32
CONTROVERSIES IN VACCINE POLICY

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32.1 Introduction: "We need to follow the science"

A February 7, 2022 sitting of the Canadian legislature was focused on the occupation taking place outside the doors of the Parliament building by the so-called Freedom Convoy, a populist protest first initiated to object to COVID vaccine mandates required for Canadian truck drivers crossing the US border, and later evolved to protest most COVID-related public health restrictions and requirements.[1] At this meeting of the House of Commons, Conservative MP and leader of the Official Opposition Candice Bergen gestured to the audible noise of blaring air horns[2] from the big rig trucks blocking roads throughout downtown Ottawa and asked the governing Liberal Party when Canadians could expect COVID vaccine mandates and public health restrictions to be removed. The response from Government House Leader Mark Holland was, "we need to follow science, using evidence not politics" (Global News 2022). But "following the science" masks value judgments rather than avoiding them.

Policy controversies over vaccines and other hot-button science policy issues (e.g., climate change) illustrate the inadequacy of positioning science as the "trump card" over values. These controversies arise from value disagreements that are insufficiently addressed, and science is often instrumentalized for shutting down debate, dialogue, and other means for addressing social and political disagreement. It was common during the COVID pandemic to hear reassurances from political leadership in many nations that they were "following the science." This was rhetoric that said nothing about their political processes—Were they democratic and consultary?—or their policies—Were they reasonable, measured, and effective? While science can tell us if vaccines are safe and effective, for example, it cannot tell us if it is morally justified to compel unwilling members of the public to get vaccinated. Critics raised those moral and political concerns, often with hostility, as the siege on downtown Ottawa and many threats of violence directed at scientific and political leadership demonstrated (Nogrady 2021). Those complaints were maligned as misinformed, and the complainants were cast as racists, radicalized misanthropes, and unmoored agitators. Canadian Prime Minister Justin Trudeau described the Canadian trucker convoy as hateful, abusive, and racist (and indeed some events of the Ottawa siege supported this description), and the objections to vaccine mandates as showing "disrespect to science" (Naughtie 2022). Public attention was thereby directed farther away from policy disagreements over vaccines.

This chapter steps back from the populist framing of political opposition between "the virtuous" and "the vile" (Friedman 2017) to challenge the ill-founded positioning of science vs. politics and to

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explicate the value disagreements that arise in vaccine politics and policy. The goals of this analysis are both conceptual clarity and practical: Instrumentalizing science, ignoring value conflicts, and dehumanizing opposition makes things worse. Instead, vaccine policy controversy requires more charitable understanding of opposing views and, with that understanding, deliberative recourse through political channels. This is difficult work in this political moment, with the recent conclusion of global pandemic[3] in which vaccine mandates were a lightning rod for numerous social and political discontents and disagreements. But the work is unavoidable.

This chapter will address the values associated with vaccination (Section 32.2), followed by the values specific to vaccine policies, especially mandatory vaccination policies (Section 32.3). Attention is paid to a shift in the primary political goals associated with contemporary vaccine mandates, from their introduction (starting in the 1960s) as school-entry requirements aimed at building social norms of vaccination, to a punitive and/or coercive political instrument starting in the 2010s. With that shift in policy frame came a correlating change in vaccination protest speech from safety concerns regarding vaccination to "medical freedom." The contemporary political framing of vaccine policy controversy as *science vs. freedom* is lamentable (Section 32.4). My argument, which is reminiscent of criticisms of evidence-based policy since the early 2000s, maintains the impracticality of scientizing politics when competing values are in conflict and insists on the inescapability of democratic deliberation.

32.2 Vaccines and values

When vaccine hesitators and refusers make statements like "vaccines are not safe," "vaccines are not effective," and "vaccines are not necessary" that belie expert opinion and scientific consensus claiming otherwise, one might reasonably conclude that there is some misunderstanding or misinformation at root. Indeed, this is the dominant causal interpretation of vaccine hesitancy.

