evidence in different ways to assert their specific depictions of reality. Through the process of differentially discrediting or certifying certain pieces of evidence, these narratives demonstrate how fact is socially constructed and practiced. This process causes subjective motives and biases to permeate and shape so-called “facts” about influenza and the effects of influenza programs.

Morality and the Law in the B.C. IPP

The organization which has perhaps shown the most resistance to the policy is the B.C. Nurses' Union. Leaders of this organization, such as the president Gayle Duteil, have been adamantly against the policy since its inception. Similar to Offley's critique in the *BCMJ*, Duteil has consistently denied the scientific legitimacy of the B.C. IPP, arguing in a letter to B.C. health authorities that "given the lack of scientific evidence, we believe the policy was introduced for the sole purpose of driving vaccination rates up" (2015, para. 4). Unlike other critiques of the program though, Duteil does not provide any scientific data to support her claims. Instead, she cites the arbitration decision of similar policies in Ontario, which were overturned specifically because the arbitrator did not see there was sufficient evidence to support the policy (2015). Left without any tangible scientific basis, Duteil argues, the policy is a coercive tool which is both unreasonable and potentially violates health workers' collective agreements (BCNU, 2015).

Instead of abandoning attention to flu-related mortality however, Duteil instead suggests "proven measures" (Duteil, 2015, para. 5) to combat the illness, including education, hand hygiene, and reducing overcrowding in hospitals. Perhaps as a way to incite politically motivated civil disobedience, Duteil urged healthcare workers to wash their hands or stay home if they're experiencing symptoms (BCNU, 2015). But even after mobilizing all this rhetoric against the B.C. IPP, Duteil admits that she receives and advertises her own flu vaccination each season (2015). So although Duteil might personally support such vaccination, she still argues that the decision to vaccinate ought to be left to the discretion of each healthcare worker: "[the BCNU] will continue to support our members' right to make personal/professional decisions about whether the flu vaccine is right for them." (BCNU, 2018, para. 2). Similar to the critique launched by Gardam, her argument is that the evidence supporting vaccination is just not robust enough to support a coercive policy which impinges on workers' autonomy.

Other medical associations draw on different moral norms to strengthen the power of their narratives. For example, the AMMI perspective discussed earlier buttress their claim that healthcare workers should face mandatory vaccination policies with an ethical argument:

As workers in occupations that are freely chosen, all persons who work in health care, but physicians in particular, are granted special privileges and powers by society. As a result, we also have specific obligations to do no harm, and to take all reasonable action to protect the patients we care for. Being vaccinated against influenza is a duty of care; the needs and safety of patients must come before the personal preferences of individual health care workers. (Bryce et al., 2012, p. 94)

Here, Bryce et al. reconfigure the question of whether or not healthcare workers *should* be vaccinated to whether or not they *ought* to get vaccinated. Moreover, they mobilize these moralized arguments using the same objective tone they used when they laid out the “facts” of influenza, as if these norms were universal laws that healthcare workers must follow. They draw on the idea that health workers have special moral responsibilities—the idea to “do no harm”, to protect their patients, and to act in their best interests—and they cement the idea that vaccination is a way in which health workers can meet these obligations. Combined with the scientific component, the narrative plot the AMMI puts forth might go something like this: influenza is a problem; health workers can be immunized which prevents this problem, or at the very least seems to mitigate its negative effects on their patients; despite the lack of side-effects, health worker vaccination is relatively low; voluntary programs to increase vaccination have failed, but mandatory programs seem to have worked; since health workers have a recognized set of special moral obligations towards their patients, such as keeping them safe, not only are these programs ethically permissible, but also *required* to uphold the moral structure of the profession. Here we can see that mandatory vaccination policies—like public laws—provide a way to regulate health workers who are seen as immoral..

The narrative element to this moral thread is especially prominent in a series of loosely related position statements by the CMA and the CMPA (CMA, 2005; CMPA, 2012). These two well-cited professional pieces continue to draw on moral arguments to justify regulation of healthcare workers, but also begin to develop a different narrative than previous organizational statements in order to explain and justify health care workers’ sporadic support of mandatory vaccination policies. For example, the CMA begins their piece but describing what they believe to be the relevance of “professionalism”:

Medical professionalism includes both the relationship between a physician and a patient and a social contract between physicians and society. Society grants the profession privileges, including exclusive or primary responsibility for the provision of certain services and a high degree of self-regulation. In return, the profession agrees to use these privileges primarily for the benefit of others and only secondarily for its own benefit. (CMA, 2005, p. 1)

Drawing on contractualist ideas and notions of professional ethics, they construct the medical profession as an inherently moral profession, in which physicians are held to a higher moral standard than the general population and are therefore able to have a greater legitimacy in moral debates. This heightened moral standing is a primary reason why physicians have the power to self-regulate themselves and it may also be the reason why there has been so much scrutiny over physician resistance to the B.C. IPP. This resistance not only symbolically threatens the legitimacy of biomedicine, but also of the entire paradigm of self-regulation that physicians have upheld in Canada.

Despite occupying this elevated moral standing, the CMA argues that physicians are not immune to immoral influences. In their piece, they provide a list of “challenges to professionalism” which can compromise a physician’s role as a moral authority or undermine their ability to fulfill their obligations to society. Challenges range from things like resource constraints—which limit physicians’ capacities to do their jobs as well as they would like, to things like bureaucratic challenges and the industrialization of healthcare—which adds complexity and fragments the field into increasingly specialized components, to influences such as commercialism and consumerism in the health industry—all of which complicate the physician-patient relationship (CMA, 2005). The CMA depicts these challenges as outside forces affecting physicians’ judgement, thus transforming an apparent lack of professionalism from an individual issue of poor morals to a structural issue of corruption and influence.

Drawing on these challenges, the CMPA continued the narrative created by the CMA in a publication in 2012. They state:

The healthcare landscape is changing. As a result, many physicians are finding it increasingly challenging to meet their responsibilities to their patients and to society. Some doctors may even begin to question the continued relevance of professional values and behaviours... Patients, too, face a changing and often confusing healthcare system where they may be confronted with conflicting health information and difficult care decisions. In this new reality, patients will

continue to look to their doctor as their trusted healthcare source. Despite the evolving healthcare environment, physician professionalism should continue to be a guidepost in the new era of medicine. (CMPA, 2012, p. 1).

Here, the positions of both medical practitioners and patients are explained as confused or confounded by a changing “healthcare landscape”. Because of changes in health care organization, delivery, and structure, the traditional values and responsibilities of medical practitioners have been thrown into flux. A narrative setting is constructed in which the medical system is unstable and shifting. In this tempestuous environment, physicians encounter many challenges which test their morals. Patients still look to physicians as their moral compass (like physicians have always been), and it is the physician’s duty to act not only professionally and competently, but also as moral role models for patients and the public alike.

From these narratives, one can explain the opposition to vaccination as less agentic, and more as the result of changes in the “healthcare landscape”¹⁹. Instead of being wholly against vaccination, they frame defiant physicians—and other healthcare workers by extension—as moral agents who have merely lost their way (through no fault of their own). These agents can easily be redeemed once the proper guiding principles have been established. The fear (and one which is not-so-implicitly implied)²⁰ is that if physicians fail to morally regulate themselves, the state will be forced to intervene—potentially ruining the current professionally-led regulation of physicians. These calls to professionalism are not unrelated to the B.C. IPP controversy. In fact, there is strong reason to believe that this statement from the CMPA was directed towards B.C. and the debate over the B.C. IPP specifically. The editor of the *BCMJ* has argued that this message was released in order to remind B.C. physicians of the stakes involved in fighting against the government and the B.C. IPP and reminds them that “putting aside one’s own personal feelings and complying with the vaccination policy speaks to the professionalism that the public expects” (A. Clarke, 2013, p. 1). In addition to conflict

¹⁹ These claims can be interpreted both as an appeal to the broader trend of biomedicalization (A. E. Clarke et al., 2003) as well as to more specific changes to Canada’s health care and delivery system since the 2000s, including the use of interprofessional primary health care teams, new types of health payment schemes, and changes in health governance (see Hutchison et al., 2011).

²⁰ For example, in the same statement, the CMPA explicitly say that “maintaining the fundamental principles of professionalism is a paramount requirement for self- or professionally-led regulation” (2012).

within the province then, the debate over the B.C. IPP has rattled professional organizations throughout the entirety of Canada.

Vaccination as Common Sense

Perhaps one of the most interesting claims about the science of flu vaccination I encountered during my research was in a bioethics paper authored by a handful of prominent health scientists (van Delden et al., 2008). After summarizing the uncertainty of the literature on flu vaccinations and the mortality of long-term care facility residents, the authors of this ethics review state: “It would seem that there is strong evidence to support the *common sense view* that influenza vaccination of [healthcare workers] in long-term care institutions reduces the probability of death and morbidity among residents” (2008, emphasis added). The authors’ point, it seems, is that flu vaccination just makes sense. Even if the scientific knowledge about the mechanics of its prevention is not known, even if there is mixed evidence of how well (if at all) it prevents disease in healthcare workers or their patients, the idea that vaccination prevents disease just seems so taken for granted that it could not possibly be untrue.

The idea that vaccination is common sense is not limited to bioethicists. In a book written by Bonnie Henry (2009), she describes her own philosophy for managing infection disease risks. In her common sense rationale for disease prevention, vaccination ranks highly, coming in fourth on her list of ten general recommendations to stay healthy, as well as being a core pillar of public health (alongside clean water systems) (2009, p. 49). Although she lauds simple hygienic practices, Henry still views vaccination as the most effective way to prevent infectious disease, but argues that vaccines are victims of their own success: with herd immunity giving many people the impression that they can opt-out of routine vaccinations (2009, p. 56). In fact, the first myth she dispels in an FAQ appendix is that “my immune system is healthy, so I don’t need immunization. Besides, vaccines are dangerous”. Henry responds to this rhetorically constructed interlocutor by saying “vaccines are safe and effective, and our best protection against many infections”, as well as citing evidence that vaccines do not cause autism (2009, p. 235).

By formulating a response to an imagined question, Henry engages in a Bakhtinian diatribe (1984, p. 120) against an assumed vaccine contrarian. Her reference

to autism is particularly telling. It is a reference to the ongoing MMR controversy which has dominated vaccination discourse since the 1990s (Brunson & Sobo, 2017; Hausman, 2019), but as Henry's case shows us, it has been transplanted and used as a catch-all for all types of vaccination debates. As we have seen in the case of the B.C. IPP however, there is an abundance of uncertainty over whether flu vaccines are safe or effective—or at least effective enough to warrant mandatory policies. Certain organizations have questioned whether they even are our best protection against the flu, instead arguing for changes in working conditions and an increased adherence to masking and hygienic practices. Nevertheless, there does seem to be a common sense assumption that vaccination ought to be the go-to intervention to prevent infectious disease.

Understanding science and scientific facts as inherently interested, Hausman contends that debates about vaccination can be understood as debates about science and “*something else*”—some cultural or social problem that is being addressed through the controversy (2019, p. 219). As I have shown in this chapter, the B.C. IPP debate is not fully about the “facts” of influenza and health worker vaccination. It is about whose science should be trusted; how confident we should be in an intervention before mandating it; about who gains what from the policy; and about fears of Big Pharma-driven corruption and compromised officials. It is about ideas of workers' rights; of what it means to be a health worker, and what obligations they might owe to their patients; and about larger concerns about professional self-regulation. But I think it is also about something more. I believe that this controversy is inextricably linked to a much more general public narrative surrounding vaccination—a narrative which might shed light on the common sense assumption that vaccination is the most effective way to control disease. I explore the development and contours of this cultural narrative in the following chapter.

Chapter 2: The “Vaccination Narrative”

When I first started this work, way back in my undergraduate studies, I came into the debate with the preconceived notion that those against the B.C. IPP were either intentionally ignoring science or were selfishly prioritizing their own values over public health goods. My research—like that of the many other authors I described in the introductory section—inherently problematized vaccine resistance and sought to understand how this problem could be rectified. Even after describing the myriad factors which problematize the B.C. CDC position, part of me still wants to believe in their narrative claims that mandatory seasonal influenza vaccination is both supported by scientific evidence and grounded in moral authority. The story has a certain truthiness to it: *of course* vaccination is an effective way to prevent disease, and those who resist this intervention *must* be either irrational (or sufficiently immoral) to justify punitive measures. It just seems like common sense. The goal of this section is to explore why vaccination might seem like a common sense solution to me. Why, when I originally heard about the controversy surrounding the B.C. IPP, I planned on studying how Anti-Vaxxers could work in medical institutions, how they could morally justify their stance to the patients, and why restrictions were so contentious to implement. Throughout my research, and after scrutinizing my own positionality, I have begun to ask new questions. How have I come to think about vaccination? What factors have influenced these beliefs? What values and ideas have become entangled with vaccination and how have these entanglements been relayed to me? To answer these questions, I aim to describe a more generalized and public narrative about vaccination—the Vaccination Narrative—which I believe has significantly contributed to the common sense assumptions which have limited discussions about vaccination.

The Vaccination Narrative is told to me through the news, in comments sections, and in my quotidian life on the internet. It is a story that is spread by our health officials as well as by the general public; by my friends, colleagues, teachers, and family. The narrative creates characters and turns them into tropes by attributing them with generalized characteristics. It provides a plot for these characters to follow—a structure that guides their actions and imbues them with meaning. Like the narratives I have

described in the controversy surrounding the B.C. IPP, the vaccination narrative is not fully fact nor fiction. Elements of fact are drawn on, and rhetorical techniques are employed which mobilize different truths, but at the same time, the narrative has the power to create truths (Foucault, 2019) by interpellating individuals into characters and thus reifying its own central tenets. Rather than being impressed upon us from an external source, through this process of interpellation, we also support this narrative, and can performatively enact (or subvert) the narrative.

I study this daunting topic through the use of autoethnography—as I myself am inextricably connected to this larger narrative structure (Hayano, 1979). This process and product of research (Ellis et al., 2011) aims to analyze “messy, uncertain, and emotional” (T. E. Adams et al., 2014, p. 9) social life and cultural forms by utilizing methods which can accommodate this chaos and uncertainty. Rejecting the idea that research can be done from a neutral, impersonal, and objective stance—an idea that I have shown to be problematic in chapter one of my thesis—autoethnography enables the researcher to acknowledge their own subjectivity, emotionality, and positionality with respect to their object of study (Ellis et al., 2011; Wall, 2008). Rather than seeing these subjective elements as limiting one’s ability to research—classifying them as “biases” — autoethnographic methods rely on the researcher’s subjectivity to create detailed, affective, and meaningful data. As anthropology has shown, canonical forms of research and writing often reflect White, masculine, heterosexual, middle/upper-classed, Christian, able-bodied assumptions about the world (Ellis et al., 2011). As I address throughout this chapter, these epistemological assumptions are often used to support narratives of vaccination, and as such, finding a research methodology that can both uncover as well as analyze these assumptions is a powerful tool in the context of this project.

I begin this analysis with my own interpretation of this narrative: what character tropes are developed, what actions they perform, and how these are organized into a cohesive structure. My autoethnographic analysis draws on my own experiences of the Vaccination Narrative, examining the personal experiences in my life in which elements of the Vaccination Narrative are told to me. I analyze documents which have affected my own personal opinion on vaccination: news articles from outlets I read such as *CBC*, *BBC*, *The New York Times*, and *The Guardian*; posts and comments on forums I peruse in

my free time; even internet memes that I see on my social media outlets (including Facebook and Reddit). By analyzing both the sources and mechanisms through which this story is relayed to me, I shed light on some broader theoretical implications of narrative construction, as well as the relationship between individuals and structures. Lastly, I argue that the Vaccination Narrative that I have grown intimately accustomed to perpetuates a certain ideology—an ideology which legitimates certain forms of authority and truths while simultaneously dismissing others.

Of course, the way I understand this narrative, as well as the ways in which it is told to me, are all strongly related to my own social positioning. Although I started my undergraduate degree in the hard sciences, I took a medical anthropology course as an elective which introduced me to the myriad social factors which can *construct* the “natural” world of biology (Martin, 1991) and disease (Nichter, 1981, 2008; Nichter, 2003). Moreover, this introduction to health showed me the extent of human suffering around the world. I interpreted these arguments as a personal call to action. Disenchanted with biology as an academic discipline, I decided to swap majors (and schools) to population and public health, a field which I hoped would allow me to “do good” (Berry, 2014) in the world. But amid the anthropology courses I took that problematized the central tenets and interests of public and global health (Greenough, 1995; Greenough et al., 2017; Renne, 2014; Tesh, 1988), my classes in epidemiology were centered around a reductivist paradigm which saw objective reality synechdochically constructed by models and metrics²¹. In most classes, illness and disease were treated as givens, and we were taught ways in which both pathogens and the people who carried them could be surveilled, quantified, controlled, managed, or modelled. Only rarely was there a pause to say if we *ought* to do this, or to deeply question why this was the de-facto approach to public health. As I was graduating, I landed an internship with the PHSA, working with a team in the B.C. CDC to create a set of community health indicators. My first glimpse into what a nine-to-five office job entailed, I found myself—like my colleagues—stuck at a desk with an internet connection and plenty of time on my hands. I passed the time by keeping up to date with health-related literature aimed at someone in my position:

²¹ For more critiques against epidemiology or metric driven approaches to health, see (V. Adams, 2016; Erikson, 2007, 2015; Suh, 2019)

reasonably well educated, middle class, and generally left leaning. Although this included some resources specifically related to my work at the time, it also included more general news sources and media outlets such as Reddit²².

I was born in 1994, and occupy that awkward generational space between Millennials and Generation Z. I was raised long after diseases such as diphtheria, mumps, and rubella were functionally eliminated in Canada. Neither I, nor my immediate family, experienced the public concern surrounding polio. The vaccine uptake for MMR and DPT were common enough where I lived that I never experienced measles, and while I did have a friend who had whooping cough as a child, this was certainly more of an anomaly than the norm. Although I was raised in the specter of the HIV pandemic—with safe-sex practices inscribed into me in school and at home—the danger was not as immediate to me as those who grew up in the 1980s. I have a few memories of the H1N1 pandemic in 2009, but although I vividly remember lining up with my classmates in our high school gym to receive the inoculation, my recollection of the panic surrounding the disease is much hazier. My only real experience with these illnesses has been through stories—and like many others in my generational and regional demographic, I encounter these stories through my online life on the internet.

All of this has contributed to my particular understanding of the Vaccination Narrative. Although my descriptions will certainly contain my own subjective interpretations and biases, I think they represent an understanding that is shared by other people—perhaps people who are similar to me, but perhaps not. At its heart, auto-ethnography seeks to describe and systematically analyze one's own life in order to understand shared aspects of cultural experience; to scrutinize the self to find out how one's perspective is constructed, and how the myriad factors which construct that representation might also affect others (Ellis et al., 2011; Wall, 2008). Through my discussion of the Vaccination Narrative, I hope that you-the-reader can relate to my experiences; that you can see how my perspective on vaccination has been influenced, and that my representation of these experiences can help you reflect on your own experience of vaccination discourse (whether you agree with me or not).

²² Reddit is often thought to epitomize the perspectives of middle-class American office workers.

