

## 4 A Principled Argument for Liberty-Limiting Vaccination Policies

In chapter 2, we argued that the state has a compelling interest in preventing (major) outbreaks of infectious diseases. By far the most effective way in which such outbreaks can be precluded is through the establishment and maintenance of robust herd immunity in cases where this is possible, and the only way such collective protection can be maintained is through mass vaccination. A disease like measles used to be endemic in most societies, and this led to regular outbreaks, but thanks to immunization programs, it became a rather abstract and remote risk, at least in high-income countries.<sup>1</sup> However, measles outbreaks such as the 2015 Disneyland outbreak in California, those in various European countries in 2018, and the 2019 outbreak in the city of New York have provided parents and the public with renewed firsthand experience of the reality of (the threat of) these diseases and their harmful impact. When herd immunity is hard to attain, or when it can no longer be taken for granted because of an emerging vaccine hesitancy, the question arises whether coercive policies are justified.<sup>2</sup>

In this chapter, we develop a principled argument for liberty-limiting vaccination policies by exploring the implications of John Stuart Mill's "harm principle." This principle offers the strongest possible justification for liberty-limiting vaccination policies: constraining freedom of individuals is justified if it is necessary to prevent harm to others. There are different ways in which a choice to forgo vaccination (for oneself or, more often, for one's child) can be harmful or at least impose a risk to others. First, an unvaccinated person can encounter the disease, fall ill, and, subsequently, infect and thus directly harm other persons. Second, even if an unvaccinated individual does not directly cause severe disease in another person, they still add to the risk of a pathogen transmitting from person to person. The aggregated effect of

the many individual decisions not to vaccinate is that the disease is more likely to spread and that the collective good of herd protection is undermined in society. Herd immunity not only protects the health of vulnerable groups (as discussed in section 2.2) but also prevents societal disruption and damage caused by outbreaks. We argue that the second application of the harm principle—which appeals to the protection of the public good of herd immunity—does at least offer a principled ground for policies that sets limits to the freedom to forgo vaccination for oneself or for one’s child. There is also a third possible route for how the harm principle is relevant to immunization: parents’ choice to resist having their children immunized might be considered a matter of harm *to the children themselves*. We discuss this specific argument more in detail in chapter 5.

The public good of herd immunity is often also referred to in a different strand of ethical arguments, namely, that vaccination refusal amounts to *unfair freeriding* (see, e.g., Bутtenheim & Asch, 2013; van den Hoven, 2013). We explore this argument in section 4.4 but show that the argument of fairness is not fully successful.

#### 4.1 John Stuart Mill’s Harm Principle

In chapter 2, we presented several types of nonvoluntary immunization policies. Mandatory, compulsory, and forced vaccination policies all involve clear limits on the freedom of choice of citizens. The most solid reason for restricting individual liberty is the prevention of harm to others—as eloquently argued by John Stuart Mill in his essay *On Liberty* (1991). Mill analyzes the nature and limits of the power that collective bodies like the state can legitimately exercise over the individual. He argues that

the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. (Mill, 1991, p. 14)

Mill embraced the liberal idea that a government, or society at large, has no legitimate power to force individuals to behave and live the lives that others (government, religious leaders, a majority) deem best for them. Such paternalism, “either physical or moral,” cannot be justified. Mill argues

that everyone should have absolute freedom as long as it concerns “self-regarding” choices—that is, choices that only affect their own interests. The state does have a central role, however, in regulating behavior that can harm the interests of others.