Health outreach directed at the publics build on this assumption and follow a communications tactic of addressing the perceived "knowledge deficit" by identifying the mistaken or missing information and attempting to provide the corrective "facts" about vaccines (Goldenberg 2016). Government communications to Canadians during the COVID pandemic, for example, encouraged the publics to "Get the facts. Visit Canada.ca/COVID-vaccine to learn more." The WHO offered COVID advice to the publics using a "mythbusters" format of infographics and videos that debunked misinformation and presented the facts based on up-to-date clinical research (WHO 2022).

While there is no harm in sharing and amplifying reliable information regarding public health and vaccines, it remains a questionable choice as the frame and focus of the great majority of public health communications. This is because misinformation and misunderstanding are unlikely to be a significant cause of vaccine hesitancy. Once again, it is values and not scientific facts that need attention.

If misunderstanding and misinterpretation of the scientific evidence were the problems, the provision of accurate information and education would presumably correct this. Many years of education campaigns regarding childhood vaccination have not substantially decreased numbers of vaccine refusers and vaccine hesitancy has tipped upward (Goldenberg 2016). Furthermore, education levels are not reliable predictors of people's acceptance or refusal of vaccines.

Public mistrust of scientific institutions better explain vaccine hesitancy than does scientific misunderstanding and/or misinformation (Goldenberg 2021). Mistrust primes individuals to seek out and accept alternative claims by dubious experts regarding vaccines (rather than the converse assumption that misinformation causes mistrust) (Williams 2023). There is ample social science research examining parents' vaccine hesitancy and refusal; survey respondents and members of focus group participants frequently cite discomfort with medicine's close ties to pharmaceutical and biologics

industries (e.g., EKOS Research Associates 2018). Racialized communities hit hardest by COVID morbidity and mortality were polled to have higher than average levels of COVID vaccine hesitancy both before the vaccine was approved and in the early months of the vaccine roll-out. Testimonials revealed that community members do not trust the vaccines, the health care system, and/or the government. To illustrate, see the 2020 *New York Times* investigation "I Won't Be Used as a Guinea Pig for White People" (Hoffman 2020).

Those misgivings are far from the wild conspiracy theories that researchers have tried to link to "anti-vax" views. Instead, they are fissure points that are then seemingly confirmed when parents' questions about childhood vaccines are shut down by their health care providers (Goldenberg 2021, 157–8). Or they build upon histories and contemporary experiences of medical racism, structural inequalities, and social injustices that are, in fact, what led to racialized communities being hit so hard by COVID (e.g., Mosby and Swidrovich 2021).

Yet many vaccine criticisms *sound* like scientific misunderstanding when the critics, most of whom are non-experts, cherry-pick dubious studies and put so much energy into arguing technical points about adjuvants, boosters, titers, spike proteins, and mRNA platforms. While arguments over vaccines are often centered on the science—with vaccine advocates pointing to the strong consensus on vaccines and vaccine skeptics curating research to generate narratives of suppressed science showing vaccines to be unsafe, ineffective, or unnecessary—the science largely serves as placeholders for the values at stake. At issue in vaccine controversy, much like heated climate change disagreements (Sarewitz 2004), is what follows practically from accepting the science as true (Goldenberg 2021). The scientific evidence serves as proxy for the values that are on the line, such as individual liberties vs. common goods, medical progress vs. "natural" living, what duties we have toward others and toward future generations, among other value debates. None of these issues are easily settled and, importantly, none will be settled by the science of vaccines.

Vaccine debates, then, are about much more than vaccines. Instead, they capture a host of temporally, geographically, and historically specific concerns. In liberal democratic societies, those concerns include how technology shapes our lives, who decides on and regulates those technological intrusions, the relationship of knowledge and power (i.e., whether science works for the people or for corporate interests), government overreach and individual liberty, community cohesion, health disparities, income inequality, globalization, and more.