The Vaccination Narrative: A Story of Modern Triumph

Like Heller (2008, p. 28), one of the main groups that conveys the Vaccination Narrative to me is the medical community. As I alluded to in the introduction, vaccination is held in extremely high esteem in most public health literature. It is heralded as one of the most important contributions to medicine, and mass vaccination is touted as one of the greatest achievements of the 20th century (Brewer et al., 2017; Centers for Disease Control and Prevention (CDC), 2011; Parkins et al., 2009). Ground-breaking global health events have been touted as triumphs for this miraculous technology. Ted Talks about the power of vaccination in eradicating diseases such as smallpox and polio are staples to Health Science 101 classes, introducing students to the relevance of their field of study. One such talk, presented by Bruce Aylward, the assistant director-general of the WHO's polio eradication program, depicts terrifying images—of people trapped in iron lungs and unable to breathe for themselves for the rest of their lives or of children who are crippled for life—and describes how, through political attention, hard work, and (most importantly) the “scientific miracle” of disease eradication, we can remove this “devastating and explosive disease” from the world once and for all (2011). He tells tales of how local reporters have called polio campaigns “foreign aid at its most heroic”. Although polio has not been eradicated *yet*, Aylward tells the audience to be optimistic and “to believe in the impossible”, providing some evidence of eradication in previously endemic regions of the world to show that this is not a pipe dream. An integral part of this miraculous impossibility-made-possible, of course, is the polio vaccine, which Aylward shows the audience at the start of his presentation and describes as “a bit of science that has changed the world”.

Stories like these create narratives of success, in which global health workers and programmers are working with local communities towards a just and healthy future. Through modern science, epitomized by small bottles of vaccine, evil diseases can be defeated. When shown in the classroom, these narratives are used not only as a way of educating students about how diseases are eradicated, but as an introduction to the types of things one might do with a health degree and the kinds of people we might become. They are inspirational videos intended to incite people to take action (or to donate to those prepared to take action). After hearing these stories—all those long years ago in my

undergrad—I vividly remember picturing myself in the front lines of the polio vaccination campaign in India, being one of those “hero”-foreign-aid-workers “fighting” against disease. I slipped into Aylward’s vaccination narrative and identified myself alongside the protagonists.

But the Vaccination Narrative is not a stand-alone story. It is one part in a longer narrative of modern progress. The linear narrative of modern progress—and the problems associated with it—have been heavily discussed in the literature (Cooper & Packard, 1997; Ferguson, 1999; Shakow & Irwin, 1999), and vaccination plays an integral part in this story of modernity (J. Heller, 2008, p. 19). Vaccination programs are seen as cornerstones of a good public health system and they have become synonymous with modern development (Hajj Hussein et al., 2015). More than health, vaccination is seen as a vital component of societies goals, such as the Millennium Development Goals and the Sustainable Development Goals (GAVI, 2021; WHO, 2020, p. 8). The global vaccination campaigns to eradicate smallpox and polio and their (mixed) successes have been touted as the products of biomedical and technoscientific ingenuity. These globalized interventions contributed to a “technological success narrative” of vaccination in which disease can be controlled—or eradicated altogether—through the use of technoscientific “magic bullet” solutions (Graham, 2016).

The monologic consistency of this narrative is so clear that my interpretation of it remains virtually unchanged from Heller’s original articulation of this story in 2008.

The cultural narrative of vaccines tells the story of a deadly disease that exerts a terrible toll in human suffering and death. Heroic researchers, working altruistically, marshal the forces of modern science to develop a simple intervention to ready the body’s own defense: a vaccine. Properly prepared, we can defend ourselves, just as our science demonstrates human mastery over death. Through the application of a simple, safe, and effective shot, we protect ourselves and set the disease on the road to oblivion. Our compliance with mass vaccination policies is a moral obligation that protects each one of us at the same time that we contribute to a common goal of eradicating disease. (J. Heller, 2008, p. 22)

I came across this account late in the writing of this thesis, and I am continually astounded to see how similar our accounts of this narrative are. Although my and Heller’s experience of this narrative are based on radically different cases, and are separated by 14 years’ worth of health discourse (not to mention a border’s worth of cultural difference),

the overall story is astonishingly similar. The fact that this narrative has remained relatively unchanged over such a prolonged period of time, and persists across different cultures and borders, is a testament to the standing of this technology in the public sphere.

With vaccination framed as an integral component of a good and modern life, the fact that many people refuse this miraculous intervention presents a perplexing problem for both health scientists and the public alike (Germani & Biller-Andorno, 2021). In this linear narrative of modern development and technological progress, vaccination resistance is seen as a “regression” (Hussain et al., 2018) from a future that was promised. It brings to mind James Ferguson’s idea of abjection: the feeling of being ‘left behind’ from some utopic future (Ferguson, 1999). The cause of this abjection has been iconicized and given a face: the “Anti-Vaxxers”²³. Although there have been non-vaccinating individuals ever since the intervention was invented, this term commonly used to describe these individuals as well as the meaning this term connotes are relatively recent constructions.

The Moral Panic of (non)-Vaccination

Like many other scholars (Brunson & Sobó, 2017; Greenberg et al., 2019), I understand this reaction to non-vaccinating groups as a moral panic: the reaction of mainstream society to some great evil that threatens the wellbeing of society (S. Cohen, 2002, p. 1). Within this atmosphere of anxiety and hyper-awareness of social divisions, a folk devil is constructed as a symbolic figure who serves as a visual reminder of “what we should not be” (S. Cohen, 2002, p. 2). Moral panics consists of two separate, but inter-related processes: the construction of the deviant folk devil and the belief system through which this deviancy is framed, as well as the symbolic and objective societal reaction to that deviancy. The symbolic character of the folk devil is constructed in the

²³ I use the term “Anti-Vaxxer” to describe the discursive and ontological category created by mainstream vaccination discourse. However, I think it is important to note that not everyone who is unvaccinated fits this label. In the following sections, I use the term Anti-Vaxxer and Anti-Vaccination to discuss the discursive labels contained within the Vaccination Narrative, but I also use terms like non-vaccinated to describe people who are not vaccinated for any number of reasons (such as being immunocompromised), or Hausman’s term “vaccine dissenter” to denote someone who views their non-vaccination as political resistance to particular regime, but who might not relate to the term Anti-Vaxxer.

immediate wake of a crisis. In this period of uncertainty, attempts are made to assess the extent of the damage caused during the crisis event and to develop an understanding of its etiology (S. Cohen, 2002, p. 24). This initial system of belief for understanding the crisis is not *a priori* knowledge. Particular characteristics of the event are emphasized or de-emphasized, and evidence is mobilized to show that the event is a serious threat which demands a particular solution (S. Cohen, 2002, pp. 26, 36; Gusfield, 1981). Villains are created by attaching symbolic meanings to traits of objects or people related to the crisis, infusing them with political and social meaning and removing them from any semblance of neutrality (S. Cohen, 2002, p. 37).

The belief system developed during this initial phase is critical for determining the reaction to deviancy in the future, contributing to the emotional and intellectual standpoint from which the perceived deviance is evaluated (S. Cohen, 2002, p. 50), the opinion about the nature of the perceived deviants and their behaviors (2002, p. 53), as well as opinions on the etiology of the so-called deviant behavior (2002, p. 62). It is also critical for legitimizing the response to the deviancy—characteristically heavy-handed and coercive measures of social control (Becker, 1973; S. Cohen, 2002, p. 91; Hall et al., 1978). The material or ideological results of this response are usually the targets of moral entrepreneurs who engage with the panic—allowing them to achieve their ulterior interests through the panicked reaction to the crisis and the system of belief which frames it. Over time, or as the crisis continues, the initial belief system may diffuse outward geographically and administratively, and may undergo changes as it is encountered and sculpted by different entrepreneurs. For example, Hall describes how the belief systems associated with some crises can be applied to other, seemingly unrelated, events—across both borders and continents (Cohen, 2002, pp. 38–29; Hall et al., 1978, pp. 19–21).

The claim that vaccination is the subject of a moral panic is easy to support. Indeed, vaccination meets the three standards of a moral panic as outlined by Cohen:

a suitable enemy: a soft target, easily denounced, with little power and preferably without even access to the battlefields of cultural politics... A suitable victim: someone with whom you can identify, someone who could have been and one day could be anybody... [And] a consensus that the beliefs or action being denounced were not insulated entities ('it's not only this') but integral parts of the society or else could (and would) be unless 'something was done' (2002, p. xii).

In the following sections, I will give an overview of the initial crisis surrounding non-vaccination and the belief system that was constructed in its wake, as well as describe how contemporary public discourse surrounding vaccination appears to meet the three criteria defined by Cohen.

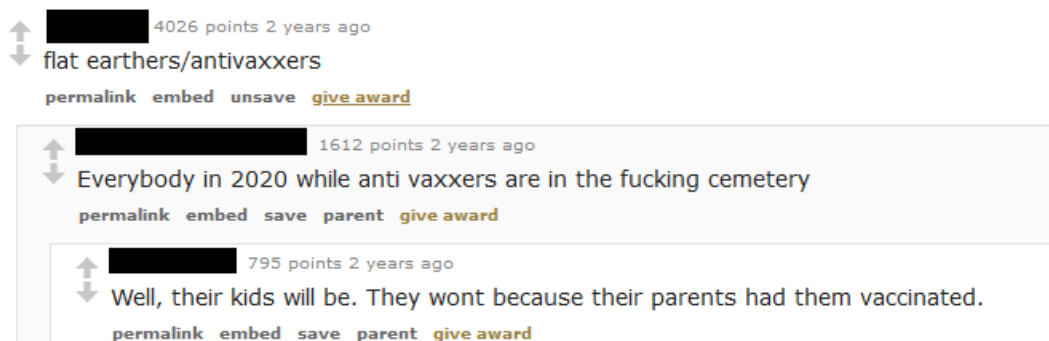
Most experts agree that contemporary vaccination discourse originated from two related crises in the 1970s and 1990s: the Diphtheria, Tetanus, Pertussis (DTP) and, perhaps more importantly, the Measles, Mumps, and Rubella (MMR) controversies (Hausman, 2019, pp. 16, 22,; Hoffman, 2019)²⁴. In both controversies, scientific literature was published which questioned the safety of the vaccines, prompting an initial crisis and a period of uncertainty (C. Cohen et al., 2007; Gangarosa et al., 1998; Kulenkampff et al., 1974; Wakefield et al., 1998). During this post-crisis uncertainty, various organizations mobilized evidence in attempts to frame the problem and provide a solution to the crisis. In both cases, the panics were resolved (the remaining vaccination dissent notwithstanding) by reports which discredited the initial science that questioned the appropriateness of the two vaccines (Group, 2011; Meikle & Boseley, 2010; D. L. Miller & Ross, 1978). This abasement was especially prominent in the MMR controversy, where the researcher who claimed to have found a relationship between the MMR vaccine and autism not only had his research retracted from a prominent medical journal, but was also stripped of his medical license for professional misconduct (Deer, 2011a, 2011b; Group, 2011; Meikle & Boseley, 2010). Thus, an initial belief system was formed for how to deal with vaccine skepticism: a belief system which saw vaccine opposition as the result of misinformation and financial motivations of corrupt scientists. These initial crises, and the beliefs formed in response to them, have become persistent spectres in vaccination conversations around the world.

²⁴ Beyond expert opinion, this narrative has penetrated the public sphere and has been recited to answer questions about vaccination on internet forums (thowayinthrowaway, 2021). However, for a more thorough history of vaccination in the 20th century, albeit one centered around an American perspective, see Colgrove (2006) and Conis (2014).

Panic in Mainstream Media

Perhaps the most obvious way this system of belief is presented to me is through the media. Media outlets are abuzz with stories of “Anti-Vaxxers”. News reports show how anti-vaccination is linked to right-wing populism and Trumpian politics (Boseley, 2018; Hinsliff, 2019). Claims are made about their systems of belief: that they believe in alternative medicines such as chiropractry or essential oils (Bean & Catania, 2018) and other new-age remedies such as the “Raw Water” craze (Kirby, 2018). They are depicted as mentally ill or at the very least easily manipulated by fake news (Ifan, 2021), social media (Wong, 2019), and even foreign powers—through pernicious twitter trolling (BBC, 2018). Stories openly mock “confused” vaccination dissenters who mistakenly stormed the wrong news studio (Elliot, 2021; Pannett, 2021; The Guardian, 2021). One can barely read the news without catching wind of this monologic narrative. As other authors have argued, mainstream media outlets depict anti-vaxxers’ characters as anti-scientific, anti-government, and anti-social (Brunson & Sobo, 2017; Greenberg et al., 2019).

But depictions of anti-vaxxers are not limited to newspaper articles. The branding of the Anti-Vaxxer continues in the comments section of social media outlets, locating them alongside post-truth politics, Tide Pod myths, and kale consumption (FemPositive, 2019). Their traits are communicated and reified to me throughout forum threads—even when those threads may not have anything to do with vaccination per se. For example, a highly upvoted post in the “Ask Reddit” forum asked users what trend they hoped wouldn’t come back in the 2020s (ZoeCoco12, 2019). The comments are shown below.



Here, in a thread where one might not expect to find it, anti-vaxxers are depicted alongside flat earthers, and condemned to death or to watching their children die. On

posts which are more relevant to vaccination, such as one post sharing an NBC news article about a vaccination dissenter radio host who died from Covid-19 (architecture13, 2021), comments can be downright ruthless.



This kind of *anti-Anti-Vaccination* rhetoric has become normalized in the communities which I see on the internet. The repetition of comments which demonize these characters sometimes causes me to forget that there are people behind these tropes, who perhaps have their own reasons and motives for resisting vaccination. This nuance disappears in the wake of comment sections which outright dehumanize non-vaccinating individuals

But mainstream vaccination discourse does not focus on vaccination dissenters alone. Victims of the vaccination crisis have also been heavily emphasized by news outlets and public health programs alike. Although the shape the victim takes may change depending on which vaccine is being discussed, their character is similarly constructed. They are the most vulnerable members of society who rely on herd immunity to defend themselves: babies and children, pregnant women, the elderly, and the immunosuppressed (CDC, 2019c). The example of Iowa’s Ethan Lindenberger summarizes this point succinctly. This 18 year old high schooler made a post on Reddit asking how he could get vaccinated without the knowledge of his mother—an adamant vaccination dissenter, who Ethan himself describes as “kind of stupid” (Doubek, 2019). Ethan tells the tale of how, because of the anti-vaccination ads his mother had seen on Facebook, he was ineligible for the regular vaccination sessions at school. Not only was he robbed of his opportunity for immunization, but he was socially isolated from an

activity which other students could partake in. This narrative situates Ethan as a dual victim: his health is at the mercy of a misinformed mother as well as the U.S. laws which allow parents to apply for religious or philosophical exemptions to vaccination (Doubek, 2019). Indeed, these laws have recently been called into question (Pierik, 2018).

Stories like these have become a sort of folktale on the internet and are a staple post on many advice forums. But these narratives are not confined to Reddit—they have begun to penetrate the broader public sphere. The *New York Times* answers questions about how children should manage their Anti-Vaxxer parents—whose minds are “closed to reason”—after they secretly getting vaccinated without their consent (Galanes, 2021). *Global News* reported on a Vancouver woman’s experience of growing up with two “very loving, anti-vaxxer” parents, and her own struggles to get vaccinated after learning about measles outbreaks and realizing that she was “a part of the problem” (Fleerackers, 2020). *Vox* highlights several adults who are trying to get their obstinate and “misinformed” parents vaccinated (Nguyen, 2021).

These stories are powerful. They provide a narrative structure which people can relate to and through which they can articulate their experiences. In their repetition, they are further cemented as cultural tropes. Recognized plots are constructed, in which children are prevented from accessing life-saving technologies because of their parents, but persevere, and through the help of medical professionals, friends, or well-intentioned internet strangers, overcome this adversity to achieve the ever sought-after “immunity”. These narratives create (or reiterates) character archetypes: the innocent child, victimized through misguided parental authority; the irrational or deluded parents themselves, who are perhaps influenced by other, more nefarious, agents²⁵; the heroes who aid the child in their quest for immunity. Because these stories are the ones which are repeated and publicized, they become the de-facto way in which I—perhaps *we*—can conceptualize the relationship between so-called Anti-Vaxxers and their children, one being innocent victims, and the other irrational tyrants.

²⁵ Indeed, there is a growing body of research from vaccine-related journals that attempts to uncover *who* is behind anti-vaccination campaigns. Some research shows that the vast majority of anti-vaccination ads on Facebook are funded by a small group of buyers (Jamison et al., 2020).

These stories also introduce the protagonist or the heroes of the vaccination story. Like victims of vaccination these characters can appear in many forms: the heroic foreign workers I described earlier, fighting for modernity in developing countries; the scientists behind vaccine development or the epidemiologist and public health personnel who plan mass vaccination campaigns; the health workers on the front lines who administer vaccines. But in the polarized and charged vaccination narrative one need not be working with vaccines themselves to consider oneself a protagonist. By positioning oneself on the side of vaccination, by refuting anti-vaxxer conspiracies, fake news, and other so-called “false beliefs” (Hausman, 2019, pp. 32, 64), people can combat the rising danger of anti-vaccination sentiments themselves. Through this lens, one can still be a “hero” in the vaccination narrative even if they are not in health-related professions. They can be an active agent in the narrative through something as simple as commenting on a forum, helping a teenager subvert their parents and get a vaccine, or, as I discuss in the next section, creating and sharing memes.

The Vaccination Narrative and Internet Memes

Not only is vaccination a prominent topic of written media and public commentary, but the controversy has also been addressed in the form of internet memes. These, often comedic, artistic forms can be thought of as a “particular idea presented as a written text, image, language ‘move,’ or some other unit of cultural ‘stuff’” (Knobel & Lankshear, 2007, p. 202; Yoon, 2016); concrete phenomena encapsulated in tangible online products (Shifman, 2013). Memes about vaccination continue the broader vaccination narrative, but also provide a penetrating affective component to it, tapping into the deeply moralized feelings of disgust and disdain many people hold towards non-vaccinating individuals (Huntington, 2015; Jenkins, 2014; Kahan et al., 2017). As Shifman reminds us, “memes may best be understood as cultural information that passes along from person to person, yet gradually scales into a shared social phenomenon. Although they spread on a micro basis, memes’ impact is on the macro: They shape the mindsets, forms of behavior, and actions of social groups” (Shifman, 2013). If one’s mediascape is inundated with the same kinds of politically slanted memes, it might be easy for one to become unreflexive of common assumptions and for certain social

representations to become naturalized. Thus, something as simple as liking a funny post while on your way to work can be seen as a profound social act in replicating, or refuting, hegemonic societal forces. Such seemingly minute actions may play a large role in creating and maintaining mainstream vaccination discourses.

Although one might dismiss memes as too insignificant or quotidian to be of value, they play an important role in constructing the social world. Anthropologists have long studied the mundane as a way to shed light on broader cultural trends and, increasingly, memes are seen as an important component of contemporary life which is intimately linked to health and disease (see for example Kahan et al., 2017; Marcus & Singer, 2017). Indeed, Hausman reminds us that the news is not the only method through which ideas about vaccination are relayed: “in examining how these views are created and sustained in news reporting, we can understand how certain ideas... become truisms, and, in the current climate, memes that are shared across social media platforms without comment or thoughtful reflection” (2019, p. 38). Vaccination memes have become a perennial fixture of my online experience, appearing on the front page of Reddit and shared to me by friends and colleagues. This section builds on the work done by other scholars studying vaccination discourse by elaborating how the narrative is told through vaccine-related internet memes I encountered in my auto-ethnographic research.