This so-called harm principle is one of the cornerstones of the contemporary liberal-democratic tradition in legal and political philosophy. Its strength can be explained by pointing out how it captures the idea that liberty must be constrained within a society. After all, how one person uses their freedom will often affect the freedom and opportunities of others. If liberty had no limits—that is, if everyone were free to do as they wished irrespective of how their actions would affect the lives of others—in the end, no one’s freedom could be ensured. There would be nothing to prevent others from taking “the freedom” to steal your property, to endanger your life or health, or to coerce you to do or believe what they wanted you to. Of course, most people would not do these things, but in a democratic society, government should protect the freedom of all citizens to shape their own lives. To protect each person’s freedom, the freedom of all must, to a certain extent, be limited. This element of the harm principle—that prevention of harm to others is in principle a good ground for setting limits on freedom—is something that every democratic perspective must endorse. One does not have to be as straightforward a liberal as John Stuart Mill to endorse this position. Every democrat, whether egalitarian, libertarian, communitarian, or socialist, must agree that the state is justified in limiting everyone’s freedom if this is necessary to prevent harm to others. The antipaternalist strand in Mill’s philosophy, or, more broadly, his assumption that prevention of harm to others is *the only ground* for coercion, will be much more controversial. For our purposes, we can focus on the uncontroversial part of the harm principle: curtailing people’s freedom to prevent them from harming others is, in principle, justified.<sup>3</sup>

Of course, this is not about any minor harm or inconvenience. If it comes to state coercion, Mill employs a rather strict conceptualization of harm: “interests, which, either by express legal provision or by tacit understanding, ought to be considered as rights” (Mill, 1991, p. 83). Acts of individuals that are hurtful or lack due consideration for the welfare of others but that do not violate any of their constituted rights may not be punished by law, only by opinion (Mill, 1991, p. 83). Arguably, protection against severe infectious

diseases does fit within such a restricted conceptualization of harm, and this opens the door for seeing a choice to avoid vaccination as harmful. Mill's principle concerns the prevention not only of intentional (or malevolent) harm but also of actions that unintentionally affect the basic interests of others, which is specifically relevant for our discussion. In the case of a contagious disease, persons can unknowingly—hence unintentionally—contract a disease, transmit it to others, and amplify an outbreak.

Governments have compelling reasons to prevent that from happening. The harm principle implies that the state is justified in limiting the freedom or autonomy of citizens when this is necessary to prevent persons infecting others and thus spreading disease. Some contagious diseases can spread through the air, via coughing and sneezing, and others are spread via direct skin contact or exposure to body fluids or materials (blood, feces, etc.). Immunization is arguably the most effective route to avoid getting infected and spreading a disease to others; a well-considered decision to forgo freely available vaccinations might therefore be considered a case of allowing the possibility that one will harm others. In the following sections, we discuss two ways in which such a choice could be harmful and thus be considered a ground for the government to curtail individual liberty: it may result in direct infection and therefore the harm of others, and it may undermine and harm the public good of herd protection. In chapter 5, we explore a different way of seeing nonvaccination as harmful: as parents' choice to disregard their own child's basic interests.

## 4.2 Vaccination Refusal as Causing Direct Harm to Others

Consider the following two examples, taken from recent newspaper articles. In an article in the *New York Times* in 2015, Tamar Lewin presented the case of Rhett Krawitt, a then six-year-old boy with leukemia. After four years of chemotherapy, the boy was vulnerable to infections and therefore could not be vaccinated (Lewin, 2015). Because his health was so fragile, it was essential that as many people as possible around him were vaccinated, because being infected with a disease such as measles could have been fatal for him. But his parents were struggling with the fact that many children at his school, including some in his classroom, had not been vaccinated because parents had “philosophical” objections against immunization. What if one of these unvaccinated classmates infected him with the disease? Shouldn't schools or

the government prevent such infections—for example, by denying unvaccinated children access to schools?