Further, because vaccination requires government-led coordination, funding, and enforcement to achieve the collective goal of public health, vaccine choices are unavoidably tied to politics and policy. This brings us to the focus of the chapter, namely controversies in vaccine policy. In addition to imbricating the ethical tension between individual choice and collective need, vaccine policies often serve as de facto gauges of public dis/approval of their government. Government agencies invest in purchasing and access to vaccines (e.g., through cost and availability) and engage in health communications to advance public health objectives. The publics thereby interpret the act of vaccination to be not only a health choice but a political act. In jurisdictions where COVID vaccines were accessible to the populace and encouraged and/or mandated as a collective effort to end the pandemic, vaccination affirmed trust in government and the institutional structures managing the public health crisis, while refusal repudiated public health infrastructure and government leadership.

32.3 Vaccine policies

The success of vaccination campaigns hinge on public trust in government institutions (Adhikari, Yeong Cheah, and von Seidlein 2022; Goldenberg 2021; Krastev et al. 2023) because so much legislative decision-making and oversight go into these public health efforts (see, for example, "Regulating vaccines for human use in Canada" [Government of Canada 2020]). Governments make numerous

decisions about whether and how to promote individual vaccines (Navin and Attwell 2019). First is the determination of whether to license a vaccine for sale and administration within its jurisdiction. Second is which of its licensed vaccines will be recommended, to whom, and how (e.g., through public outreach and/or by being included in a recommended vaccine schedule). Third, a government must determine whether to publicly fund, or facilitate the funding of, individual vaccines in order to improve access. Finally, a government must decide whether the vaccine should be mandated, and what will be the magnitude of the burdens imposed by the state on those who do not comply (Navin and Attwell 2019). Government oversight does not end once policy has been put in place. Ongoing safety and surveillance monitoring necessitate that policies may change, for instance, when population-level disease frequencies increase or decrease, vaccine safety concerns arise or subside, and the publics respond favorably or unfavorably toward the health communications and/or vaccination requirements placed on them.

The remainder of this section on vaccine policies will focus on mandatory vaccine policies ("vaccine mandates"), the most controversial vaccine policy option, and the clearest means for illustrating how values infuse vaccine policy determination, as policies are political instruments meant to affirm or attain explicitly political goals.

32.3.1 Vaccine mandates

The majority of the public, professional, and scholarly attention to vaccine policy is focused on vaccine mandates, a variety of policy options for increasing vaccination rates by requiring target populations to receive the vaccine. Vaccine mandates vary in terms of scope, sanctions, and severity (Navin and Attwell 2019). Despite infringing on personal choice, arguments from a variety of rights-based ethical and political traditions converge on the permissibility of careful and measured deployment of state-sanctioned vaccine mandates. There are also consequentialist, justice, and virtue ethics arguments supportive of mandatory vaccination under the right conditions (e.g., Boyneburgk and Bellazzi 2022; Reiss and Caplan 2020).

Whereas liberal states normally uphold personal choice regarding health care interventions, exceptions are made for emergency conditions (e.g., epidemics, war), and situations that threaten the legal, economic, or political foundations of individual rights themselves (Matthews and Menzel 2023, 719–20). Liberal political frameworks, then, include conditions under which the state may override its prima facie commitments to individual rights and liberties, including overriding consent when the individual or institutional actions pose a reasonably demonstrable threat to others. Vaccine jurisprudence follows this course. School-entry vaccine mandates have survived legal challenges (for an overview of US court challenges, see Hodge and Gostin 2002), as have numerous workplace vaccine mandates. During COVID, for example, Canadian labor arbitrations upheld many workplace COVID vaccine mandates, even those with severe penalties like possible termination of employment upon refusal, finding vaccine requirements to be reasonable given the gravity of a global pandemic and the right to a safe workplace in contexts where accommodations for unvaccinated workers (e.g., working remotely) could not be implemented (Hudson 2022).[4] As well, legal opinion did not support the claim, made by numerous vaccine mandate critics, that COVID vaccine requirements violate Canadian Charter of Rights and Freedoms (Bogart 2021).[5]