In the content of memes, Anti-Vaxxers are portrayed as challenging modern medicine and science without having any “real” grounds to do so. This critique of vaccination dissenters is exemplified in the memes propagated after the celebrity actor Jim Carrey spoke out against mandatory student vaccination policies in California

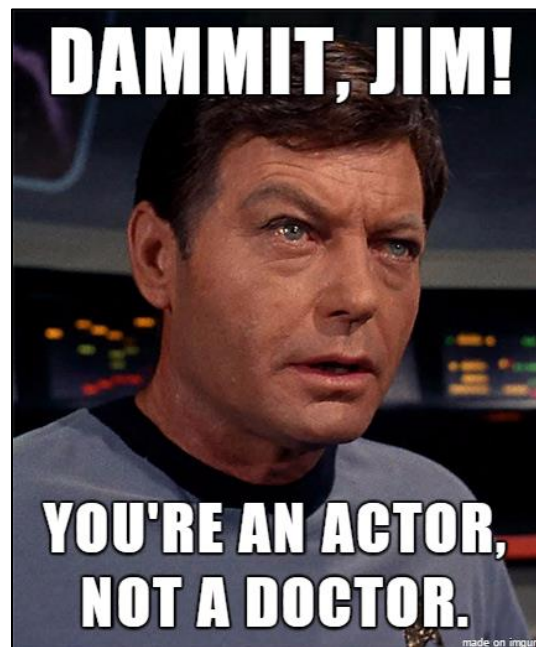


Figure 1: “MRW Jim Carrey went on a rant about mandatory vaccine laws.” (15900 upvotes on Reddit). The meme references the popular StarTrek series character Leonard McCoy’s famous catchphrase.

(Hoffman, 2019; Kluger, 2015). In the aftermath of this debate, the contents of Anti-Vaccination memes aimed to discredit vaccination dissenters who were critical of vaccination because of their lack of scientific or medical background. For example, one meme specifically addresses Carrey, claiming that he was not qualified to enter in this debate because he lacked the necessary knowledge and professional background (Figure 1). As another meme states, “the anti-vaccination movement basically consists of random people with no knowledge of medicine going ‘I can medicine better than



Figure 2: “Just let me be ignorant” (9781 upvotes on Reddit).

doctors’ and it would be hilarious if it wasn’t literally killing people”. These memes assert that there are certain qualifications one must meet before engaging in public debates. One has to have both the right kind of knowledge, as well as the perceived authority to wield that knowledge, to be seen as legitimate. These messages serve to ratify the absolute authority of (bio)medical professionals and scientists to make claims about health, illness, and disease interventions.

Knowledge and evidence themselves are frequently featured themes in vaccination-related memes. Many emphasize the differences between “real” scientific evidence and anecdotal evidence such as personal experience, privileging the perspectives of scientific researchers. One meme exemplifies this privilege (Figure 2). In it, two very different researchers are presented. In the top slide, we see a lab-coat wearing, pipette-wielding, (white-male) scientist. In contrast, the bottom slide shows a faceless, overweight, (white-female) “Anti-Vax Mom”. Setting aside the class, gender, and ethnic classifications within which these two characters are symbolically intertwined, we can see one very clear difference. One researcher does his research in a lab—a legitimate scientific institutions—while the other does her research on her cell-phone in the bathroom. The meme makes this point clear: one kind of research is legitimate, the

product of lab tested study, while the other more closely resembles the product of a certain bowel movement. Met with this image, the audience member is expected to roll their eyes at this irrational Anti-Vaxxer and sigh in exasperation. This perception of how “vaccine science” works is an interesting reflection of how the public might imagine scientific research unfolds. Through the logic presented in this meme, vaccines—being products of biomedical and technoscientific ingenuity—are thought to be tested in a biochemical lab. In practice however, vaccine testing occurs in multiple sites and across multiple scientific fields, both in clinical settings as well as in larger epidemiological systems. Thus, the contents of this meme are a product of a particular public imaginary of what “science” is and how its scientific knowledge is produced. This meme, and others like it, place scientists in extremely high esteem and attributes them with a special kind of cultural capital. They depict what Donna Haraway calls the “hero-scientist” (Haraway, 1991, p. 205). These figures achieve an almost celebratory status—some even have memes made to commemorate them. Like Szasz (2001) describes, they are depicted in the same manner as great political leaders. For example, Figure 3 draws attention to the inventor of the polio vaccine, Dr Jonas Salk²⁶. The meme author uses an authoritative voice to highlight several praiseworthy facts about this famous biomedical researcher: he chose not to patent his discovery so that it



Figure 3: “For Some Weird Reason Polio Is Making A Comeback In Some Countries *thinking Emoji*” (190 Likes on Memecenter).

²⁶ It is no accident that Salk is a prominent guest in vaccination memes—he is seen as a foundational character to the Vaccination Narrative. In his account of the Vaccination Narrative, Heller argues Salk is depicted as someone who, “driven by his ‘own personal dedication’, developed the vaccine which saved millions of children” (J. Heller, 2008, p. 4).



Figure 4: “The Future Of Anti-Vax Groups” (1264 likes on Memecenter).

could be more widely available to the public—a noble decision which caused him a significant financial loss. Salk is depicted as resisting the capitalist temptation to patent the drug for self-benefit. Instead, he fulfils the idealized role of the moral-scientist: one who works for a better future. Perhaps this is a reaction to anxieties about financial corruption and the ulterior interests of researchers, serving to remind the audience and vaccine researchers alike about what virtues they ought to strive towards.

Unsurprisingly, the death and illness associated with being unvaccinated was a common topic touched on in memes as well. Most memes portrayed Anti-Vaxxers, and their children in particular, as more vulnerable to disease, and ultimately more likely to die. Indeed, death was frequently the focus of these memes and was often swathed in dark and macabre humour.

For example, one meme parodied the classic “happy family photo” (Figure 4). The author of the meme uses a stock image of a happy family playing in a park, even choosing to leave in the watermark of whatever site they took the image from. While the family seems happy and colours used in the photos are vibrant and over-saturated, the text provides a stark contrast. The children in the family are in various states of decrepitude and death; the author even alludes to other, deceased, siblings who have died before the image was taken. What we-the-reader are supposed to understand and take away from this meme is that not-vaccinating leads to suffering and death. Within the symbolically rich and suggestive content, one might even forget to question what it means for one’s “blood to hurt” —or if such a thing were even possible.



Figure 5: “How I think Anti-vaxxers view their kids” (17400 upvotes on Reddit). The author references Lord Farquaad, the antagonist in the popular movie series Shrek. In the movie, Farquaad is depicted as a (literally) small and self-centered man who has far too much power for his own good.

Although humour was a consistently used tool in the framing of death, meme authors walk a fine line between dark humour and outright callousness. While some memes playfully draw on pop-culture references to connect with their audience and creatively frame their message (Figure 5), this is not always the case. In some cases, it appears that the content of the meme—the message that Anti-Vaccination is synonymous with child death—is privileged over the

form it is transmitted in. This leads to some painfully *un*-funny memes which crudely relay their messages. Despite their lackluster construction, these memes may serve an important role in reminding their audiences about the dangers of vaccine preventable diseases. Aside from the statistics reported in public health reports and newspapers, many people—such as myself—have no personal experience of measles, polio, or whooping cough, and therefore might forget how deadly these diseases can be (CDC, 2019b). By dramatizing and parodying the deadly consequences of not-vaccinating, vaccination memes bring to the forefront of our minds how dangerous diseases can be to our health in times when we might forget. So, as Luehrmann’s notion of ideology reminds us, memes are used to bring knowledge about social life that cannot always be generated from everyday experience (2011). For illnesses that never afflict us, or anyone we know, memes provide us with an experience of the imagined suffering of others.

In almost all memes, Anti-Vaxxers are presented as irrational or crazy, but this manifests itself in different forms. One way in which the irrationality of the Anti-Vaxxer was established was by attributing a system of beliefs to them and then systematically discrediting it. This follows the same trend described previously, in which anti-vaxxers' opinions are dismissed because their knowledge is seen as insufficient or illegitimate. More specifically however, memes portray Anti-Vaxxers as fervent believers in alternative medicine and natural

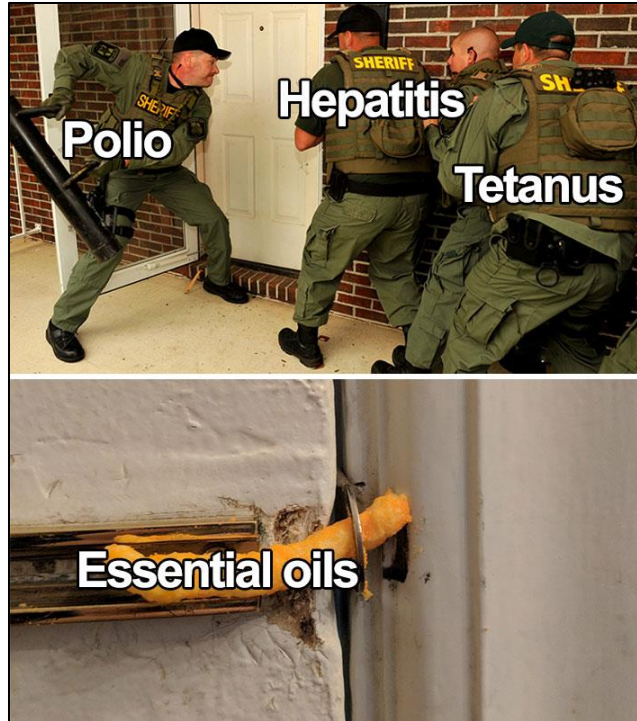


Figure 6: “Untitled” (420 Likes on Bored Panda). Essential Oils are portrayed as a simple Cheeto barring the doors of our body from the battering ram of infectious disease.

remedies instead of the “trusted” allopathic medicines that we-the-mainstream-society hold dear. These alternative medical beliefs are systematically parodied and ridiculed. A common tactic has been to collapse and semiotically link all alternative medical belief systems into the infamous “essential oil” craze. Memes portray the futility of these “natural” cures in the face of deadly disease (Figure 6), and again, the audience member is expected to shake their head and wonder what on earth the anti-vaxxers are thinking. How could they use these flimsy, technologically primitive, and unscientific remedies, and expect them to combat powerful, well-equipped, diseases? Clearly, there must be something wrong in their heads: their logic is flawed, and they are deeply irrational.

Logics of risk and risk evaluations are also prominent features in vaccination discourses²⁷, as is evident by Jim Carrey’s position against vaccination discussed earlier. Carrey’s concerns allegedly stem from the concentration of mercury in vaccines, which

²⁷ The idea of risk has frequently been the focus of anti-vaccination research. Anthropologists have sought to understand how non-vaccinating individuals perceive health risks and how this perception might be a reflection of specific cultural values (Atlani-Duault & Kendall, 2009; Brunson & Sobo, 2017; Leach, 2007).

My anti-vaxx mom: I didn't get my son vaccinated and he is still a healthy teenager

My dad, who got me secretly vaccinated:



Figure 7: “Untitled” (554 Likes on Bored Panda). The father is played by the role of character Jim Halpert, from the American TV series *The Office*. Jim is widely considered to be the main protagonist of this show, and plays the relatable, *reasonable* man in a show full of otherwise eccentric characters.

he believed to be harmful, especially to young children. His opposition countered this concern by saying that not only have mercury-based preservatives been removed from vaccines, but that they were never even harmful to begin with; they were a very different chemical formulation of mercury which was non-toxic to humans (Kluger, 2015). For Carrey (and many other anti-vaccination activists) the perceived risks associated with vaccinations—be they through chemical toxins within vaccines or negative outcomes associated with vaccination such as autism—do not outweigh the risks of disease they

claim to prevent. These rationalities through which vaccination dissenters allegedly judge risk are frequently the subject of memes, depicting Anti-Vaxxers as (foolishly) hypersensitive to risk. Again, the Anti-Vaxxer is depicted as irrational when compared to objective biomedical scientific rationalities of risk calculation.

Finally, I would be remiss if I did not mention the gendered component to vaccination memes. In many, the demonized individuals were not only labelled as “anti-vaxxers,” but more specifically as “anti-vaxxer *moms*.” Memes portray the irrational behaviours associated with anti-vaxxers as being partially due to gendered differences in rationalities, with women being more emotional and less inclined to follow “objective” reasoning. Such arguments are unfortunately not new, but they may take on new forms when entering into the family dynamics of vaccination. One meme provides an interesting depiction of these gendered family biopolitics (Figure 7). The meme tells the story of a family with conflicting vaccination beliefs: the irrational “anti-vaxx mom” does

not want to vaccinate her son, but the father (the heroic protagonist of the story) had their child vaccinated behind the mother's back. The child is believed to be healthy because of the actions of his heroic father²⁸. The image of the meme conveys the “smug knowingness” of the father in relation to the ignorant, over-protective, and irrational nature of the “anti-vax mom”. Such a portrayal might be echoed in prominent legal battles between divorced parents and their child's vaccination status (see Quenneville, 2021).

A Vaccination Ideology

The notion of a moral panic is useful to describe how a very specific kind of discourse is structured, and how actors and objects in this discourse are framed. A moral panic creates a polarized discourse: a group of deviants—the folk devils—are framed as a homogenous group of individuals whose way of life is depicted as being in conflict with the values that we-the-homogenous-mainstream-society hold dear. They become synonymous with such an unambiguous source of evil that it becomes easier to separate them from ourselves: they become deviants whose behavior justifies repressive and coercive measures (Cohen, 2002, pp. 93–95). It is clear that Anti-Vaccination beliefs are symbolically linked to a much larger evil. Not only is the anti-vaxxer movement a threat to the public's health, but it is indicative of extremist political beliefs, anti-biomedical views (and irrationality more broadly), and perceived moral failings.

Much like mainstream media coverage, memes depict a vast array of social representations for classifying anti-vaxxers and understanding their motives. The regularity and frequency of these representations leads me to believe that they have become part of a vaccination ideology. This set of social representations is embedded at the heart of the Vaccination Narrative. Through this system of belief, people who do not vaccinate are unanimously given the label of Anti-Vaxxer. They are framed as sickly and vulnerable to disease and even condemned for death. Their selfish beliefs are seen to cause great harm to their (innocent) children. In this ideological system, Anti-Vaxxers are

²⁸ Interestingly, in this example the father and son use the same kind of anecdotal evidence and circular logic which is vilified by the ostensibly irrational “anti-vaxx mom”.

represented as irrational: as illegitimately disagreeing with research institutions and the scientific method itself, rejecting the highly esteemed biomedical paradigm of health in favour of alternative medicines, and as using a paradoxical, emotionally infused risk assessment instead of a scientifically sound and objective calculus. In this ideology (hetero)normative gender dynamics are incorporated into assertions of scientific credibility. Women are seen as the caretakers of children and the responsibility of vaccination is placed on their shoulders. The unvaccinated children are therefore represented as a *woman's* problem. Through this gendered lens, men can take it upon themselves to protect their children by getting them inoculated without the other parent's permission—protecting them both from disease, but also from their over-bearing mother. The ideology transmitted through vaccination related memes carries with it several assumptions about the ontology of non-vaccinating people and vaccination science.

The vaccination memes I have shown above can be seen as ideological messages made by a specific kind of person—one who might see themselves as the protagonist in the Vaccination Narrative. They agree so deeply with the ideas, values, rationalities, and representations that this ideology contains, that they have gone through considerable effort to create these packages of grassroots propaganda and disseminate it for others to see. These people appear to promote vaccination unconditionally and, ironically, may be just as blind to scientific findings as the anti-vaxxers they oppose. They are avid devotees of the biomedical paradigm and technoscientific interventions. They have a highly fictive imaginary of science and how it works, which involves test-tubes, technology, and men in white lab-coats. Finally, they may subscribe to more conservative or heteronormative gender norms. I suggest this is a new kind of person, constructed in relation to the anti-vaxxer and imbued with specific traits and abilities: they are a “Pro-Vaxxer”.

While some of the memes shown were derived from, and made for, specific online communities, we can see that they often travel farther afield. Memes propagate and are circulated through different communities. We might see them as we scroll through our feeds, along with moralized and “inflammatory” (Hausman, 2019, p. 36) reports of anti-vaxxers from mainstream news. This affectively charged and monologic discourse permeates every aspect of my online life, entering into comment chains and forum posts as well as everyday conversations. These messages become a regular part of

my quotidian experience and I can feel the urge to naturalize these ideological tenets as fact. The worldview that they transmit may become the *de facto* way in which I—and perhaps others—think about vaccination, and it brings along with it a slew of character stereotypes, assumptions, and identifiable plots. As Hacking has argued (1986, 2002, 2006), humans can come to inhabit these labels: we can take on the traits associated with a characterization and can experience the world through this lens. More than just discursive constructs then, the categories of “Pro” and “Anti” Vaxxer become ontologically significant, creating ways in which people view and experience the world. The vaccination narrative that I have tried to articulate allows the audience to position themselves within this doctrine, and through the process of interacting with this discourse, we can *become* “Pro-Vaxxers”.

Perhaps what makes these memes most intriguing is that they are created by anonymous individuals. Unlike news media (which is part of an organization) or policy documents (part of an institution), memes represent a sort of “grass-roots” initiative for people to disperse ideas. Davidson argues that memes are the product of behaviour or sets of practices performed by an individual—they are *created by* someone (2012; Yoon, 2016). Not only are Internet Memes ideas then, but also artefacts and the product of social behaviours—acts or practices of “meme making” by agentive social actors. This has profound theoretical implications. The fact that these memes which support a certain framing of vaccination—which sees vaccination as a social process that is morally “right”, anti-vaxxers as ignorant, and scientists/physicians as the sole arbiters of fact—are generated by anonymous individuals shows how this narrative is not only impressed onto individuals, but it is actively preached and reified by them. This is exactly what Sherry Ortner discusses in her idea of practice theory: not only can regimes of power be imprinted onto individuals, but those individuals can serve an active role in supporting, subverting, or augmenting those regimes of power (2006). It epitomizes Foucault’s idea of biopower: that complex and intertwined matrix of power in which populations are simultaneously governed at the population level by various institutions as well as disciplined at the individual level by one other (Hanna & Kleinman, 2013, pp. 28–29). It contradicts Heller’s argument that this narrative is sustained by health professionals alone. The Vaccination Narrative is not something that exists “outside” of us, it is an

embodied narrative, which creates character archetypes that we can fit ourselves or each other into (Hacking, 1986, p. 161, 2002, 2006) as well as structured plotlines for us to follow and which organize our actions (Mattingly, 1998).

Chapter 3: The Vaccination Narrative and the B.C. IPP.

In this final section, I show the ways in which this pervasive and penetrating narrative has impacted the debate over the B.C. IPP. However, I also point out a number of ways in which various actors in the B.C. IPP resist or subvert the Vaccination Narrative. After all, this case is anomalous *because* of its strong resistance by disease experts and health workers. First, I discuss how the symbolic construction of the Anti-Vaxxer and the moral panic surrounding vaccination resistance have penetrated health research, sculpting how non-vaccination—and more importantly, non-vaccinated people—are framed. I also show how different actors in the B.C. IPP controversy have positioned themselves in the context of the Vaccination Narrative to give their voice more credibility. Second, I show how and why this controversy, led by health professionals, in many ways supports the Vaccination Narrative. By scrutinizing which expert voices are seen as valid and which are condemned as hearsay, I discuss how the image of the “legitimate professional” has been constructed in B.C., as well as the characteristics this image shares with the protagonists of the Vaccination Narrative. Lastly, I draw on a broader field of anthropological literature to show why the Vaccination Narrative might hold such a significant sway in politics and health.