Or consider this example from March 2014 in the Netherlands. A child whose parents had decided not to participate in the vaccination program was infected with measles, and before the symptoms of the disease became manifest, she attended a day care center and therefore exposed several other children there to the pathogen. As a result, three babies fell ill. Micha, a six-month-old baby—too young to be vaccinated himself—suffered from severe complications, had to be treated in intensive care for a few days, and almost died. In an interview with the Dutch newspaper *de Volkskrant*, Micha's mother said, "They took a gamble with the health of my child. I cannot stop them from deciding not to vaccinate their children. But don't send your unvaccinated children to a nursery in which young babies are crawling around who, because of their young age have not yet been vaccinated" (Eftting, 2014). Such cross-infections can especially occur in child day care centers, because unprotected younger babies (the first MMR vaccination is only administered when a child is twelve to fifteen months old) often share facilities with children up to four years old. Older toddlers are usually more adventurous and mobile than younger ones and therefore have a much bigger chance of contracting and spreading disease. Micha was harmed by being infected, and this could have been precluded easily and safely if the older child—the vector—had been vaccinated. The moral judgment of the baby's mother about the parents of the older child is understandable. Normally, we do expect parents to take care that their own children do not harm or pose a risk to the health of other children.

These cases illustrate why a common defense cited by vaccination refusers does not hold. This defense consists of an argument that no one can complain that vaccine refusers cause a risk—after all, people who do endorse immunization will be protected because they have chosen to be vaccinated. Vaccine skeptics use this argument to reduce vaccination to a self-regarding choice, and this challenges our appeal to the harm principle. Their argument, however, does not hold because many children are, like Micha, too young to be vaccinated and thus vulnerable to infections. Other persons, like Rhett, are highly vulnerable and cannot be immunized, or they have been immunized as a child but have become vulnerable due to immune-compromising diseases or the frailties that come with old age. Forgoing vaccination is not "merely" a self-regarding choice; it does impose a risk and can indeed cause

harm, not just to oneself but to others as well. Of course, that does not imply that such a choice is malevolent; the harm is not intended, but it remains a consequence of a choice.

Jessica Flanigan makes an analogy with other choices that have unintended harmful effects. She compares vaccine refusal with celebratory gunfire: people are not entitled to impose deadly risks on others, and this applies to both cases (Flanigan, 2014). By firing guns in the air while celebrating Independence Day in the US, patriot gunmen risk other people getting hit by bullets that fall back down to the ground. She argues that even though this risk may be remote, it is not a reason to conclude that a prohibition of such gunfire is unjustified. In several states, celebratory gunfire is a misdemeanor that is punishable even if the gunfire does not harm anyone. If the analogy holds, we have a ground to prohibit vaccine refusal as this also creates a risk that an individual—or their child—is causing serious harm to others.

A weakness in Flanigan's position is that it suggests that any action that involves increased risk of injury to others might be a candidate for being prohibited. Lots of things we do, and should have the right to do, increase the risk of harm to others. Biking around on a Sunday afternoon increases the risk of harm to pedestrians, and leaving a backyard pool unsupervised increases the risks that the children who live next door sneak in for a swim and drown. It is not so much about whether our acts increase the risk of harm to others but whether this increased risk can be publicly justified as part of a socially beneficial scheme (Brennan, 2018). Is the small extra risk that nonvaccination generates justifiable? One argument that says that it is suggests that fundamental rights are at stake, such as the freedom of religion of nonvaccinating citizens, and that compulsory vaccination might violate bodily integrity. This requires the government to balance the social interest of countering the risk of nonvaccination with the recognition of the fundamental rights of nonvaccinators, which we do in the upcoming chapters.

Another possible problem in Flanigan's analogy is that the wrongness of celebratory gunfire involves a wrong *act* and the wrongness of nonvaccination is a matter of *inaction* or *omission*. John Stuart Mill, however, explicitly also ranks certain inactions as falling within the scope of the harm principle.<sup>4</sup>

A person may cause evil to others not only by his actions but by his inaction, and in either case he is justly accountable to them for the injury. The latter case, it is true, requires a much more cautious exercise of compulsion than the former. To make any one answerable for doing evil to others, is the rule; to make him

answerable for not preventing evil, is, comparatively speaking, the exception. Yet there are many cases clear enough and grave enough to justify that exception. (Mill, 1991, pp. 15–16)

Mill considers this to be specifically relevant in the context of collective endeavors undertaken for mutual benefit: every member who receives the protection of society owes a return for that benefit and “the fact of living in society renders it indispensable that each should be bound to observe a certain line of conduct towards the rest.” This implies not only not harming the relevant interests of others but also “bearing his share (to be fixed on some equitable principle) of the labors and sacrifices incurred for defending the society or its members from injury and molestation” (Mill, 1991, p. 83). Vaccination programs can be considered exactly what Mill describes here: collective, socially beneficial schemes that offer protection to society at large.