The general consensus, then, is that vaccine mandates are morally and legally justified when utilized prudently, with attention to the proportionality of the public health threat relative to the individual and collective benefit offered by a safe and effective vaccine. The harm of infringement of individual liberty should be minimized by implementing the least restrictive policy among the available alternatives. Mandatory vaccination "should only be used when all other reasonably available options have been exhausted. Free informed choice to participate is the most desirable option,

followed by a variety of nudging strategies aimed at promoting higher rates of immunization" (Cave 2017). Vaccines must also be easily accessible to all targeted demographics before mandates are considered (Omer, Betsch, and Leask 2019). Mandates enter into policy consideration because education, persuasion, and nudging are often insufficient to achieve community protection (also known as, and unfortunately termed, "herd immunity"). Although scholars may disagree about the thresholds for implementation, they agree that there are circumstances under which mandatory vaccinations are permissible and even necessary given the overriding public health importance of vaccination (Matthews and Menzel 2023, 721).

32.3.2 Vaccine mandates to establish social norms

While the ethics of vaccine mandates literature tends to focus on the moral permissibility of coercive interventions, vaccine mandates have not always served the purpose of coercion. Attwell and Navin (2023) detail the history of school-entry vaccine mandates in the US, describing these policies as the "lynchpin of American vaccine governance since the mid-20th century." When state-level school-entry mandates were first introduced in the 1960s, they were not clearly at odds with American predilection for individual liberties because the new mandates did not aim to coerce. There was bipartisan political support for policy efforts to create social norms of vaccination among parents of school-aged children, who were "basically willing" but "needed to be socialized into giving their children the newly available vaccines" (Attwell and Navin 2023, 672). Mandates would boost compliance and thereby help establish that norm (Attwell and Navin 2023, 672; Omer, Betsch, and Leask 2019). School-entry vaccine mandates helped stave off measles outbreaks in schools by increasing coverage, and they importantly included non-medical exemptions (NMEs) in all but two US states, thereby stopping shy of governing parents' vaccine behavior.

Scholars examining other liberal democracies than the US have similarly pointed to the normalizing of vaccination enabled by introducing vaccine mandates that include non-coercive costs and benefits favoring vaccination.[6] Implementing a vaccine mandate conveys to the publics that vaccination is not a personal choice, but rather something expected as a member of a population, similar to taxes (Giubilini 2020). Mandates also formalize a moral duty owed to protect others from harm (Navin 2013; Pierik 2018). In France, one rationale given for expanding school-entry vaccine requirements from three to eleven vaccines in 2018 was to message that the previously elective pediatric vaccines were important and necessary for protecting children's health (Ward, Colgrove, and Verger 2018). Mandates thereby need not be understood to be inherently coercive, intentionally punitive, and thereby predictably damaging to public trust (Goldenberg et al. 2023). By creating social norms around vaccination, making vaccine refusal more costly or inconvenient than vaccination, and by providing assurance that others are also making their contribution, mandates can improve vaccine uptake rates with minimal public antagonism. Omer, Betsch, and Leask (2019) recommend policymakers to "mandate vaccination with care" to strike the right balance of prescription without antagonism.

32.3.3 Vaccine mandates as coercive policies

An increase in measles outbreaks in high-income countries in the 2010s (Poland and Jacobson 2012) put a perceived weak point in mandatory vaccination policy under critical scrutiny: The NME (e.g., Attwell and Navin 2023; Bednarczyk et al. 2019; Navin and Largent 2017; Olive et al. 2018).