The Irrational “Anti-Vaxxer” in Health Research and Policy

The effects of the Vaccination Narrative are manifold. In this narrative, “anti-vaxxers” are depicted as a homogenous group of individuals and symbolic attributes are applied to the group indiscriminately. In the scientific literature, these figures have been heavily problematized. A new name has been developed to classify this phenomenon, “vaccination hesitancy” (Macdonald, 2015), which purportedly reflects the spectrum of an individual’s willingness to vaccinate²⁹ (Dubé et al., 2016). This new terminology recognizes that there might be structural reasons, such as a lack of access to vaccines, that

²⁹ Some authors have critiqued this category however. For example, in his work on non-vaccinating parents in Jerusalem, Kasstan argues that “hesitancy” incorrectly describes how confident many parents were with their decision not to vaccinate (Kasstan, 2021). Implying that this group of people is cautious or unsure denies the agency that they are exercising in deliberating and making this important bodily decision.

affect an individual's vaccination status which exist outside their control (Macdonald, 2015). More problematically, the term has recently been used by health experts to denote a sort of behavioural or psychological condition. For example, in 2019 the World Health Organization listed vaccination hesitancy as one of the top ten threats to global health—marking the first time a health-related *behaviour* was listed alongside diseases such as cancer, dengue, and Ebola (WHO, 2019).

Despite this new terminology to re-categorize non-vaccinating individuals, many of the assumptions about non-vaccinating people contained within the Vaccination Narrative remain in the influenza literature. New psychological frameworks have been constructed to understand and intervene on vaccine related behaviours, drawing on rationalistic approaches such as the Theory of Planned Behavior (Betsch et al., 2015; Macdonald, 2015; Prematunge et al., 2012; Schmid et al., 2017). These frameworks continue to frame vaccine hesitancy as irrational—there is rarely a time when it is deemed “rational” not to pursue vaccination. Despite epidemiological literature describing the reasons why healthcare workers might not be interested in receiving the influenza vaccine³⁰, health interventions are still designed with the presumption of an ignorant or uneducated recipient, focusing on improving awareness of vaccines and vaccine preventable diseases, as well as improving patients' access to these vaccines (Jacobson Vann et al., 2018; Thomas & Lorenzetti, 2018). Under the belief that all non-vaccinating individuals are irrational, any concerns they may have about the safety or efficacy of vaccines are delegitimized—effectively excluding them from debates about the appropriateness of vaccination policies. This is exemplified in the B.C. IPP debate, with several scientists fearing the repercussions of speaking out against the policy—even wishing to remain anonymous when interviewed to preserve their professional credibility. The Vaccination Narrative reduces the ability of experts to question vaccination without being dismissed as an Anti-Vaxxer” —with all the connotations of anti-science and irrationality this term has acquired.

³⁰ In the context of the B.C. IPP, the B.C. CDC even conducted a study to evaluate the reasons why health care workers resisted vaccination. The reported reasons ranged from beliefs that the vaccine is not effective, a lack of concern of the flu itself, and/or political disagreements with the nature of mandatory vaccination policies (B.C. CDC, 2017).

However, many experts have found ways to articulate critiques of vaccination programs in spite of the pervasive discourse supporting vaccination. In their writings and interviews, many make sure to discursively distance themselves from the stereotype of the Anti-Vaxxer. For example, Gardam and Lemieux’s critique of mandatory flu vaccination policies, explicitly states that *they* always receive the flu vaccine voluntarily:

Like others in our field, we get vaccinated against influenza each year, despite the vaccine’s shortcomings, and we strongly encourage other health care workers to do the same. We are actively involved in our organization’s annual influenza vaccination campaign. However, we are uncomfortable taking the next step of compelling vaccination given the considerable limitations of the current vaccine (2013, p. 640).

The authors are clear that they are not against influenza vaccination—even going so far as to describe the many ways in which they support vaccination campaigns. They cushion their critique against mandatory vaccination (a move which might otherwise brand them as Anti-Vaxxer) by positioning themselves as heroes in the Vaccination Narrative.

Gardam further clarifies these comments in an interview with the *CBC*:

I am not anti-vaccination, I am clearly for vaccines—getting the flu shot is better than nothing... Where I am drawing the line is saying: if this is the battle you want to fight, you have got to be careful because the vaccine is really not that good and you will open a lot of doors you don’t want to open. (Chai, 2013 para. 4)

Here he explicitly states that he is not “anti-vaccination”, instead positioning himself as a sort of benevolent prophet, warning vaccine supporters about the potential dangers that might arise by mandating a substandard vaccine³¹. The character that Gardam positions himself in is thus a supporter of vaccination who critiques these interventions only so that they can be made better in the future—thus launching his criticism while still being a “protagonist” in the Vaccination Narrative.

This rhetorical tactic is not only used by physicians and researchers like Gardam. The leader of the BCNU, Gayle Duteil, also carefully articulates her position, trying to delineate herself from the discursive category of Anti-Vaxxer. In her letter to B.C. health

³¹ Although it is not exactly clear what dangers Gardam has in mind with this prophetic warning (or perhaps even threat), they could range from things as tangible as legal action (as we have seen in Ontario and B.C.) to things as intangible as a breakdown of trust between physicians and the public.

authorities, she reminds her audience that she is not personally against vaccination, arguing that “I personally will continue to receive and advertise my influenza vaccination. [The BCNU] hope we may work with you on initiatives such as these rather than spending time, energy and money disputing an ineffective policy.” (Duteil, 2015 para. 5). Like Gardam, Duteil makes it clear that she has nothing against the vaccine itself and that she is more than willing to exert her own agency to take it. But for Duteil, this decision is personal and it is inappropriate (even illegal) for health authorities to make this decision on behalf of healthcare workers. Instead of an immoral Anti-Vaxxer, Duteil portrays herself as someone who cares deeply about ethics and the law. Moreover, she softens her lack of support for vaccination by ending her critique with an offering to work with health authorities to find alternative ways to manage the problem of influenza. Instead of being a proponent of vaccination programs per se, she positions herself as a protagonist in a broader crusade against disease.

I too experience the challenge of positioning myself within this narrative. When I describe my project to my colleagues, family, and friends, I can feel them trying to figure out where I stand in the debate—or perhaps more specifically, how they should categorize me in light of the vaccination narrative. Can they safely position me as someone who supports vaccination? That my research is an attempt to uncover why healthcare workers might resist such an intervention (and how we might convince them that it is in fact the rational decision)? Or am I actually an Anti-Vaxxer, who is against this instance (perhaps *all* instances) of mandatory vaccination? These moments of interpellation, some implicit and some explicit, are not only meant to uncover how legitimate my work is, but they pressure me into taking a “side” in this dichotomized discourse. Through these questions, I am thrust into the Vaccination Narrative. I feel like I must write and research this topic from the position of someone who unequivocally supports or rejects vaccination. In many ways, this thesis has been a therapeutic endeavour for myself to explore how I am positioned—and how I position myself—within this dichotomized discourse. I have had to reorient this narrative to make space for myself, someone who is trained in public health and who believes in the healing power of vaccination, but who is also attentive to the moral and scientific nuances of vaccination

programs and science. Like Gardam and Duteil, I have had to work within the tenets of the Vaccination Narrative to ensure my voice is heard as legitimate and rational.

Legitimacy and Expert Authority

Although the Vaccination Narrative’s powerful discursive pull has affected many aspects of the B.C. IPP debate, there are many characteristics of this controversy which refute the narrative altogether. Most obvious is the fact that the opposition to the policy comes from experts within the realm of health who are much harder to dismiss as irrational or misguided. Unlike people or groups who oppose mandatory MMR vaccinations for public schools, the media has given much more credence to concerns about the influenza vaccine and the conflict over the B.C. IPP—even interviewing dissident physicians such as Gardam or publishing Skowronski’s anxiety provoking findings about the reduced effectiveness of the seasonal vaccine. Health organizations in Ontario have fought against such policies and outright won, and in 2019, the BCNU and other health worker unions celebrated their own victory against the B.C. IPP, coming to an agreement with the provincial health officer in which the purportedly punitive component of the policy (mask wearing) would be suspended (BCNU, 2019). At face value, the case of the B.C. IPP seems to actively refute the core premises of the Vaccination Narrative.

One reason why these opponents of the B.C. IPP might be seen as legitimate and worthy of media and other public attention is precisely because of their status as “health experts”. Instead of the archetypal villain in the Vaccination Narrative—the uneducated and uninformed “anti-vaxxer” —many of the challengers to this policy have some serious academic and professional credentials: Gardam is a trained doctor and academic who has worked with many prestigious organizations; Skowronski is a world famous flu epidemiologist who has revolutionized how the effectiveness of flu vaccines are tested; and the BCNU is a recognized union which protects a vast number of workers. These voices and the truth-claims they make are treated differently than the claims of stereotypical dissenters.

The role of physicians in this controversy is particularly telling in this respect. More than other health workers, physicians hold a special position of power and privilege

in Canada. This position of power has recently been explored by scholar Helen Kang, who discusses how physicians in Canada have rhetorically positioned themselves as the de-facto scientific and moral experts of health (2019). As Kang puts it, “they often have high incomes, have respectable careers as professionals, and are recognized by the state, the media, and the legal system as experts whose statements about health and illness have tremendous value and credibility” (2019, p. 4). In other words, because of several critical moments over the past century, physicians hold a massive amount of social and economic capital in Canadian society, as well as a comfortable degree of autonomy in their professional conduct.

Key to this autonomy is their perceived ability to balance their own self-interests—their higher than average income and competitive profession—with a cultivated professional “disinterestedness”. This disinterestedness ostensibly allows physicians to make decisions for the “good of the public” that are free from personal conflicts of interest. They are thought to occupy so heightened a moral position that they are capable of overcoming their own personal interests, such as monetary gain or professional status, to discipline themselves. The ability to remain disinterested and detached has been a key characteristic that has led to physicians’ ability to self-regulate through professional colleges rather than through State run regulatory bodies. But this disinterest was also important in legitimating their work as “objective” science. By controlling the subjectivity of their gaze and following established procedures of observation, they aimed to remove any internal biases and produce accurate representations of outer worlds (Kang, 2019, p. 11). The position of “invested disinterestedness” (2019, p. 15) has therefore enabled physicians to occupy an exalted moral and scientific position in Canadian health debates, allowing their critiques to carry far more weight than others.

Physicians have long used this cultivated position to legitimate themselves as the experts of health related matters instead of their competitors. Early depictions of physicians in Canada portray themselves as “a noble group of ‘medical men’” who had earned the privileged expertise of overseeing matters of health and disease compared to other medical practitioners (what we might now call “alternative” medical practitioners) such as homeopaths and other “quacks” (Kang, 2019, p. 6; see also Starr, 2017). McTavish argues that 19th male midwives were often seen as more theoretically

competent than their female counterparts, and used this gendered quality to gain legitimacy in a traditionally female profession (2005). Here, we can see the moral and gendered components of the Vaccination Narrative bleed through: these ideas of “medical experts” echo the themes depicted in vaccination memes. *To be* a health expert is to subscribe to a particularly moral and gendered system of knowledge.

But although *individual* physicians have spoken out against mandatory flu policies, physician *organizations* across B.C. and Canada have unequivocally spoken in favour of them. As I described in Chapter 1, the CMA, CMPA, and the editors of the *BCMJ* have all reminded both the public (as well as health practitioners themselves) that physicians are the moral beacons of their communities, and receive the influenza vaccine willingly each season. The stories these organizations mobilize echo the Vaccination Narrative: to be a “good” moral figure is to receive and support vaccination. The fact that some physicians might be opponents of vaccination policies is especially important to these professional groups because their claims to self-regulation are based on the fact that they can conduct themselves morally. To have Anti-Vaxxers among their ranks would fundamentally challenge physicians’ moral and scientific authority as a whole—threatening their claims to self-regulation. So although individual physicians may be able to critique vaccination, the group as a whole *must* obey the tenets of the Vaccination Narrative, or else they may jeopardize their professional autonomy.

The tensions over professional legitimacy are also exemplified in the B.C. IPP controversy, and one particular case offers a telling example of how the Vaccination Narrative informs which voices are allowed to offer critiques. In 2018, the vice-chair of B.C.’s Chiropractic College, Avtar Jassal, posted a video on his Facebook page claiming that fresh smoothies and juices offered better protection from the flu than vaccines (Lindsay, 2018a). Unlike the critiques lodged by physicians or epidemiologists, reporting of this claim portrayed the speaker as a liability rather than an expert. Bonnie Henry was cited, saying “[the chiropractic college] should sanction him for making anti-vaccine comments and should remind him that it is not within his scope of practice to be doing that” (2018a, para. 3). A nursing professor from UBC, Bernie Garrett, was quoted saying “the statements made by the chiropractors are basically pure, grade-A bunk, but, sadly, this is becoming more commonly seen with anti-vaccination rhetoric... I think it’s

dangerous and irresponsible and represents a set of magical beliefs rather than science-based ones” (2018a, para. 15). Beyond a liability, Jassal has been rhetorically fixed as an “anti-vaxxer”. Perhaps unsurprisingly, Jassal stepped down from his position in the Chiropractic College the day after the article had been published (Lindsay, 2018b).

Garrett directly relates the idea of expertise to self-regulation³², arguing that the fact that alternative medicine groups are self-regulated in the same way as nurses’ and physicians’ colleges makes them seem more legitimate than they actually are:

It makes sense to regulate them in a different category ... because otherwise people get confused, and they think a doctor is a doctor. They don’t realize a physician is quite a different level of skill, training and educational preparation, compared to someone else who’s called a doctor who’s really a naturopath or a chiropractor. (Lindsay, 2018a, para. 18)

Here we see both physicians and nurses delineating themselves from alternative medicine. While some experts participate in evidence-based science, the chiropractor-qua-anti-vaxxer peddles in “magical beliefs”. Although both are currently allowed to self-regulate, the ability of some professionals to remain interest-free and morally responsible has been called into question. Nurses and physicians are depicted as legitimate experts, while practitioners of alternative medicine are considered a fraud; a spreader of misinformation; that “snake oil” salesman or purveyor of essential oils, oh so common in the Vaccination Narrative.

Ideology Informed Intervention

I am not necessarily against vaccination, nor is the goal of this thesis to debate whether or not we ought to implement vaccination policies. However, it is important to acknowledge that health interventions are inherently *interested*: these interventions are political, and make sense in light of particular ideologies and ideas about health and disease that are relevant at the time (Tesh, 1988). As I have shown, the Vaccination Narrative carries with it a set of ideas and representations about health, science, and

³² Far from being alone in this sentiment, Garrett levies this critique alongside other literature writing against naturopathy and alternative medicine in B.C. and Alberta (see for example Caulfield, 2016; Caulfield et al., 2017).

expertise, and this ideology permeate the discourse of local vaccination debates—including the B.C. IPP controversy. But in addition to its own narrative rationality, the Vaccination Narrative is also deeply entangled with another set of ideas which penetrate virtually all aspects of life around the globe. The model of health that holds vaccination as the de-facto intervention for disease management is deeply tied to a broader trend towards a neoliberal (Harvey, 2007) approach to health. In this final section, I show how two traits of vaccination-as-public-health-intervention support the core tenets of neoliberalism: that vaccination is seen as an economically effective way to manage disease and that it mobilizes technological solutions to illness. The fact that the Vaccination Narrative supports neoliberal ideologies makes it more appealing to governments, officials, and parts of the public sphere.

The relationship between economic or state interests and public health is not new. Since the intervention's inception, vaccination has been seen not only as a method of preventing disease, but also as a way of improving *productivity*. Although there are examples of this from the 17C onwards, the intermixing of politics and health is perhaps best exemplified in 20C colonial projects. During this period, European empires were struggling with how to manage their growing colonies, many of which were situated in tropical climates and subject to infectious diseases. To control their populations, colonial powers turned to a specific kind of medicine—what has now been coined “Colonial” or Tropical Medicine. Unlike other forms of care which prioritize the wellbeing of the patient, the main interest of colonial medicine was in the productivity of the labour force (Feldman-Savelsberg et al., 2000). Vaccines were developed and forcibly administered for diseases that especially affected an individual's capacity for (physical) labour such as sleeping sickness (Tousignant, 2012), smallpox (Trankell & Ovesen, 2004) and leprosy (Feldman-Savelsberg et al., 2000).

These colonial values exist in many contemporary discussions about vaccination. For example, Hausman describes how varicella (chicken pox) went from being seen as a “mild disease” of childhood to a disease worthy of public health intervention (2019, p. 145). In 1996, the US CDC justified its universal recommendation for childhood varicella vaccination based on the indirect factors of a cost-benefit analysis: when looking at direct effects such as hospitalizations, the vaccine would only net 94 cents for every dollar

spent on the vaccine; however, if this analysis were broadened to include the indirect effects, such as the lost wages of parents who had to stay home and take care of their child, the vaccine would gain \$5.40 per dollar spent. Researchers analyzing the cost-benefit ratio conclude their report by saying,

We have not attempted to place a value on the intangible costs of pain and suffering from varicella or to convert costs of morbidity from chickenpox and nonfatal complications into quality-adjusted life-years. Instead, the results allow the reader to explicitly evaluate these goals of a varicella vaccination program... A routine varicella vaccination program for preschool-age children will not save money from the health care payer's perspective, but would still be desirable and would save money from the societal perspective (Lieu et al., 1994; as cited in Hausman, 2019, p. 146).

Here we can see how “cost-effectiveness” has become a substitute for tangible health outcomes in vaccination program analysis. The messy or subjective measures of chicken pox—the “pain and suffering” —have been replaced with the readily calculable and commensurable numbers of the dollar sign. Instead of treating *disease*, this intervention treats the *economy*. Although it is thinly disguised as a health intervention, in this case, vaccination is a way to save money at the societal level.

Varicella vaccination is certainly an extreme example of how vaccination has become inextricably linked with economics, in a political landscape that sees economic impact as a key indicator of an intervention's viability, the “cost-effectiveness” of vaccination campaigns might be one way to explain their popularity (Ozawa et al., 2012; Packard, 1997). As I have shown in chapter 1, one of the three goals of the B.C. IPP was to reduce worker absenteeism during the flu season. Researchers have analyzed the policy and found that it is indeed “cost-effective” and that it saves health authorities “substantial money” by reducing absenteeism among vaccinated workers in the winter months (Van Buynder et al., 2015). Although scientists, epidemiologists, and health workers argue about the health benefits (or lack thereof) of the B.C. IPP, the policy can also be understood as a deeply *economic* intervention which saves health authorities and the government money.

Inter-related with this impetus to maximize both health outcomes and productivity on a broader societal level, there has also been a global trend towards technologically supported interventions (A. E. Clarke et al., 2003; Sassower, 1993; Wehling, 2011). Like the intermixing of economics with health interventions, this trend has historical origins that are worthwhile exploring. Tesh argues that the fervour for technological solutions to disease is intimately linked with the germ theory of disease, now synonymous with modern biomedicine (1988, p. 36). This paradigm of health sees disease as the product of micro-organisms: viruses, bacteria, and other pathogens that can penetrate the human body and evoke clinical symptoms. The legitimacy of this theory grew throughout the 19C after several ground breaking studies by microbiologists and physicians, such as Louis Pasteur and Robert Koch, but it was in the mid 20C that the power of this paradigm to inform disease prevention reached its peak. By linking diseases with their associated pathogens, scientists were able to synthesize treatments and preventative concoctions to target those particular micro-organisms, creating antibiotics, antivirals, and new vaccines to protect or cure human bodies from illness.