The upshot of this first application of the harm principle is that although it is possible to see forgoing vaccination as a matter of *creating a risk of direct harm*, the seriousness of that risk needs to be evaluated in the context of the broader societal benefits that vaccination programs offer.

### 4.3 Compelling Persons to Contribute to Herd Immunity

Mill not only discusses the implications of the harm principle for choices that may lead to infecting and thus directly harming other individuals but also considers the idea that people can make choices that are harmful in an indirect way, insofar as these undermine certain societal goals. More specifically, he invokes the principle as a possible basis for compelling members of society to contribute to collective projects that benefit all. The harm principle thus also allows enforcing a person to do

positive acts for the benefit of others, which he may rightfully be compelled to perform, such as to give evidence in a court of justice; to bear his fair share in the common defence, or in any other joint work necessary to the interest of the society of which he enjoys the protection. (Mill, 1991, p. 15)

We will argue that mass immunization aiming at herd protection is such a joint work necessary to the interest of society and that the state is justified to limit individual freedom on those grounds.

Our argument proceeds in two steps. We first reformulate the various benefits of herd protection and explain how these constitute a public

good. Subsequently, we discuss separately the case where vaccine coverage is still far too low to achieve robust group protection and the case where such group-level protection is already secured. We claim that achieving and maintaining group-level protection against a very serious disease that is threatening public health and societal life is in the shared interest of everyone in that population. As argued before, this shared interest is closely linked to one of the core functions of the state. Vaccine refusal is not merely a failure to contribute; it also undermines the collective endeavor to protect an important public good, and therefore we see it as causing harm to all.

### 4.3.1 The Public Good of Herd Protection

The group-level protection that comes with herd immunity surfaces if sufficient people have become immune, either through experiencing the disease or through vaccination. The importance of establishing and maintaining group protection against serious diseases is obvious. First of all, it offers specific protection for children like Micha (section 4.2) who are too young to have completed their immunization schedule, for immunocompromised patients like Rhett, and for persons whose immune system has responded insufficiently to vaccination. Second, group-level protection reduces the risk of outbreaks; outbreaks will inhibit interpersonal contact, either through infectious disease control measures (isolation, quarantine, closing of childcare centers or schools, etc., as happened in spring 2020 during the COVID-19 outbreak) or through fear of infection. Indeed, during an outbreak of a disease, fear of infection may spread more rapidly than the infectious disease itself, and this has an impact on social life even if the outbreak remains contained. In these ways, the prevention of outbreaks is clearly important.

Herd protection thus brings multiple benefits. Interestingly, many of these benefits are open to all—to people who do opt for vaccination and also to those who do not vaccinate themselves or their children. Herd protection is a *public good* because it has the following features (Dawson, 2007). First, the good cannot be produced by an individual alone but requires a cooperative scheme. To produce the outcome, general though not necessarily universal compliance is required, and it also involves an ongoing activity—it is not a one-off event. This is clearly the case with group protection: we need collective immunization programs to achieve a coverage



required for herd immunity, and group protection can only be sustained if almost all children receive their shots.

Second, once it is produced, the public good is *nondivisible*—the benefits cannot be divided within a group; it is *nonrivalrous*—one person's use of it does not limit its use by others; and, most important, it is *nonexcludable*—it is impossible to exclude individuals from benefiting from this good. This implies that there is a similarity and a difference between those who cooperate in the scheme and those who don't. The similarity is that noncooperators have equal access to the benefits of the cooperative effort. As explained above, herd immunity protects the health of many persons and the well-functioning of society that is relevant to everyone, vaccine enthusiasts, hesitant parents, and straightforward vaccine refusers alike. The difference is that only cooperative persons contribute to the provision of the public good, while vaccine refusers do not.