In the US, for example, measles infection peaked in the late 2010s and the country nearly lost its measles elimination status in 2019. The NME, available in all but two US states' school-entry vaccine policies, was identified as the problem in otherwise good policies. Indeed, use of the NME by vaccine-hesitant and vaccine-refusing parents had increased over the past two decades

and the connection between under-vaccinated pediatric populations and measles outbreaks was already well established (Bednarczyk et al. 2019). Additionally, US states with more cumbersome or restrictive NME access had lower infection rates (Omer et al. 2012). Legislators capitalized on public frustration toward the so-called anti-vaxxers and used the political moment to introduce severe restrictions and difficulty for obtaining NMEs. One state, California, boldly eliminated all NMEs for school-entry vaccination in 2016 (NB: Medical exemptions remained untouched). This new policy, and others like it that followed in other states and countries, signified a turn in vaccine policy toward coercion.

While adjustments to NMEs seem warranted and prudent in the context of increased measles cases and increased use of an exemption that was designed to be administered sparingly (so as to keep community-level protective immunity secure), the policy changes were perceived as punitive and "hard-line" (Rainford and Greenberg 2015). Indeed, elimination of NMEs radically reshaped vaccination governance by undermining previous "soft" policy pressures (e.g., the use of behavioral strategies like nudging) and instead constrained parents' vaccination behavior by removing choice. These new, more restrictive policies were also criticized for being "quick fixes" to suboptimal vaccination rates that clumsily antagonized the publics rather than attending to practical and sociological barriers to vaccination, namely poor access to vaccines in underserved communities (Navin and Attwell 2019; Omer et al. 2019) and declining public trust in scientific and health governance (Goldenberg 2021).

Attwell and Navin (2023) characterize the legislative attention to delimiting NMEs in pediatric vaccine policy throughout the latter half of the 2010s as a regime change in vaccine policy from the earlier "mandate & exemption" period beginning in the 1960s, described above as an effort to normalize vaccination through gentle (i.e., non-coercive) policy, to a regime of "unencumbered mandates." Without exemptions in place to satisfy those parents unwilling to vaccinate their children, vaccine mandates were repurposed as coercive policy. Numerous difficulties followed: More galvanized and better organized vaccine refusers, more requests for medical exemptions, more physicians censured for providing those medical exemptions, more pressures on schools to monitor and enforce vaccine policies, and more political polarization overall. This heightening of vaccine-related politicization arguably arose because these long-standing school-entry mandates were never designed to discipline and punish wayward parents as a mode of vaccine governance (Attwell and Navin 2023, 672).

Around the same time that NMEs were under legislative scrutiny, the discourse of vaccine skepticism and refusal shifted from safety concerns to the language of *medical freedom.* Historically and to the present day, vaccine-critical rhetoric has rested on two principal claims: First, that vaccination is a dangerous procedure with risks that outweigh benefits, and second, that efforts to pressure or compel people to be vaccinated (or to vaccinate their children) violate individual rights (Schwartz 2012). A 2019 study of Facebook posts found that in recent years, arguments related to individual liberty had grown more prominent in anti-vaccination messaging, with vaccine refusers increasingly framing their choice as a civil right (Jamison et al. 2020). This shift leans on a history of American health libertarianism (otherwise known as the "health freedom movement") that dates back to the 1800s (Grossman 2021, 10–23). It also served as a poignant counterresponse to the political climate and policy levers pushing toward more restrictive vaccination choice. This change in political speech by vaccine opponents starting 2014–2015 (recounted by Haelle 2015 and discussed in Goldenberg 2022), and later used as a rallying cry against all COVID pandemic public health measures, including vaccine mandates, spurred a rhetorical redirection by vaccine proponents as well. With the language of "freedom" usurped by vaccine skeptics and public health refusers, liberal governments and public health agencies became the unwitting enemies of personal choice, family autonomy, and individual liberty. In response to this unfortunate framing, vaccine advocates doubled down on the science supporting vaccination. What followed was a new vaccine policy discourse that pitted freedom against science.