While these innovations were originally publicly funded, throughout the last half of the 20C, vaccine and drug development became increasingly privatized (Blume, 2008; Blume & Geesink, 2000). Instead of being a health-related technology, vaccination became both an essential component and product of the biotechnical industry. Vaccine development is now intimately imbedded within a broader biopharmaceutical innovation system (Huzair & Sturdy, 2017), composed of a startling number of different actors in a “chimeric” (Nading, 2015) melange of public and private interests. In this complex and multi-faceted field, the health of the public is just one concern among many, and may be bracketed among other issues such the market for vaccines (Huzair & Sturdy, 2017), the potential for donor funding (Nading, 2015), and international goals (Graham, 2016). The prominence of vaccination-as-intervention has fundamentally altered health systems, creating infrastructure to manage the dispersal of this technology. As Leach and Fairhead write, “vaccines are a uniquely routinized biomedical technology insofar as they aim to reach every child on the planet, enabled by a particular ‘technocracy’”(2007, p. 7). Due to its widespread popularity and success, vaccination has become an integral part of health systems and paradigm of disease management. Ways of implementing this intervention

have become built into the discipline of medicine and public health. It should hardly come as a surprise that vaccination seems like the “common sense” solution to control disease—this technology has become an integral part of the many peoples lives.

But once again, this approach has political implications. Since biomedical research is usually empirical—performed in the lab or through clinical investigation—it is seen as “real” science, and those who practice it are held in high esteem. As Tesh points out, “the germ theory is virtually synonymous with science. It evokes images of white coats, sophisticated laboratories, dedicated researchers, and the relentless search for truth” (1988, p. 38). This imaginary of medical science is eerily reminiscent of the scenes depicted in the vaccination memes I discussed in the previous chapter—with men in white coats heralded as the true gatekeepers of medical knowledge. It also reflects the privileged position of the so-called “objective” empirical scientists and practitioners in the B.C. IPP debate. Moreover, technical solutions present a way to manage disease without addressing the fundamental social systems which allow disease to thrive: “by locating the cause of disease in a micro-organism, [scientists and health personnel] keep the problem of disease prevention in the laboratory. From this perspective, health is a technical problem, not a social problem” (1988, p. 39). Heller hints at this relationship as well in his work, discussing how the implementation of mass vaccination campaigns eliminated the need to address the underlying structural determinants of health such as housing, nutrition, fresh air, and working conditions (J. Heller, 2008, p. 155). However, his work does not analyze how this component of vaccination fits into broader power dynamics and ideological trends. Vaccination campaigns and mandates might be particularly sought after by those in power because they provide a way to address health concerns without drastically altering or challenging the status quo.

The trend to economic and biotechnical solutions in medicine and public health present strong reasons why vaccination was seen as the only real way to control influenza in B.C. care facilities. Together they represent a growing trend of neoliberalism in health in which interventions are constructed to treat illness—and even society more broadly—as a technical problem that can only reasonably be resolved through technological mechanisms. Through this biotechnological rationale, one might understand why the strategies pushed forth by the BCNU have not been implemented: they call for profound

structural changes such as more sick days for workers, changes to hospital structures to reduce over-crowding, and other hygienic interventions. These are strategies which seem less efficient than vaccinating workers. Unlike vaccination, these changes disrupt the status quo by reorienting our hospital structure, increasing the benefits of health care workers, or fundamentally re-shaping how we think about health.

* * *

This analysis has demonstrated many ways in which the Vaccination Narrative has impacted the B.C. IPP debate—and other debates around vaccination more broadly. This narrative influences our thoughts and actions. It tells us that anyone who resists vaccination is fundamentally misguided and this assumption informs scientific inquiry and public health practice. At best, non-vaccinating individuals are treated as if they lack information to make the right decision, at worst, they are branded as irrational—incapable of making informed health decisions and thus requiring regulation (ie mandatory measures) from an external source. This story has the power to decide whose voice is legitimate and whose is not. It causes critics to go through great lengths to differentiate themselves from Anti-Vaxxers so that they are not dismissed and vilified. The case of the B.C. IPP is an interesting example in light of this monologic narrative because, at face value, it seems to refute many of the core tenets of the Vaccination Narrative. Many critics of the B.C. IPP are researchers or health professionals, not the irrational or misguided groups depicted in the larger narrative. Upon further analysis however, I have shown how this resistance in the B.C. IPP controversy support parts of the narrative as well. The Vaccination Narrative privileges the “objective” scientific (and masculine) voice, and so it is unsurprising that the media has given more credence to health professionals and lab or epidemiological researchers. This point is especially clear when we see how other critics of the policy, such as Avtar Jassal, have been framed.

I have also demonstrated how the Vaccination Narrative is inextricably linked to broader trends in health and politics around the globe. This narrative surrounds an intervention that is tightly related to both economics and the changing paradigms of health—both of which are part of a larger process of neoliberalization. Recognizing that vaccination is an intervention informed by prominent ideologies and trends does not

render this intervention obsolete or futile. Underlying motivations for any intervention abound. However, uncovering the structure of this narrative and becoming conscious of the different tropes, plots, and ideologies that it propagates, allows us to make better informed judgements about the intervention itself. It's not that looking for a cost-effective solution to disease is wrong. I am sure that most people think about costs in their daily lives, and most can agree that costs present an important barrier to implement any intervention.

But by becoming aware of the tendencies this narrative produces, one can begin to consider the values that factor into these cost decisions. If the goal of the B.C. IPP is to save costs from absenteeism, where—or to whom—is this money going? This facet of the political economy of vaccination must be made clear and transparent by health organizations and State governments alike. Likewise, the germ theory of disease is an amazing paradigm for studying and treating disease, but it ignores many important factors that can contribute to health and wellness. This view privileges allopathic medicine and promotes a culturally specific and hyper-individualized notion of health. Through this perspective, the justifications for the B.C. IPP have been limited at best and at worst, disingenuous. Far beyond a simple mandatory policy, this intervention was the product of myriad factors, ranging from prominent trends in health practice to the political economy of the provincial health system, and from the struggles of health experts for legitimacy to the ideological representations espoused by the Vaccination Narrative.

Conclusion

The experience and articulation of the Vaccination Narrative outlined here is important because this narrative comes into play for virtually all infectious diseases, not just one influenza control program in B.C. In health conferences, vaccines are frequently discussed, and portrayed as the best—if not the only—way to truly control diseases. In 2010, the Gates Foundation launched a “decade of vaccines”, pledging 10 billion dollars to strengthen vaccination programs in developing countries (Enserink, 2010). At an international tuberculosis (TB) conference I attended in 2019, talks and symposia about promising new vaccines were all highly anticipated, and the idea of a vaccine was mentioned offhandedly in talks that were not even explicitly about vaccination. An anticipation about this potential game-changer in managing and preventing TB (however improbable) permeated the four-day event. In a recent conference on HIV, the Chief Scientific Officer of Johnson & Johnson declared “a world without HIV needs a vaccine” (UNAIDS, 2021). In the fall of 2021, the WHO approved the widespread use of the world’s first malaria vaccine throughout Africa (Davies, 2021).

But we need not look at diseases or programs in other parts of the world to see the effects of the Vaccination Narrative. The Covid-19 pandemic has provided an opportunity to see how this story has penetrated our news feeds and daily lives. Since the consequences of this pernicious virus became apparent at a global level, vaccination has been praised as the only real way to manage the disease and resume some form of social and economic activities. Epidemiologists warned of frequent lockdowns “while the world waits for a vaccine” to save us from this illness (Alwan et al., 2020; Young, 2020). In the fall and winter months, when the second wave was peaking in the US and Canada, infectious disease physicians told us to wait for the “light at the end of the tunnel” when a vaccine would be developed and dispersed to the population (D’Amore, 2020; Sample, 2020). Acknowledging how emotionally challenging it was to stay socially distanced over Christmas, Canada’s Prime Minister, Justin Trudeau, promised Canadians a “more optimistic” 2021, citing his government’s purchase of vaccines for its citizens in the coming year (Tasker, 2020). Bonnie Henry went from describing vaccines as “one tool in the public health toolbox” early in the pandemic to *the* de-facto mechanism through

which we will overcome Covid only a few months later (ProvinceofBC, 2020; Ross, 2021). Rhetoric surrounding Covid-19 vaccines follows the same plot as the vaccination narrative I have articulated: vaccines—that “freedom fluid” (Hyde, 2020)—is depicted as the ultimate key through which we can return to normalcy. Perhaps one Canadian vaccine researcher said it best, “everyone just wants to go back to normal. You hear it in the media and everyone is saying, ‘that won’t happen until we get a vaccine’” (Anderson, 2020).

Like coverage of other vaccines, we hear talk of Covid-19 protagonists. People who enrolled for early vaccine trials are interviewed and portrayed as heroes in the news (Regalado, 2020; Stecklow, 2020), with friends or family members praising them as “brave or generous”³³ (Bambury, 2020). Workers in vaccine factories who spent their winter holidays at a pharmaceutical plant producing these sought after drugs are depicted as joyful, even though they forego vacations to work extraordinarily long hours. Although they are missing out on classically important holidays, we are told that they are happy enough working to secure a safer future for the rest of the world—even wishing each other a “happy vaccine day” instead of other common holiday greetings (Morris, 2020). News reports cover stories of crisis: freezers that break down, putting hundreds of doses at risk of expiring, but are instead saved through the tireless efforts of hospital staff who administered the soon-defunct vaccines into patients’ arms in under two hours (Chan & Maxouris, 2021). These workers are heroic on two counts: not only are they saving patients, but they are working to save the vaccine itself. The huge esteem in which vaccines are held might even allow institutions or companies who have access to vaccines to exert their social and political capital to circumvent certain lockdown restrictions³⁴. But one need not be an expert or a health worker to become a protagonist in the Vaccination Narrative. Anyone who gets vaccinated is considered a hero. They are

³³ Interestingly, although these figures are lavished with praise for taking on the risks of untested pharmaceuticals, many of them may have received these drugs for less-than-selfless reasons. For example, the Reuters reporter interviewed agreed that joining the vaccine trials was his way of helping end the pandemic, but that he also liked the idea of getting earlier access to vaccines, as well the ability to be treated by better-than-average physicians (Bambury, 2020).

³⁴ One notable case is of a UPS executive who was granted a questionable exemption to Canadian quarantine laws while coming in from the U.S. They defended their actions on the basis of their responsibility for delivering important safety supplies to Canadian businesses and consumers as well as hinting at the possibility of delivering vaccines “soon” (Gatehouse et al., 2020).

given donuts as rewards (Lewis, 2021) and “Vaccinated” stickers to demarcate themselves as ethically responsible social actors. I can still see my own sticker, faded and worn, stuck to the back of my phone—my own way of signalling where I stand in the vaccination debate.

And, of course, through the mechanisms I outlined in chapter 2, we are also reminded of the villains in the Covid-19 pandemic. Talk about Anti-Vaxxers—and their related cousins, “Anti-Maskers” —remains a constant fixture in my media and social sphere. They are still depicted as ignorant, irrational, and easily manipulated by nefarious political actors (Cillizza, 2021; Dupuy, 2020). New memes are created and shared on popular forums which reiterate the symbolic traits of the Anti-Vaxxer (Figure 8). Their failure to take responsibility for their actions is not only seen as jeopardizing their own health, but as “prolonging the pandemic” for other (vaccinated) people in the world (A. Miller, 2021). The resistance to this medical intervention is still seen as an issue of false belief and misinformation, and efforts are made to purge social media platforms like Facebook of anti-vaccination rhetoric (Bose, 2021; Jin & Leathern, 2020). Frustration with non-vaccinating people, especially in the U.S., has prompted some health professionals to advocate an even more combative stance against “anti-vaxx aggression” (Hotez, 2021). “The bad guys are winning”, we are told, and to fight them we don’t need health experts, but experts on terrorism, cyber attacks—even nuclear armaments (Hotez, 2021).



Figure 8. “My coworker put this on our office door at the hospital I work at” (a whopping 71.1k upvotes on Reddit). Posted as I wrote this section, this meme replicates the ideology which sees Anti-Vaxxers as irrational, incoherent, and anti-social.

But—as in the case of the B.C. IPP—the idea that vaccination would be the panacea for Covid-19 was deeply contested by disease experts. An article written by a well-regarded Harvard physician, William Haseltine, describes how coronaviruses are able to evade the immune system and may be particularly resistant to immunization (2020). He draws on a number of studies of non-Covid coronaviruses which showed that they “tamper” with immune memory and were capable of reinfecting individuals soon after that had already been infected. These findings, he argues, puts the entire concept of herd immunity—even if vaccine-induced—into jeopardy.

Early on in the pandemic, the prominent science journal *Nature* published an article describing how the pandemic might look in 2021. It’s opening vignette paints a dark, and eerily prescient, portrait of the future of Covid-19:

June 2021. The world has been in pandemic mode for a year and a half. The virus continues to spread at a slow burn; intermittent lockdowns are the new normal. An approved vaccine offers six months of protection, but international deal-making has slowed its distribution. An estimated 250 million people have been infected worldwide, and 1.75 million are dead. (Scudellari, 2020, para. 1)

Although the authors are sure a vaccine would be created, they remain skeptical over how much protection it would offer and deeply cynical over how well it would be distributed internationally. Like Haseltine, the authors minimize the impact vaccination will have on the pandemic, citing concerns that Covid antibodies that we produce are not long-lasting and do not provide the same duration of immunity as MMR or Polio vaccines. Although the “miracle” of vaccination may not be able to stop the pandemic, the authors argue that it will unequivocally be useful to prevent severe outcomes and limit hospitalizations. Instead of vaccination, the authors strongly emphasize behavioural strategies to mitigate this deadly virus—masking, hand washing, physical distancing, and improved ventilation in indoor spaces—and how these can continue to reduce the impact of the virus even after lockdowns end. These critiques remind us that vaccination, although extremely effective in many cases, is not without its limitations, and might be most useful at controlling diseases with low mutation rates, or ones in which the antibodies afforded to us by immunization will last for a prolonged period of time.

* * *

In this thesis I have attempted to show how science and morality can be mobilized as rhetoric to create a version of reality which simultaneously frames certain behaviours and strategies as problematic as well as justifies the mechanisms of their resolution. In the debate about mandatory influenza vaccination in B.C., a variety of social actors draw on different interpretations of scientific evidence to make claims about the nature of influenza and its control. These different interpretations and uses of scientific data show how scientific fact is inevitably culturally constructed, and how that fact becomes inherently value laden as it is legitimated through the practices, discretion, and judgements of a select group of experts (Hausman, 2019, pp. 90–94). These scientific arguments were employed in tandem with moral claims about the fundamental obligations and rights possessed by different groups to further cement one version of the truth over others. Truths about the nature of influenza in B.C. were constructed despite a less-than-tangible statistical knowledge of the virus, or of the people who carry it. Some evidence was considered worth highlighting in reports, while some was discarded as irrelevant. Moral claims about the character of health workers were levied by a number of different organizations. These truth-claims support narratives of influenza and its control, and speak to why a mandatory vaccination program should, or should not, be reformed.

I have also demonstrated how a particular narrative surrounding vaccination has become dominant and pervasive in certain social groups. I have called this discourse the Vaccination Narrative because, for me, its monologic consistency and ubiquity dominates how I think of vaccination. This is a narrative that has been conveyed to me throughout my entire education and work life—in the very public health institutions of B.C. I discuss in this research. It is apparent when I check the news, when I look at scientific articles, on my social media, and in my own social relationships. It is a narrative of modernity which depicts vaccination as the ultimate tool to fight disease and as a cornerstone to any truly developed nation. In this story, science is collapsed with morality. Those who support this narrative are depicted as heroes and agents of progress, while those who dare resist are branded as villains and evil-doers, reactionaries who resist modernity. This narrative has the capacity to organize actions into culturally understandable plots. It encourages its audience to identify as a particular character, interpellating them as a subject, and shaping

how they define themselves and how they conduct themselves in ways unique to this particular character. It allows us to become “Pro” or “Anti”-Vaxxers.

I have also shown how this narrative has the power to influence action. The set of beliefs propagated by the Vaccination Narrative sculpts how many people—including myself, but perhaps also health experts, politicians, and other figures in positions of authority—encounter vaccination. Because of the Vaccination Narrative, vaccination resistance has been portrayed as a problem of mistaken beliefs (Hausman, 2019, p. 32) in which some people are too ignorant, irrational, or misguided to understand that vaccination is a harmless and beneficial intervention. I have shown how this might have profound impacts on the way that people who resist or critique vaccination programs are dealt with, for example by treating this resistance as a psychological or behavioural condition that can be “fixed” through mass educational campaigns. The implicit message of these kinds of interventions is that the non-vaccinated person simply does not understand or care why vaccination is valuable. The construction of non-vaccination as a moral failure may also permit more stringent and punitive set of responses.

Using the example of the B.C. IPP, I have shown that this way of portraying and managing non-vaccinated people is inherently misguided. Many of the groups resisting the B.C. IPP do not fit the mould of Anti-Vaxxer as articulated by the Vaccination Narrative: they are health workers, disease and health scientists, physicians, and researchers. Far from the irrational Anti-Vaxxer depicted in the Vaccination Narrative, these are educated professionals, most of whom work in the health sector and presumably have at least a basic understanding of immunity. To make these arguments and keep their positions of authority, many critics carefully position themselves within the structure of the Vaccination Narrative. I navigate this tenuous position as well throughout this research, attempting to open up a space in this fraught discourse which permits skepticism of a vaccination program without necessarily rejecting vaccination in its entirety. Many of these resisters create nuanced arguments against the policy, arguing against a particular aspect of the science used to justify it, questioning why some concepts or problems have not been addressed by it, or even problematizing the moral basis of the policy itself. For this reader at least, these are compelling reasons to be skeptical of the B.C. IPP, and whether one chooses to agree with these reasons or not

moves away from a question of *beliefs* towards an issue of *values*—around risk, economics, and ideology. The B.C. IPP controversy is important because it shows the cracks or friction within this larger cultural narrative surrounding vaccination.

The more recent example of Covid-19 reminds us that the ongoing study of vaccination is important because it leads to very real political, economic, and health consequences. The Vaccination Narrative is ubiquitous and portrays vaccination as the only way to end the pandemic. However, it seems clear by now that even highly vaccinated countries are having issues “ending” the pandemic. What will happen if vaccination—the intervention which has been so ensconced in hopes and aspirations of a Covid-free future—fails to contain the spread of this deadly virus? Future work might study if and how the Covid-19 pandemic (like the MMR debates of the 1990s-2000s) has altered the Vaccination Narrative.

I have shown how the idea of vaccination has become intimately entangled with many other hopes, ideals, and aspirations. Vaccination has become part of a public narrative which portrays this intervention as an integral part of modernity and development. This narrative constructs vaccination as the imagined end-point of disease management: all vaccine-preventable diseases can be controlled by better uptake and dispersal of vaccines, and research should be done to transform *all* diseases into vaccine-preventable ones. I truly believe that vaccination is a miraculous technology and that it has the power to eradicate diseases, save lives, and prevent human suffering. However, I am also acutely aware that there are also weaknesses associated with this intervention, weaknesses which are certainly underemphasized in the monologic discourse supporting vaccination.