32.4 Controversies in vaccine policy: Science vs. freedom

This brings us back to the Canadian House of Commons, where the governing Liberal Party promised to use science to steer national COVID vaccine policy and to (inexplicably) lead the country out of a severe public safety threat created by the "Freedom Convoy" siege on Ottawa. Vaccine policy controversy is now commonly framed as "science vs. freedom," an uneven pitting of allegedly value-free truths against a fundamental value. This frame ought to be dismantled in favor of attending to the values at stake on both sides of vaccine mandate controversy. Vaccine mandate dissenters are clear that they value individual choice and find vaccine mandates as well as other public health collective measures to be unwanted infringements on that value. On the other side, "follow the science" is less clear in its value orientation by allegedly rising above the political fracas in favor of facts and truth. However, the political strategy of "follow the science" *is* a value-laden strategy insofar as it prioritizes the common good (public health) over individual liberty, as well as privileging technocratic governance, that is, decision-making by a selective group of experts rather than more democratic methods that involve public consultation. It also quiets dissent as "misinformed" or worse. This appeal to science sidesteps political discourse and tolerates the unintended but not unexpected consequence of societal polarization on ideological grounds. "Follow the science" strategies, much like the aspirational "evidence-based policymaking" movement that began at the turn of this century (Hammersley 2005; Marston and Watts 2003), (ironically) politicize science by insisting that science can stand outside of politics.

Technocratic governance is presumably not the political goal of all vaccine mandate supporters. The millions of global citizens who not only chose COVID vaccination but supported mandates were arguably yearning for the aspirations of evidence-based/science-led politics, including health and safety, and a calm and civil political climate. Vaccine mandates do not, of course, cultivate such a climate (nor does outrage directed at those who refuse vaccination). Vaccine mandates may underperform, as widespread vaccination and disease eradication do not easily arise from restrictive policies introduced into hostile political climates.

As per the previous discussion of "mandate with care," vaccine mandates that are insensitive to context will be perceived by the publics as punitive. COVID vaccine mandates were largely seen this way due to design and communication. In terms of design, many vaccine mandates were criticized for being applied to low-risk populations (e.g., school-aged children), for ignoring natural immunity from prior COVID illness, for providing very selective medical exemptions, and for not providing NMEs. The penalties were perceived to be severe: Restricting access to public spaces, education, and employment—with insufficient regard for the socioeconomic, political, and cultural harms created by constrained choice, as well as the inequitable distribution of these harms among different social groups. COVID vaccine mandates did not strike the delicate balance between increasing vaccination without promoting public backlash. Communications from global leaders suggested that this balancing act was not a priority.

French President Emmanuel Macron said in a January 2022 interview with *Le Parisien* that his government's proposed "vaccine passport," which limits access to public spaces to vaccinated people only, was meant to "piss off" the unvaccinated (he used the vulgar term "emmerder" in French) (Beaumont et al. 2022). In that same interview, he made the offensive claim that somebody who acts irresponsibly is no longer a citizen (Ataman, Mawad, and Rob Picheta 2021). Other world leaders were equally derisive. Former British Prime Minister Tony Blair described unvaccinated people as "not just irresponsible. You're an idiot" (Davidson 2021), then-premier of Western Australia, Mark McGowan preferred the descriptors "crazy" and "deranged" (Fiore 2021), while then-Romanian Prime Minister Florin Citu likened vaccine protesters to "terrorists" (Xinhua 2021). These are only a few examples.

This type of "othering" those with whom we have political disagreements, whereby their rationality and characters are dismissed and their arguments derided as "misinformation," might lead

one to believe that deliberation is impossible. We have a handful of highly used tropes to sediment this view—"post-fact society," and "truth decay" brought on by "information warfare" (see Hwang 2020)—and to seed the idea that "follow the science" might be all that is left to do.