Rather than prescribing a solution to the “problem” of vaccination or its opposition, my hope is that this research can be used to remind ourselves of our own positioning in this narrative. Like other authors, my work underscores the importance of self-reflexivity in public and global health practices. It stresses the importance of questioning those long-held assumptions and the values that are closest to our hearts. Reflexivity in the context of the Vaccination Narrative asks individuals how they might reify this discourse, and how their actions might be guided by and simultaneously support this story. These actions range from things as large as instituting a mandatory influenza

policy, to things as miniscule as liking and sharing a meme on your social media account. Instead of seeing vaccination through the binary lens propagated by the Vaccination Narrative, this reflexive approach would allow room for nuance: in differentiating between different vaccines, different contexts, and in a more complex sphere of reasons surrounding vaccine acceptance and refusal.

I acknowledge that this approach to open up vaccination discourse might seem anxiety provoking—even dangerous—to many people. By rejecting binaries, “Pro” or “Anti” vaccination, or the numerous tropes held within the Vaccination Narrative, we come to occupy a more aqueous space in between. Being in this liminal, uncharted position, might be difficult for some: this discourse feels less organized, our subject-positions less defined, and our ethics uncertain. Throughout this research, I have often caught myself slipping into this liminal space between these two poles—at different points I have felt sympathy for supporters and opponents of this intervention. This experience has not always been comfortable. However, I argue that this discomfort and uncertainty form the bedrock of a more nuanced stance which forces a reflexive questioning of our views.

If we start to understand the Vaccination Narrative as a combination of truths and fictions—something constructed partly out of scientific facts, but also out of a set of values and beliefs—then we might be better able to understand this intervention’s strengths and weaknesses. Focusing on this one way of disease management and prevention obfuscates other ways of thinking about and treating disease. As Gusfield has shown, by uncovering how one way of thinking about an apparent consensual issue has been socially constructed, we can start to imagine how the world could be otherwise (Gusfield, 1981). In seeing the ways in which the Vaccination Narrative constructs people, institutions, science, and medicines, we can start to imagine how this could be different. Perhaps not all people who resist vaccination programs fit the discursive category of Anti-Vaxxer, and maybe the reasons they have for resisting these programs are worth thinking about.

References

- Adams, T. E., Holman Jones, S., & Ellis, C. (2014). *Autoethnography*. Oxford University Press, Incorporated. <http://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=1784095>
- Adams, V. (2016). *Metrics: What Counts in Global Health*. Duke University Press.
- Alwan, N. A., Burgess, R. A., Ashworth, S., Beale, R., Bhadelia, N., Bogaert, D., Dowd, J., Eckerle, I., Goldman, L. R., Greenhalgh, T., Gurdasani, D., Hamdy, A., Hanage, W. P., Hodcroft, E. B., Hyde, Z., Kellam, P., Kelly-Irving, M., Krammer, F., Lipsitch, M., ... Ziauddeen, H. (2020). Scientific consensus on the COVID-19 pandemic: We need to act now. *The Lancet*, 396(10260), e71–e72. [https://doi.org/10.1016/S0140-6736\(20\)32153-X](https://doi.org/10.1016/S0140-6736(20)32153-X)
- Angell, M. (2004). *The truth about the drug companies: How they deceive us and what to do about it*. Random House. <https://catalog.hathitrust.org/Record/004768042>
- architecture13. (2021, August 9). *Florida radio and Newsmax host who opposed Covid vaccine dies of Covid complications* [Reddit Post]. R/News. www.reddit.com/r/news/comments/p11ljz/florida_radio_and_newsmax_host_who_opposed_covid/
- Atlani-Duault, L., & Kendall, C. (2009). Influenza, anthropology, and global uncertainties. *Medical Anthropology*, 28(3), 207–211. <https://doi.org/10.1080/01459740903070519>
- Australian Government. (2019). *Immunisation and Health Check requirements for Family Tax Benefit | Department of Social Services, Australian Government*. Australian Government Department of Social Services. <https://www.dss.gov.au/our-responsibilities/families-and-children/benefits-payments/strengthening-immunisation-for-young-children>
- Aylward, B. (2011). *How we'll stop polio for good*. https://www.ted.com/talks/bruce_aylward_how_we_ll_stop_polio_for_good
- Bains, M. (2019, December 5). B.C. nurses no longer need to get flu vaccine or wear masks. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/b-c-nurses-no-longer-required-to-get-flu-vaccine-or-wear-mask-1.5384902>
- Bakhtin, M. M., Emerson, C., & Emerson, C. (1984). *Problems of Dostoevsky's Poetics*. University of Minnesota Press. <http://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=310161>
- Bambury, B. (2020, November 21). Why this journalist decided to volunteer for a COVID-19 vaccine trial | CBC Radio. *CBC*. <https://www.cbc.ca/radio/day6/covid-19-trial-volunteer-jonathan-salk-on-vaccine-patents-toy-story-turns-25-d-d-tackles-racism-and-more-1.5809626/why-this-journalist-decided-to-volunteer-for-a-covid-19-vaccine-trial-1.5809627>
- BBC. (2018, August 24). Russia trolls “spreading vaccine discord.” *BBC News*. <https://www.bbc.com/news/world-us-canada-45294192>
- B.C. CDC. (2013). *BC Influenza Prevention Policy: A Discussion of the evidence*. B.C. Center for Disease Control. <http://www.phsa.ca/staff-resources-site/Documents/Influenza/Henry%202013%20Discussion%20of%20the%20evidence.pdf>

- B.C. CDC. (2017). *Evaluation of BC's Influenza Prevention Policy: Results of a survey of healthcare workers' knowledge, attitudes and practices*. B.C. Center for Disease Control. <http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Immunization/Vaccine%20Info/HCW%20KAP%20Survey%20Final%20Report.pdf>
- BCNU. (2015). *BCNU President Gayle Duteil urges health authorities to scrap 'flu shot or mask' policy*. <https://www.bcnu.org/news-and-events/bcnu-president-urges-health-authorities-to-scrap-flu-shot-or-mask-policy>
- BCNU. (2017). *Health Authorities' Flu Shot Policies Coming into Effect*. <https://www.bcnu.org/news-and-events/health-authorities%E2%80%99-flu-shot-policies-coming-into-effect>
- BCNU. (2018, December 11). BC Health Authorities Continue Non-Science-Based "Vaccinate-or-Mask" Flu Policies. *B.C. Nurses' Union*. <https://www.bcnu.org/news-and-events/news/bc-health-authorities-continue-non-science-based-vaccinate-or-mask-flu-policies>
- BCNU. (2019, December 4). *Flu Policy Amended: Mandatory Vaccinations for Health Care Workers No Longer Required*. <https://www.bcnu.org/news-and-events/news/2019/bcnu-works-collaboratively-to-amend-flu-policy>
- Bean, S. J., & Catania, J. A. (2018). Immunology beliefs as a factor in vaccine opposition among complementary and alternative medical providers. *SAGE Open Medicine*, 6. <https://doi.org/10.1177/2050312118807625>
- Beaumont, P. (2021, September 16). Which countries are enforcing mandatory Covid jabs – and how? *The Guardian*. <https://www.theguardian.com/world/2021/sep/16/which-countries-enforcing-mandatory-covid-vaccination>
- Becker, H. S. (1973). *Outsiders: Studies in the Sociology of Deviance* (1st ed.). Free Press.
- Berry, N. S. (2014). Did we do good? NGOs, conflicts of interest and the evaluation of short-term medical missions in Sololá, Guatemala. *Social Science & Medicine* (1982), 120, 344–351. <https://doi.org/10.1016/j.socscimed.2014.05.006>
- Betsch, C., Böhm, R., & Chapman, G. B. (2015). Using Behavioral Insights to Increase Vaccination Policy Effectiveness. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 61–73. <https://doi.org/10.1177/2372732215600716>
- Blume, S. (2008). Towards a history of 'the vaccine innovation system,' 1950–2000. In *Biomedicine in the Twentieth Century: Practices, Policies, and Politics*. IOS Press, Incorporated. <http://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=334202>
- Blume, S., & Geesink, I. (2000). VACCINOLOGY: An Industrial Science? *Science as Culture*, 9(1), 41–72. <https://doi.org/10.1080/095054300114323>
- Bose, N. (2021, February 19). Exclusive: White House working with Facebook and Twitter to tackle anti-vaxxers. *Reuters*. <https://www.reuters.com/article/us-health-coronavirus-white-house-exclus-idUSKBN2AJ1SW>
- Boseley, S. (2018, December 21). Measles cases at highest for 20 years in Europe, as anti-vaccine movement grows. *The Guardian*.

- <https://www.theguardian.com/world/2018/dec/21/measles-cases-at-highest-for-20-years-in-europe-as-anti-vaccine-movement-grows>
- Bourdieu, P. (1993). *The Field of Cultural Production: Essays on Art and Literature* (R. Johnsn, Ed.). Columbia University Press.
<https://carlos.public.iastate.edu/698Q/readings/bourdieu.pdf>
- Brewer, N. T., Chapman, G. B., Rothman, A. J., Leask, J., & Kempe, A. (2017). Increasing Vaccination: Putting Psychological Science Into Action. *Psychological Science in the Public Interest*, 18(3), 149–207.
<https://doi.org/10.1177/1529100618760521>
- Brunson, E. K., & Sobo, E. J. (2017). Framing Childhood Vaccination in the United States: Getting Past Polarization in the Public Discourse. *Human Organization: Oklahoma City*, 76(1), 38–47. <http://dx.doi.org.proxy.lib.sfu.ca/10.17730/0018-7259.76.1.38>
- Bryce, E., Embree, J., Evans, G., Johnston, L., Katz, K., McGeer, A., Moore, D., Roth, V., Simor, A., Suh, K., & Vearncombe, M. (2012). AMMI Canada position paper: 2012 Mandatory influenza immunization of health care workers. *The Canadian Journal of Infectious Diseases & Medical Microbiology*, 23(4), e93–e95.
- Campbell, P. (2018). Science must get ready for the next global flu crisis. *Nature*, 553, 380–380. <https://doi.org/10.1038/d41586-018-01070-w>
- Canada, P. H. A. of. (2014, September 18). *Overview of influenza monitoring in Canada* [Program descriptions]. <https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/about-fluwatch.html>
- Caufield, T. (2016). *Hey Canada, let's stop the homeopathy lie*. Healthy Debate.
<https://healthydebate.ca/opinions/homeopathy-regulation>
- Caulfield, T., Marcon, A. R., & Murdoch, B. (2017). Injecting doubt: Responding to the naturopathic anti-vaccination rhetoric. *Journal of Law and the Biosciences*, 4(2), 229–249. <https://doi.org/10.1093/jlb/lxx017>
- CBC. (2009, September 23). Seasonal flu shot may increase H1N1 risk. *CBC*.
<https://www.cbc.ca/news/science/seasonal-flu-shot-may-increase-h1n1-risk-1.829675>
- CDC. (2019a, May 7). *Seasonal Flu vs. Pandemic Flu*. Centers for Disease Control and Prevention. <https://www.cdc.gov/flu/pandemic-resources/basics/about.html>
- CDC. (2019b, August 2). *14 Diseases You Almost Forgot About (Thanks to Vaccines)*. Centers for Disease Control and Prevention.
<https://www.cdc.gov/vaccines/parents/diseases/diseases-forgot.html>
- CDC. (2019c, October 21). *Key Facts About Seasonal Flu Vaccine*. Centers for Disease Control and Prevention. <https://www.cdc.gov/flu/prevent/keyfacts.htm>
- Centers for Disease Control and Prevention (CDC). (2011). Ten great public health achievements—Worldwide, 2001-2010. *MMWR. Morbidity and Mortality Weekly Report*, 60(24), 814–818.
- Chai, C. (2013). Should flu shots be mandatory for health care workers? *Global News*.
<https://globalnews.ca/news/413392/should-flu-shots-be-mandatory-for-health-care-workers/>
- Chan, S., & Maxouris, C. (2021, January 6). After a freezer filled with Covid-19 vaccines broke, a California hospital scrambled to administer more than 800 doses in about

- 2 hours. *CNN*. <https://www.cnn.com/2021/01/06/us/california-broken-freezer-vaccines-trnd/index.html>
- Chapman, G. B., & Coups, E. J. (2006). Emotions and preventive health behavior: Worry, regret, and influenza vaccination. *Health Psychology, 25*(1), 82–90. <https://doi.org/10.1037/0278-6133.25.1.82>
- Cillizza, C. (2021, August 25). What the ivermectin debacle reveals about the hypocrisy of the anti-vaxxer crowd. *CNN*. <https://www.cnn.com/2021/08/25/politics/ivermectin-covid-19-fox-news/index.html>
- Clarke, A. (2013). Keeping professionalism alive and well. *BCMJ, 55*(1), 6.
- Clarke, A. E., Shim, J. K., Mamo, L., Fosket, J. R., & Fishman, J. R. (2003). Biomedicalization: Technoscientific Transformations of Health, Illness, and U.S. Biomedicine. *American Sociological Review, 68*(2), 161–194. JSTOR. <https://doi.org/10.2307/1519765>
- CMA. (2005). *CMA Policy: Medical Professionalism*. Canadian Medical Association. <https://policybase.cma.ca/documents/policypdf/PD06-02.pdf>
- CMPPA. (2012, October 12). *Physician professionalism—Is it still relevant?* Canadian Medical Practitioners Association. <https://www.cmpa-acpm.ca/en/advice-publications/browse-articles/2012/physician-professionalism-is-it-still-relevant>
- Cohen, C., White, J. M., Savage, E. J., Glynn, J. R., Yoon Choi, Andrews, N., Brown, D., & Ramsay, M. E. (2007). Vaccine Effectiveness Estimates, 2004–2005 Mumps Outbreak, England. *Emerging Infectious Diseases, 13*(1), 12–17. <https://doi.org/10.3201/eid1301.060649>
- Cohen, S. (2002). *Folk Devils and Moral Panics: The creation of the Mods and Rockers* (3rd ed.). Routledge.
- Colgrove, J. K. (2006). *State of immunity: The politics of vaccination in twentieth-century America*. University of California Press ; Milbank Memorial Fund.
- Conis, E. (2014). *Vaccine Nation: America's Changing Relationship with Immunization*. University of Chicago Press.
- Cooper, F., & Packard, R. M. (1997). *International development and the social sciences: Essays on the history and politics of knowledge / edited by Frederick Cooper and Randall Packard*. University of California Press.
- Crowe, K. (2015, January 16). Mysterious flu findings add to vaccine debate. *CBC*. <https://www.cbc.ca/news/health/flu-vaccine-paradox-adds-to-public-health-debate-1.2912790>
- Crowe, K. (2016, July 10). Canadian protocol reveals flu shot doesn't work as well as scientists once thought. *CBC*. <https://www.cbc.ca/news/canada/canada-flu-shot-vaccine-skowronski-h1n1-1.3669427>
- Cruikshank, J. (1998). *The social life of stories: Narrative and knowledge in the Yukon Territory*. Vancouver, BC: UBC Press.
- D'Amore, R. (2020, September 2). A second coronavirus lockdown in Canada? Experts discuss the likelihood. *Global News*. <https://globalnews.ca/news/7311511/coronavirus-canada-second-lockdown/>
- Davies, L. (2021, October 6). WHO endorses use of world's first malaria vaccine in Africa. *The Guardian*. <https://www.theguardian.com/global->

- development/2021/oct/06/who-endorses-use-of-worlds-first-malaria-vaccine-in-africa
- Davison, P. (2012). The Language of Memes. In M. Mandiberg (Ed.), *The Social Media Reader* (pp. 120–134). New York University Press.
http://spring2016.veryinteractive.net/content/6-library/7-language-of-internet-memes/language-of-internet-memes_michaelmandiberg.pdf
- Deer, B. (2011a). How the case against the MMR vaccine was fixed. *BMJ*, 342.
<https://doi.org/10.1136/bmj.c5347>
- Deer, B. (2011b). How the vaccine crisis was meant to make money. *BMJ*, 342.
<https://doi.org/10.1136/bmj.c5258>
- Di Castri, A. M., Halperin, D. M., McPherson, C. M., Nunn, A., Farrar-Muir, H., Kwong, J. C., & Henry, B. (2020). Narrowing the policy gap: Lessons from years 2 and 3 of the British Columbia influenza prevention policy. *Human Vaccines & Immunotherapeutics*, 16(6), 1354–1363.
<https://doi.org/10.1080/21645515.2019.1692561>
- Doubek, J. (2019, March 6). *18-Year-Old Testifies About Getting Vaccinated Despite Mother's Anti-Vaccine Beliefs*. National Public Radio.
<https://www.npr.org/2019/03/06/700617424/18-year-old-testifies-about-getting-vaccinated-despite-mothers-anti-vaccine-beli>
- Dubé, E., Gagnon, D., Ouakki, M., Bettinger, J. A., Guay, M., Halperin, S., Wilson, K., Graham, J., Witteman, H. O., MacDonald, S., Fisher, W., Monnais, L., Tran, D., Gagneur, A., Guichon, J., Saini, V., Heffernan, J. M., Meyer, S., Driedger, S. M., ... MacDougall, H. (2016). Understanding Vaccine Hesitancy in Canada: Results of a Consultation Study by the Canadian Immunization Research Network. *PLoS ONE*, 11(6). <https://doi.org/10.1371/journal.pone.0156118>
- Dumit, J. (2012). *Drugs for life: How pharmaceutical companies define our health*. Duke University Press. <https://catalog.hathitrust.org/Record/012337807>
- Dupuy, B. (2020, October 22). How anti-vaxxers have rebranded in the coronavirus era. *The Independent*.
<https://www.independent.co.uk/news/world/americas/coronavirus-anti-vaccine-vaxxer-vaccination-trump-movement-mask-b1219944.html>
- Duteil, G. (2015). *Subject: Vaccinate or Mask Policy*. <https://www.bcnu.org/News-Events/Documents/gayle-letter-health-authorities-09182015.pdf>
- Dyer, O. (2018). Flu vaccination: Toronto hospitals cannot implement staff “vaccinate or mask” policy, says ruling. *BMJ*, 362, k3931. <https://doi.org/10.1136/bmj.k3931>
- Elliot, J. K. (2021, August 10). Anti-vaxxers storm the wrong BBC building in botched U.K. protest. *Global News*. <https://globalnews.ca/news/8099979/anti-vaccine-bbc-protest-covid-uk/>
- Elliott, C. (2010). 8 Pharmaceutical Propaganda. In *Against Health* (pp. 93–104). New York University Press.
<https://www.degruyter.com/document/doi/10.18574/9780814759639-009/html>
- Ellis, C., Adams, T. E., & Bochner, A. P. (2010). Autoethnography: An Overview. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 12(1), Article 1. <http://www.qualitative-research.net/index.php/fqs/article/view/1589>

- Ellis, C., Adams, T. E., & Bochner, A. P. (2011). Autoethnography: An Overview. *Forum: Qualitative Social Research, 12*(1), Article 1. <https://doi.org/10.17169/fqs-12.1.1589>
- Enria, L., Lees, S., Smout, E., Mooney, T., Tengbeh, A. F., Leigh, B., Greenwood, B., Watson-Jones, D., & Larson, H. (2016). Power, fairness and trust: Understanding and engaging with vaccine trial participants and communities in the setting up the EBOVAC-Salone vaccine trial in Sierra Leone. *BMC Public Health, 16*(1), 1140. <https://doi.org/10.1186/s12889-016-3799-x>
- Enserink, M. (2010, January 29). *Gates Call for “Decade of Vaccines,” Pledges Assault on Child Mortality*. Science | AAAS. <https://www.sciencemag.org/news/2010/01/gates-call-decade-vaccines-pledges-assault-child-mortality>
- Erikson, S. L. (2007). Fetal Views: Histories and Habits of Looking at the Fetus in Germany. *The Journal of Medical Humanities, 28*(4), 187–212. <https://doi.org/10.1007/s10912-007-9040-2>
- Erikson, S. L. (2015). Global health indicators and maternal health futures: The case of Intrauterine Growth Restriction. *Global Public Health, 10*(10), 1157–1171. <https://doi.org/10.1080/17441692.2015.1034155>
- Farmer, P. (1994). AIDS-talk and the constitution of cultural models. *Social Science & Medicine, 38*(6), 801–809. [https://doi.org/10.1016/0277-9536\(94\)90152-X](https://doi.org/10.1016/0277-9536(94)90152-X)
- Feldman-Savelsberg, P., Ndonko, F. T., & Schmidt-Ehry, B. (2000). Sterilizing vaccines or the politics of the womb: Retrospective study of a rumor in Cameroon. *Medical Anthropology Quarterly, 14*(2), 159–179. <https://doi.org/10.1525/maq.2000.14.2.159>
- FemPositive. (2019, January 30). Anti-vaxx Mom Asked For Advice On How To Protect Her 3-year-old From The Measles Outbreak. *FemPositive*. <https://www.fempositive.com/anti-vaxx-mom-asked-for-advice-on-how-to-protect-her-3-year-old-from-the-measles-outbreak/>
- Ferguson, J. (1999). Global Disconnect: Abjection and the Aftermath of Modernism. In *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt* (1st ed., pp. 234–254). University of California Press.
- Fleerackers, A. (2020, February 23). Opinion: My parents were against vaccines. Getting immunized as an adult shouldn’t have been so hard. *The Globe and Mail*. <https://www.theglobeandmail.com/opinion/article-my-parents-were-against-vaccines-getting-immunized-as-an-adult/>
- Foucault, M. (2019). *Discourse and truth and parrēsia* (H.-P. Fruchaud, D. Lorenzini, & N. Luxon, Eds.). The University of Chicago Press. <https://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=5806687>
- Galanes, P. (2021, July 22). My Mom Doesn’t Want Me to Get the Covid-19 Vaccine. But I Already Did. *The New York Times*. <https://www.nytimes.com/2021/07/22/style/covid-vaccine-social-qs.html>
- Gangarosa, E. J., Galazka, A. M., Wolfe, C. R., Phillips, L. M., Gangarosa, R. E., Miller, E., & Chen, R. T. (1998). Impact of anti-vaccine movements on pertussis control: The untold story. *Lancet (London, England), 351*(9099), 356–361. [https://doi.org/10.1016/s0140-6736\(97\)04334-1](https://doi.org/10.1016/s0140-6736(97)04334-1)

- Gardam, M., & Lemieux, C. (2013). Mandatory influenza vaccination? First we need a better vaccine. *CMAJ*, *185*(8), 639–640. <https://doi.org/10.1503/cmaj.122074>
- Gatehouse, J., McNair, M., & Leung, A. (2020, October 29). UPS executive granted special ministerial exemption from Canada's COVID-19 quarantine. *CBC*. <https://www.cbc.ca/news/canada/ups-executive-quarantine-exemption-1.5780753>
- GAVI. (2021). *Millennium Development Goals*. Gavi: The Vaccine Alliance. <https://www.gavi.org/our-alliance/global-health-development/millennium-development-goals>
- Germani, F., & Biller-Andorno, N. (2021). The anti-vaccination infodemic on social media: A behavioral analysis. *PLOS ONE*, *16*(3), e0247642. <https://doi.org/10.1371/journal.pone.0247642>
- Graham, J. (2015, October 20). Saskatchewan pauses mandatory flu shot policy for health-care workers. *Global News*. <https://globalnews.ca/news/2289367/saskatchewan-pauses-mandatory-flu-shot-policy-for-health-care-workers/>
- Graham, J. (2016). Ambiguous Capture: Collaborative Capitalism and the Meningitis Vaccine Project. *Medical Anthropology*, *35*(5), 419–432. <https://doi.org/10.1080/01459740.2016.1167055>
- Greenberg, J., Capurro, G., Dubé, E., & Driedger, S. M. (2019). Measles, Mickey, and the Media: Anti-Vaxxers and Health Risk Narratives during the 2015 Disneyland Outbreak. *Canadian Journal of Communication*, *44*(2), 175–189. <https://doi.org/10.22230/cjc.2019v44n2a3346>
- Greene, J. A. (2006). *Prescribing by Numbers: Drugs and the Definition of Disease*. Johns Hopkins University Press.
- Greene, M. T., Fowler, K. E., Ratz, D., Krein, S. L., Bradley, S. F., & Saint, S. (2018). Changes in Influenza Vaccination Requirements for Health Care Personnel in US Hospitals. *JAMA Network Open*, *1*(2), e180143. <https://doi.org/10.1001/jamanetworkopen.2018.0143>
- Greenough, P. (1995). Intimidation, coercion and resistance in the final stages of the South Asian Smallpox Eradication Campaign, 1973-1975. *Social Science & Medicine* (1982), *41*(5), 633–645. [https://doi.org/10.1016/0277-9536\(95\)00035-6](https://doi.org/10.1016/0277-9536(95)00035-6)
- Group, B. M. J. P. (2011). Wakefield's article linking MMR vaccine and autism was fraudulent. *BMJ*, *342*. <https://doi.org/10.1136/bmj.d1678>
- Gusfield, J. R. (1981). *The culture of public problems: Drinking-driving and the symbolic order / Joseph R. Gusfield*. University of Chicago Press.
- Gusterson, H. (1997). Studying Up Revisited. *Political and Legal Anthropology Review*, *20*(1), 114–119. JSTOR.
- Hacking, I. (1986). Making Up People. In T. C. Heller & C. Brooke-Rose, *Reconstructing individualism: Autonomy, individuality, and the self in Western thought* (pp. 161–171). Stanford, Calif: Stanford University Press.
- Hacking, I. (1999). *The social construction of what?* Harvard University Press.
- Hacking, I. (2002). Inaugural lecture: Chair of Philosophy and History of Scientific Concepts at the Collège de France. *Economy and Society*, *31*(1), 1–14. <https://doi.org/10.1080/03085140120109222>
- Hacking, I. (2006, August 17). Making Up People. *London Review of Books*, 23–26.

- Hajj Hussein, I., Chams, N., Chams, S., El Sayegh, S., Badran, R., Raad, M., Gerges-Geagea, A., Leone, A., & Jurjus, A. (2015). Vaccines Through Centuries: Major Cornerstones of Global Health. *Frontiers in Public Health*, 3. <https://doi.org/10.3389/fpubh.2015.00269>
- Hall, S., Critcher, C., Jefferson, T., Clarke, J., & Roberts, B. (1978). *Policing the Crisis: Mugging, the State, and Law and Order* (1st ed.). The MacMillan Press LTD.
- Hanna, B., & Kleinman, A. (2013). 2. Unpacking Global Health: Theory and Critique. In *Reimagining Global Health* (pp. 15–32). University of California Press. <https://www.degruyter.com/document/doi/10.1525/9780520954632-004/html>
- Haraway, D. J. (1991). *Simians, cyborgs, and women: The reinvention of nature / by Donna J. Haraway*. Free Association Books.
- Harvey, D. (2007). *A Brief History of Neoliberalism*. Oxford University Press, Incorporated. <http://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=422896>
- Haseltine, W. A. (2020, September 23). What COVID-19 Reinfection Means for Vaccines. *Scientific American*. <https://www.scientificamerican.com/article/what-covid-19-reinfection-means-for-vaccines/>
- Hausman, B. L. (2019). *Anti/Vax: Reframing the Vaccination Controversy*. Cornell University Press. <http://www.jstor.org/stable/10.7591/j.ctvdtphd8>
- Hayano, D. M. (1979). Auto-Ethnography: Paradigms, Problems, and Prospects. *Human Organization*, 38(1), 99–104.
- Heller, J. (2008). *The vaccine narrative*. Vanderbilt University Press.
- Hennig, C. (2019, February 28). Not just apathy: A short history of B.C.'s anti-vaccination movement | CBC News. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/short-history-of-b-c-s-anti-vaccination-movement-1.5036265>
- Henry, B. (2009). *Soap and Water and Common Sense* (1st edition). House of Anansi Press.
- Henry, B., & Kendall, P. (2016). Immunize or mask: A choice to protect patients in BC. *B.C. Medical Journal*, 58(10), 555–557.
- Hinsliff, G. (2019, April 27). Anti-vaxxers are taking populism to a new, deadly level | Gaby Hinsliff. *The Guardian*. <https://www.theguardian.com/commentisfree/2019/apr/27/vaccines-mmr-fears-anti-vaxxers>
- Hoffman, J. (2019, September 23). How Anti-Vaccine Sentiment Took Hold in the United States. *The New York Times*. <https://www.nytimes.com/2019/09/23/health/anti-vaccination-movement-us.html>
- Hollmeyer, H., Hayden, F., Poland, G., & Buchholz, U. (2009). Influenza vaccination of health care workers in hospitals-A review of studies on attitudes and predictors. *Vaccine*, 27(30), 3935–3944. <https://doi.org/10.1016/j.vaccine.2009.03.056>
- Hotez, P. (2021). COVID vaccines: Time to confront anti-vax aggression. *Nature*, 592(7856), 661–661. <https://doi.org/10.1038/d41586-021-01084-x>
- Huntington, H. (2015). MENACING MEMES? AFFECT AND EFFECTS OF POLITICAL INTERNET MEMES. *AoIR Selected Papers of Internet Research*. <https://journals.uic.edu/ojs/index.php/spir/article/view/8728>

- Hussain, A., Ali, S., Ahmed, M., & Hussain, S. (2018). The Anti-vaccination Movement: A Regression in Modern Medicine. *Cureus, 10*(7).
<https://doi.org/10.7759/cureus.2919>
- Hutchison, B., Levesque, J.-F., Strumpf, E., & Coyle, N. (2011). Primary Health Care in Canada: Systems in Motion. *The Milbank Quarterly, 89*(2), 256–288.
<https://doi.org/10.1111/j.1468-0009.2011.00628.x>
- Huzair, F., & Sturdy, S. (2017). Biotechnology and the transformation of vaccine innovation: The case of the hepatitis B vaccines 1968–2000. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 64*, 11–21.
<https://doi.org/10.1016/j.shpsc.2017.05.004>
- Hyde, M. (2020, December 4). Only an idiot would claim the vaccine triumph was a vindication of Brexit. *The Guardian*.
<http://www.theguardian.com/commentisfree/2020/dec/04/idiot-vaccine-triumph-vindication-brexit>
- Ifan, M. (2021, August 6). Covid anti-vaxxers: “Shut down fake news sites,” begs daughter. *BBC News*. <https://www.bbc.com/news/uk-wales-58103604>
- Jacobson Vann, J. C., Jacobson, R. M., Coyne-Beasley, T., Asafu-Adjei, J. K., & Szilagyi, P. G. (2018). Patient reminder and recall interventions to improve immunization rates. *The Cochrane Database of Systematic Reviews, 2018*(1).
<https://doi.org/10.1002/14651858.CD003941.pub3>
- Jamison, A. M., Broniatowski, D. A., Dredze, M., Wood-Doughty, Z., Khan, D., & Quinn, S. C. (2020). Vaccine-related advertising in the Facebook Ad Archive. *Vaccine, 38*(3), 512–520. <https://doi.org/10.1016/j.vaccine.2019.10.066>
- Jenkins, E. S. (2014). The Modes of Visual Rhetoric: Circulating Memes as Expressions. *Quarterly Journal of Speech, 100*(4), 442–466.
<https://doi.org/10.1080/00335630.2014.989258>
- Jin, K.-K., & Leathern, R. (2020, October 13). Supporting Public Health Experts’ Vaccine Efforts. *About Facebook*. <https://about.fb.com/news/2020/10/supporting-public-health-experts-vaccine-efforts/>
- Jones, A. (2014, October 27). Ontario has no plans to make flu shots mandatory for hospital nurses. *CTVNews*. <https://www.ctvnews.ca/health/ontario-has-no-plans-to-make-flu-shots-mandatory-for-hospital-nurses-1.2073394>
- Jourdan, C. (1997). Resina’s Life Histories. *Canberra Anthropology, 20*(1–2), 40–54.
<https://doi.org/10.1080/03149099709508381>
- Kaboli, F., Astrakianakis, G., Li, G., Guzman, J., Naus, M., & Donovan, T. (2010). Influenza Vaccination and Intention to Receive the Pandemic H1N1 Influenza Vaccine among Healthcare Workers of British Columbia, Canada: A Cross-Sectional Study. *Infection Control and Hospital Epidemiology, 31*(10), 1017–1024. <https://doi.org/10.1086/655465>
- Kahan, D. M., Jamieson, K. H., Landrum, A., & Winneg, K. (2017). Culturally antagonistic memes and the Zika virus: An experimental test. *Journal of Risk Research, 20*(1), 1–40. <https://doi.org/10.1080/13669877.2016.1260631>
- Kang, H. (2019). *Medicine and Morality: Crises in the History of a Profession*. University of British Columbia Press.

- Kasstan, B. (2021). "A Free People, Controlled Only by God": Circulating and Converting Criticism of Vaccination in Jerusalem. *Culture, Medicine and Psychiatry*. <https://doi.org/10.1007/s11013-020-09705-2>
- Kennedy, M. (2019). Samoa Arrests Anti-Vaccination Activist As Measles Death Toll Rises. *NPR*. <https://www.npr.org/2019/12/06/785487606/samoa-arrests-anti-vaccination-activist-as-measles-death-toll-rises>
- Kirby, J. (2018, January 4). *What to know about the "raw water" trend*. *Vox*. <https://www.vox.com/science-and-health/2018/1/4/16846048/raw-water-trend-silicon-valley>
- Kluger, J. (2015, July 2). "Jim Carrey, Please Shut Up About Vaccines." *Time*. <https://time.com/3944067/jim-carrey-vaccines/>
- Knobel, M., & Lankshear, C. (2007). *A new literacies sampler*. PLang.
- Kulenkampff, M., Schwartzman, J. S., & Wilson, J. (1974). Neurological complications of pertussis inoculation. *Archives of Disease in Childhood*, 49(1), 46–49.
- Leach, M. (2007). *Vaccine anxieties: Global science, child health and society / Melissa Leach and James Fairhead*. Earthscan. <https://ebookcentral.proquest.com/lib/sfu-ebooks/detail.action?docID=429991>
- Lessa, I. (2006). Discursive Struggles Within Social Welfare: Restaging Teen Motherhood. *The British Journal of Social Work*, 36(2), 283–298. <https://doi.org/10.1093/bjsw/bch256>
- Lewis, S. (2021, June 1). Krispy Kreme has given away over 1.5 million doughnuts to vaccinated Americans. *CBS*. <https://www.cbsnews.com/news/krispy-kreme-free-doughnuts-vaccine-national-doughnut-day/>
- Lewnard, J. A., & Cobey, S. (2018). Immune History and Influenza Vaccine Effectiveness. *Vaccines*, 6(2). <https://doi.org/10.3390/vaccines6020028>
- Lieu, T. A., Cochi, S. L., Black, S. B., Halloran, M. E., Shinefield, H. R., Holmes, S. J., Wharton, M., & Washington, A. E. (1994). Cost-effectiveness of a Routine Varicella Vaccination Program for US Children. *JAMA*, 271(5), 375–381. <https://doi.org/10.1001/jama.1994.03510290057037>
- Lindsay, B. (2018a, May 3). Top doctor calls for sanctions against chiropractor for anti-vaccine video. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/top-doctor-calls-for-sanctions-against-chiropractor-for-anti-vaccine-video-1.4645508>
- Lindsay, B. (2018b, May 4). Vancouver chiropractor resigns from college board over anti-vaccine video. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/vancouver-chiropractor-resigns-from-college-board-over-anti-vaccine-video-1.4649019>
- Luehrmann, S. (2011). THE MODERNITY OF MANUAL REPRODUCTION: Soviet Propaganda and the Creative Life of Ideology. *Cultural Anthropology*, 26(3), 363–388. <https://doi.org/10.1111/j.1548-1360.2011.01103.x>
- Lugo, N. R. (2007). Will carrots or sticks raise influenza immunization rates of health care personnel? *American Journal of Infection Control*, 35(1), 1–6. <https://doi.org/10.1016/j.ajic.2006.10.004>
- Lupton, A. (2018, September 12). "Vaccinate or mask" ruling prompts London hospitals to review policies. *CBC*. <https://www.cbc.ca/news/canada/london/vaccinate-or-maks-1.4818607>

- Macdonald, N. E. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 33(34), 4161–4164. <https://doi.org/10.1016/j.vaccine.2015.04.036>
- Marcus, O. R., & Singer, M. (2017). Loving Ebola-chan: Internet memes in an epidemic. *Media, Culture & Society*, 39(3), 341–356. <https://doi.org/10.1177/0163443716646174>
- Martin, E. (1991). The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles. *Signs*, 16(3), 485–501.
- Mattingly, C. (1998). Finding Narrative in Clinical Practice. In *Healing Dramas and Clinical Plots: The Narrative Structure of Experience*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139167017.002>
- McElroy, J. (2020, October 25). 10 reasons why the B.C. NDP had its most successful election ever. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/ndp-wins-bc-2020-analysis-horgan-1.5776167>
- McKie, R. (2020, December 6). The vaccine miracle: How scientists waged the battle against Covid-19. *The Observer*. <https://www.theguardian.com/world/2020/dec/06/the-vaccine-miracle-how-scientists-waged-the-battle-against-covid-19>
- McKnight, J., & Holt, D. B. (2014). Designing the Expanded Programme on Immunisation (EPI) as a service: Prioritising patients over administrative logic. *Global Public Health*, 9(10), 1152–1166. <https://doi.org/10.1080/17441692.2014.972967>
- McTavish, L. (2005). *Childbirth and the display of authority in early modern France*. Ashgate PubCo.
- Meikle, J., & Boseley, S. (2010, May 24). MMR row doctor Andrew Wakefield struck off register. *The Guardian*. <https://www.theguardian.com/society/2010/may/24/mmr-doctor-andrew-wakefield-struck-off>
- Michaels, K., & Potenteau, D. (2021, September 1). Anti-vaccine mandate protest at Kelowna hospital draws massive crowd. *Global News*. <https://globalnews.ca/news/8158405/kelowna-anti-vax-mandate-protest/>
- Miller, A. (2021, August 28). Why even vaccinated Canadians need to keep their guard up in the 4th wave. *CBC*. <https://www.cbc.ca/news/health/fourth-wave-canada-covid19-vaccine-herd-immunity-delta-variant-1.6156437>
- Miller, D. L., & Ross, E. M. (1978). National Childhood Encephalopathy Study: An interim report. *British Medical Journal*, 2(6143), 992–993.
- Morris, S. (2020, December 30). “Happy vaccine day” at Welsh factory proudly preparing Oxford doses. *The Guardian*. <http://www.theguardian.com/uk-news/2020/dec/30/happy-vaccine-day-at-welsh-factory-proudly-preparing-oxford-doses>
- Nader, L. (1972). Up the Anthropologist—Perspectives Gained from Studying Up. In D. H. Hymes (Ed.), *Reinventing anthropology / Edited by Dell Hymes*. -. Pantheon Books.
- Nading, A. M. (2015). Chimeric globalism: Global health in the shadow of the dengue vaccine. *American Ethnologist*, 42(2), 356–370. <https://doi.org/10.1111/amet.12135>