Yet it has already been mentioned that "following the science" as a response to policy questions is evasive at best, illiberal at worse, and prone to public backlash. The hard work of participatory democratic politics is not evaded; instead, its importance is underscored. When the science is mostly not settled, and it is multiple (economic, immunological, sociological, virological, behavioral, and more), which science is being followed? How are the trade-offs between the plurality of diverse warrants for different courses of action being handled?

Furthermore, policymaking does not follow a linear trajectory from science to action. This argument has been amply made by critics of "evidence-based policymaking" (EBPM), an aspirational concept first introduced to political circles in the late 1990s/early 2000s (e.g., BBC News 2010). The goal was to free policymaking from the everyday pressures of politics by getting the facts right. In *The Politics of Evidence-Based Policymaking*, political scientist Paul Cairney argued that EBPM so conceived is unrealistic. Cairney implores readers to drop the naive understanding and "ill-considered aspirations" of EBPM as "comprehensive rationality" whereby "policymakers are able to generate a clear sense of their preferences, gather and understand all relevant information, and make choices based on information" (2016, 2–5). Policymaking is better understood as "bounded rationality" where "policymakers have unclear aims, limited information, and unclear choices" and use various shortcuts to reach policy decisions (Cairney 2016, 5). The policy process is defined by

> how problems are 'framed' by their advocates and how they are understood by the policymakers held responsible for solving them. It is about the power to ignore or pay attention to particular studies, to link the evidence of a policy problem to a particular solution, and to ensure that policymakers have the motive and opportunity to turn a solution into policy.
>
> *(Cairney 2016, 6)*

This account highlights how policymaking needs more scrutiny in order to make the process more inclusive and comprehensive, and so the emphasis should be on political legitimacy rather than more rhetoric of following the science. Policymaking, by this account, needs an expansion rather than contraction of the sphere of policy influence.

To bring this discussion back to the parliamentarians in Ottawa, science cannot lead politics and policy. We have to decide what we care about, and what our goals are. These are political questions that require political deliberation, unavoidably so. Only then can science inform and enable the direction in which the demos have chosen to go. Those are decisions of value for which the scientific experts have no special authority to decide, and democratic deliberation, difficult as it may be, is the legitimate means.

32.5 Conclusion

The argument in this chapter has been that vaccine policies have come to signify many political hopes and desires—for health and safety, civil discourse, political calm, and rational agreement—and pronounced political fears concerning government overreach and infringement of rights and liberties. The framing of the conflict as "science vs. freedom" denies the values underlying the "follow the science" stance. In response, "medical freedom" arguments misrepresent liberty in absolutist terms. Instead, individual freedom and vaccination requirements have a long moral and legal history of concurrence, and attention should be focused on establishing ethical vaccine requirements rather than denying the possibility. Both sides play into political hyperbole that disable the possibility of political agreement.

Notes

1 Both Canada and the US had exempted unvaccinated cross-border truckers from COVID-19 vaccine requirements to prevent exacerbating existing supply chain disruptions, but that exemption in Canada ended on January 15, 2022, and the US exemption ended on January 22, 2022. Of the 120,000 Canadian licensed truck drivers who regularly served cross-border routes, approximately 85 percent were vaccinated against COVID-19 by January, leaving up to 16,000 Canadian truckers potentially affected by the new restriction that spurred the Freedom Convoy protest.
2 See Crawford (2022).
3 The World Health Organization (WHO) declared COVID-19 to no longer be a global health threat and therefore removed the designation of "pandemic" in May 2023.
4 The rights of employers to collect data from employees about their COVID vaccination status was also upheld by the Office of the Privacy Commissioner of Canada (2023).
5 The Canadian Charter of Rights and Freedoms (the "Charter") is a bill of rights entrenched in the Constitution of Canada.
6 Mandatory vaccination exists in some form in most countries, most commonly for childhood vaccine-preventable diseases (Gravagna et al. 2020).

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