- Nguyen, T. (2021, February 3). How people are trying to convince their families to get vaccinated. *Vox*. <https://www.vox.com/the-goods/22262828/vaccine-hesitant-families-misinformation>
- Nichter, M. (1981). Idioms of distress: Alternatives in the expression of psychosocial distress: A case study from South India. *Culture, Medicine and Psychiatry*, 5(4), 379–408. <https://doi.org/10.1007/BF00054782>
- Nichter, M. (2008). Why Is Research on Local Illness Categories Important? In *Global health: Why cultural perceptions, social representations, and biopolitics matter*. University of Arizona Press.
- Nichter, M. and M. (2003). Vaccinations in the Third World: A Consideration of Community Demand. In *Anthropology and International Health* (pp. 329–366). Routledge.
- Offley, W. (2016). Cover up: The lack of evidence for vaccinate or mask policies. *B.C. Medical Journal*, 58(10), 554–556.
- Ortner, S. B. (2006). *Anthropology and social theory: Culture, power, and the acting subject / Sherry B. Ortner*. Duke University Press.
- Ozawa, S., Mirelman, A., Stack, M. L., Walker, D. G., & Levine, O. S. (2012). Cost-effectiveness and economic benefits of vaccines in low- and middle-income countries: A systematic review. *Vaccine*, 31(1), 96–108. <https://doi.org/10.1016/j.vaccine.2012.10.103>
- Packard, R. (1997). Visions of Postwar Health and Development and Their Impact on Public Health Interventions in the Developing World. In F. Cooper & R. Packard (Eds.), *International Development and the Social Sciences: Essays on the History and Politics of Knowledge* (pp. 93–114). University of California Press.
- Pannett, R. (2021). Anti-vaccine protesters tried to storm the BBC's offices. But they had the wrong address. *The Washington Post*.
- Parkins, M. D., McNeil, S. A., & Laupland, K. B. (2009). Routine immunization of adults in Canada: Review of the epidemiology of vaccine-preventable diseases and current recommendations for primary prevention. *The Canadian Journal of Infectious Diseases & Medical Microbiology = Journal Canadien Des Maladies Infectieuses Et De La Microbiologie Medicale*, 20(3), e81-90. <https://doi.org/10.1155/2009/474035>
- Paules, C. I., Marston, H. D., Eisinger, R. W., Baltimore, D., & Fauci, A. S. (2017). The Pathway to a Universal Influenza Vaccine. *Immunity*, 47(4), 599–603. <https://doi.org/10.1016/j.immuni.2017.09.007>
- Paules, C. I., Sullivan, S. G., Subbarao, K., & Fauci, A. S. (2018). Chasing Seasonal Influenza—The Need for a Universal Influenza Vaccine. *The New England Journal of Medicine*, 378(1), 7–9. <https://doi.org/10.1056/NEJMp1714916>
- PHAC. (2011). *NACI Statement: Seasonal Influenza Vaccine, 2011-2012* [Statements]. <https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2011-37/canada-communicable-disease-report-acs-5.html>
- PHAC. (2021). *Vaccine uptake in Canadian adults: Highlights from the 2020-2021 Seasonal Influenza Vaccination Coverage Survey* (Seasonal Influenza Vaccination Coverage Survey) [Surveys]. Public Health Agency of Canada. <https://www.canada.ca/en/public-health/services/immunization->

- vaccines/vaccination-coverage/highlights-2020-2021-seasonal-influenza-survey.html
- Pierik, R. (2018). Mandatory Vaccination: An Unqualified Defence. *Journal of Applied Philosophy*, 35(2), 381–398. <https://doi.org/10.1111/japp.12215>
- Prematunge, C., Corace, K., Mccarthy, A., Nair, R. C., Pugsley, R., & Garber, G. (2012). Factors influencing pandemic influenza vaccination of healthcare workers-A systematic review. *Vaccine*, 30(32), 4733–4743. <https://doi.org/10.1016/j.vaccine.2012.05.018>
- ProvinceofBC. (2020, November 9). *COVID-19 BC Update, Nov 9*. <https://www.youtube.com/watch?v=ZaI8nRDGhD8>
- Quenneville, G. (2021, September 23). Divorced Sask. Parents fight in court over COVID-19 vaccination for teen daughter. *CBC*. <https://www.cbc.ca/news/canada/saskatoon/divorced-couple-court-fight-daughter-vaccination-1.6180214>
- Quigley, K., Macdonald, C., & Quigley, J. (2016). Pre-existing condition: Taking media coverage into account when preparing for H1N1. *Canadian Public Administration*, 59(2), 267–288. <https://doi.org/10.1111/capa.12169>
- Regalado, A. (2020, March 31). Why I am volunteering to get the coronavirus vaccine. *MIT Technology Review*. <https://www.technologyreview.com/2020/03/31/975007/moderna-coronavirus-vaccine-test-subject-interview/>
- Reich, J. A. (2014). Neoliberal Mothering and Vaccine Refusal: Imagined Gated Communities and the Privilege of Choice. *Gender & Society*, 28(5), 679–704. <https://doi.org/10.1177/0891243214532711>
- Renne, E. P. (2014). Parallel dilemmas: Polio transmission and political violence in northern Nigeria. *Africa: The Journal of the International African Institute*, 84(3), 466–486.
- Ross, A. (2021, March 4). COVID-19 variants on the rise but vaccine rollout means B.C. could see a “post-pandemic world” this summer | CBC News. *CBC*. <https://www.cbc.ca/news/canada/british-columbia/bc-covid19-update-march-4-1.5937103>
- Ruderman, C., Tracy, C. S., Bensimon, C. M., Bernstein, M., Hawryluck, L., Shaul, R. Z., & Upshur, R. E. (2006). On pandemics and the duty to care: Whose duty? who cares? *BMC Medical Ethics*, 7(1), 1–6. <https://doi.org/10.1186/1472-6939-7-5>
- Sajan, B. (2021, December 13). Anti-vaccine protest featuring effigies of B.C. politicians slammed as “disturbing,” “offensive.” *CTV News*. <https://bc.ctvnews.ca/anti-vaccine-protest-featuring-effigies-of-b-c-politicians-slammed-as-disturbing-offensive-1.5706186>
- Sample, I. (2020, November 16). Hopes of Covid vaccine for more than 1bn people by end of 2021. *The Guardian*. <http://www.theguardian.com/world/2020/nov/16/moderna-covid-vaccine-candidate-almost-95-effective-trials-show>
- Sassower, R. (1993). Technoscience and Medicine. In C. Delkeskamp-Hayes & M. A. G. Cutter (Eds.), *Science, Technology, and the Art of Medicine: European-American Dialogues* (pp. 219–228). Springer Netherlands. https://doi.org/10.1007/978-94-017-2960-4_14

- Schmid, P., Rauber, D., Betsch, C., Lidolt, G., & Denker, M.-L. (2017). Barriers of Influenza Vaccination Intention and Behavior—A Systematic Review of Influenza Vaccine Hesitancy, 2005—2016. *PLoS ONE*, *12*(1), e0170550. <https://doi.org/10.1371/journal.pone.0170550>
- Scudellari, M. (2020). How the pandemic might play out in 2021 and beyond. *Nature*, *584*(7819), 22–25. <https://doi.org/10.1038/d41586-020-02278-5>
- Serres, G. D., Skowronski, D. M., Ward, B. J., Gardam, M., Lemieux, C., Yassi, A., Patrick, D. M., Krajden, M., Loeb, M., Collignon, P., & Carrat, F. (2017). Influenza Vaccination of Healthcare Workers: Critical Analysis of the Evidence for Patient Benefit Underpinning Policies of Enforcement. *PLOS ONE*, *12*(1), e0163586. <https://doi.org/10.1371/journal.pone.0163586>
- Shakow, A., & Irwin, A. (1999). Terms Reconsidered: Decoding Development Discourse. In J. Y. Kim, J. K. Millen, A. Irwin, & J. Gershman (Eds.), *Dying for growth: Global inequality and the health of the poor / edited by Jim Yong Kim [and others]*. Common Courage Press.
- Shifman, L. (2013). Memes in a Digital World: Reconciling with a Conceptual Troublemaker. *Journal of Computer-Mediated Communication*, *18*(3), 362–377. <https://doi.org/10.1111/jcc4.12013>
- Skowronski, D. M., Chambers, C., De Serres, G., Sabaiduc, S., Winter, A.-L., Dickinson, J. A., Gubbay, J. B., Fonseca, K., Drews, S. J., Charest, H., Martineau, C., Krajden, M., Petric, M., Bastien, N., Li, Y., & Smith, D. J. (2017). Serial Vaccination and the Antigenic Distance Hypothesis: Effects on Influenza Vaccine Effectiveness During A(H3N2) Epidemics in Canada, 2010–2011 to 2014–2015. *The Journal of Infectious Diseases*, *215*(7), 1059–1099. <https://doi.org/10.1093/infdis/jix074>
- Skowronski, D. M., Chambers, C., Sabaiduc, S., De Serres, G., Winter, A.-L., Dickinson, J. A., Krajden, M., Gubbay, J. B., Drews, S. J., Martineau, C., Eshaghi, A., Kwindt, T. L., Bastien, N., & Li, Y. (2016). A Perfect Storm: Impact of Genomic Variation and Serial Vaccination on Low Influenza Vaccine Effectiveness During the 2014–2015 Season. *Clinical Infectious Diseases*, *63*(1), 21–32. <https://doi.org/10.1093/cid/ciw176>
- Skowronski, D. M., Sabaiduc, S., Leir, S., Rose, C., Zou, M., Murti, M., Dickinson, J. A., Olsha, R., Gubbay, J. B., Croxen, M. A., Charest, H., Bastien, N., Li, Y., Jassem, A., Krajden, M., & Serres, G. D. (2019). Paradoxical clade- and age-specific vaccine effectiveness during the 2018/19 influenza A(H3N2) epidemic in Canada: Potential imprint-regulated effect of vaccine (I-REV). *Eurosurveillance*, *24*(46), 1900585. <https://doi.org/10.2807/1560-7917.ES.2019.24.46.1900585>
- Skowronski, D. M., Serres, G. D., Crowcroft, N. S., Janjua, N. Z., Boulianne, N., Hottes, T. S., Rosella, L. C., Dickinson, J. A., Gilca, R., Sethi, P., Ouhoumane, N., Willison, D. J., Rouleau, I., Petric, M., Fonseca, K., Drews, S. J., Rebbapragada, A., Charest, H., Hamelin, M.-È., ... Team, for the C. S. (2010). Association between the 2008–09 Seasonal Influenza Vaccine and Pandemic H1N1 Illness during Spring–Summer 2009: Four Observational Studies from Canada. *PLOS Medicine*, *7*(4), e1000258. <https://doi.org/10.1371/journal.pmed.1000258>
- Smith, C. (2017, May 23). B.C. Nurses' Union nomination committee nixes candidacy of members for top three posts. *The Georgia Straight*.

- <https://www.straight.com/news/913436/bc-nurses-union-nomination-committee-nixes-candidacy-members-top-three-posts>
- Sobo, E. J. (2015). Social Cultivation of Vaccine Refusal and Delay among Waldorf (Steiner) School Parents. *Medical Anthropology Quarterly*, 29(3), 381–399. <https://doi.org/10.1111/maq.12214>
- Stadler, J., & Saethre, E. (2010). Rumours about blood and reimbursements in a microbicide gel trial. *African Journal of AIDS Research: AJAR*, 9(4), 345–353. <https://doi.org/10.2989/16085906.2010.545636>
- Starr, P. (2017). *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (2 edition). Basic Books.
- Statistics Canada. (2021). *Childhood National Immunization Coverage Survey, 2019* (The Daily). Government of Canada. <https://www150.statcan.gc.ca/n1/daily-quotidien/210503/dq210503b-eng.htm>
- Stecklow, S. (2020, November 12). Why I volunteered for a COVID-19 vaccine trial. *Reuters*. <https://www.reuters.com/article/health-coronavirus-vaccine-volunteer-idUSKBN27S0YG>
- Suh, S. (2019). Metrics of Survival: Post-Abortion Care and Reproductive Rights in Senegal. *Medical Anthropology*, 38(2), 152–166. <https://doi.org/10.1080/01459740.2018.1496333>
- Szasz, T. S. (2001). The Therapeutic State: The Tyranny of Pharmacracy. *The Independent Review*, 5(4), 485–521. JSTOR.
- Tasker, J. P. (2020, December 18). Trudeau offers sombre Christmas message but says 500,000 vaccine doses are coming early in the new year. *CBC*. <https://www.cbc.ca/news/politics/trudeau-christmas-pfizer-500-thousand-doses-1.5847366>
- Tesh, S. (1988). *Hidden arguments: Political ideology and disease prevention policy / Sylvia Noble Tesh*. Rutgers University Press.
- The Guardian. (2021, August 9). Anti-vaccine protesters storm BBC HQ – years after it moved out. *The Guardian*. <http://www.theguardian.com/world/2021/aug/09/confused-anti-vaccine-protesters-storm-bbc-hq-years-after-moved-out>
- Thomas, R. E., Jefferson, T., & Lasserson, T. J. (2010). Influenza vaccination for healthcare workers who work with the elderly. *The Cochrane Database of Systematic Reviews*, 2, CD005187. <https://doi.org/10.1002/14651858.CD005187.pub3>
- Thomas, R. E., & Lorenzetti, D. L. (2018). Interventions to increase influenza vaccination rates of those 60 years and older in the community. *The Cochrane Database of Systematic Reviews*, 2018(5). <https://doi.org/10.1002/14651858.CD005188.pub4>
- Thompson, A. K., Faith, K., Gibson, J. L., & Upshur, R. E. (2006). Pandemic influenza preparedness: An ethical framework to guide decision-making. *BMC Medical Ethics*, 7(1), 1–11. <https://doi.org/10.1186/1472-6939-7-12>
- thowayinthrowaway. (2021, August 22). *What started the thimerosal = autism and down syndrome hoax?* [Reddit Post]. R/VACCINES. www.reddit.com/r/VACCINES/comments/p9kqq0/what_started_the_thimerosal_autism_and_down/

- Tousignant, N. (2012). Trypanosomes, Toxicity and Resistance: The Politics of Mass Therapy in French Colonial Africa. *Social History of Medicine*, 25(3), 625–643. <https://doi.org/10.1093/shm/hks005>
- Trankell, I., & Ovesen, J. (2004). French colonial medicine in Cambodia: Reflections of governmentality. *Anthropology & Medicine*, 11(1), 91–105. <https://doi.org/10.1080/1364847042000204898>
- Trepanier, J. (2021, November 25). Vaccine Mandates in Historical Context. *Your Museum. Your Stories*. <https://www.historymuseum.ca/blog/vaccine-mandates/>
- UNAIDS. (2021, July 21). *An HIV vaccine: Who needs it?* UNAIDS. https://www.unaids.org/en/resources/presscentre/featurestories/2021/july/20210721_an-hiv-vaccine
- Van Buynder, P. G., Konrad, S., Kersteins, F., Preston, E., Brown, P. D., Keen, D., & Murray, N. J. (2015). Healthcare worker influenza immunization vaccinate or mask policy: Strategies for cost effective implementation and subsequent reductions in staff absenteeism due to illness. *Vaccine*, 33(13), 1625–1628. <https://doi.org/10.1016/j.vaccine.2015.01.048>
- van Delden, J. J. M., Ashcroft, R., Dawson, A., Marckmann, G., Upshur, R., & Verweij, M. F. (2008). The ethics of mandatory vaccination against influenza for health care workers. *Vaccine*, 26(44), 5562–5566. <https://doi.org/10.1016/j.vaccine.2008.08.002>
- Vanderslott, S. (2019). Exploring the meaning of pro-vaccine activism across two countries. *Social Science & Medicine*, 222, 59–66. <https://doi.org/10.1016/j.socscimed.2018.12.033>
- Vazquez, M. (2019, April 26). Trump now says parents must vaccinate children in face of measles outbreak. *CNN*. <https://www.cnn.com/2019/04/26/politics/donald-trump-measles-vaccines/index.html>
- Wakefield, A. J., Murch, S. H., Anthony, A., Linnell, J., Casson, D. M., Malik, M., Berelowitz, M., Dhillon, A. P., Thomson, M. A., Harvey, P., Valentine, A., Davies, S. E., & Walker-Smith, J. A. (1998). RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *The Lancet*, 351(9103), 637–641. [https://doi.org/10.1016/S0140-6736\(97\)11096-0](https://doi.org/10.1016/S0140-6736(97)11096-0)
- Walkinshaw, E. (2011a). Mandatory vaccinations: The Canadian picture. *CMAJ : Canadian Medical Association Journal*, 183(16), e1165–e1166. <https://doi.org/10.1503/cmaj.109-3992>
- Walkinshaw, E. (2011b). Mandatory vaccinations: The international landscape. *CMAJ*, 183(16), E1167–E1168. <https://doi.org/10.1503/cmaj.109-3993>
- Wall, S. (2008). Easier Said than Done: Writing an Autoethnography. *International Journal of Qualitative Methods*, 7(1), 38–53. <https://doi.org/10.1177/160940690800700103>
- Weeks, C. (2014, November). Why this expert is against making flu shots mandatory for health-care workers. *The Globe and Mail*. <https://www.theglobeandmail.com/life/health-and-fitness/health/reality-check-why-an-expert-argues-against-flu-shots-for-health-care-workers/article21057766/>

- Wehling, P. (2011). The “technoscientization” of medicine and its limits: Technoscientific identities, biosocialities, and rare disease patient organizations. *Poiesis & Praxis*, 8(2), 67–82. <https://doi.org/10.1007/s10202-011-0100-3>
- WHO. (2019, January 18). *Ten health issues WHO will tackle this year*. World Health Organization. <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>
- WHO. (2020). *Immunization Agenda 2030: A Global Strategy to Leave No One Behind*. The World Health Organization. https://cdn.who.int/media/docs/default-source/immunization/strategy/ia2030/ia2030-draft-4-wha_b8850379-1fce-4847-bfd1-5d2c9d9e32f8.pdf?sfvrsn=5389656e_66&download=true
- Wong, J. C. (2019, February 15). Revealed: Facebook enables ads to target users interested in “vaccine controversies.” *The Guardian*. <https://www.theguardian.com/technology/2019/feb/15/facebook-anti-vaccination-advertising-targeting-controversy>
- Yoon, I. (2016). Why is it not Just a Joke? Analysis of Internet Memes Associated with Racism and Hidden Ideology of Colorblindness. *Journal of Cultural Research in Art Education*, 33, 92–123.
- Young, L. (2020, August 23). Lockdowns and a second wave? What the coronavirus pandemic could look like this fall - National | Globalnews.ca. *Global News*. <https://globalnews.ca/news/7288691/coronavirus-fall-lockdown-second-wave/>
- ZoeCoco12. (2019, July 4). *Soon the 2010's will be over. What trend do you hope won't come back in the 2020's?* [Reddit Post]. R/AskReddit. www.reddit.com/r/AskReddit/comments/c90wab/soon_the_2010s_will_be_over_what_trend_do_you/