Such public goods are usually indispensable for society because they involve the provision of services that are necessary for societies to flourish, such as public education, protection against crime, general societal infrastructures, or military defense. At the same time, they are vulnerable since they can only be generated by collective action, and given that benefits will be available to collaborators as well as noncollaborators, there is a risk that some people will seek to refrain from doing their share. According to Mill, failure to do one's fair share in such a cooperative effort is causing harm to society (and thus other citizens within society), which can be a reason for the state to act and enforce or compel citizens to contribute.<sup>5</sup>

One of the best examples of an indispensable public good is the protection against floods in regions that are close to the sea or to rivers. For instance, in the Netherlands, almost one-third of all the populated land is below sea level, and for centuries, local societies have built dikes and created polders to expand livable areas, and they have maintained those polders by draining out the water. Obviously, maintaining the dikes and other water-related works to prevent flooding is a necessary condition for public safety and thus for societal life, and thereby an essential public good. Throughout history, the building of dikes and other water-related works to protect against floods has been realized as a collaborative effort, which, on a larger scale, would have been impossible without a government that steered activities and, if necessary, also enforced people to contribute through physical labor or taxes.

Protection against infectious diseases through the establishment of group-level protection is another example of such a public good. Indeed, if we consider it a case of “joint work necessary to the interest of the society of which he enjoys the protection,” Mill’s harm principle can support curtailing individual freedom to refuse vaccination. Let us unpack this argument in two parts, which apply to two different contexts.<sup>6</sup>

### **4.3.2 Striving toward Group-Level Protection against an Immediate or Imminent Threat**

The COVID-19 pandemic has provided the world with firsthand experience of the impact of both a novel and dangerous infectious disease and the harsh social distancing measures that are necessary to control it. The pandemic has shown not only that many people fall ill and die but also that hospitals become overwhelmed with patients requiring life-saving medical care. The measures that must be taken in response to a pandemic can bring social life to a standstill: schools, workplaces, and restaurants are closed; public transportation is limited; and people may not be allowed to leave their homes and must work from home and homeschool their children. There may be various ways to overcome such a disaster, but if a disease can be combatted by immunization, and if such a vaccine becomes available, collective vaccination seems to be the best possible and most effective route to contain and stop the epidemic. As in many other vaccination programs, policies that promote the adoption of a new vaccine serve two aims: to protect individuals against the risks of symptomatic disease and to inhibit or stop the spread of infection within the population. Circumstances might be such that achieving herd protection is even considered indispensable to containing the epidemic for a long time and to be able to lift all infection control measures that brought social life to a grinding halt. If it is indeed a novel virus, no one is protected, and the focus cannot be limited to childhood vaccination. In chapter 8, we use the COVID-19 pandemic case in more depth to illustrate the ethical discussions surrounding the vaccination of adults. For now, we focus on the following general question: can the harm principle be invoked as an argument for setting limits to freedom of choice if herd protection has not yet been attained?

First of all, it is clear that if achieving a high vaccination rate leads to group-level protection, it will benefit each and every one of us—those who

are still vulnerable but also those who are already immune. We all have an interest in common: as members of the public, we are vulnerable, if not to the infection itself, then at least for the disruptive effects of outbreaks and the necessary control measures. It will be important to achieve and maintain a situation in which quarantine, lockdowns, and other measures are not necessary anymore and can be lifted.

Given the stakes that all of us have in stopping the epidemic, it is reasonable to claim that all of us are harmed if some groups actively refuse vaccination and thus obstruct or inhibit the objective of group-level protection. Their refusal is on par with refusal to follow necessary social distancing measures to slow down or contain an epidemic. It could be that complying with the measures and, for example, undergoing tests and quarantine if a test is positive is, for some, a reasonable alternative to vaccination. But vaccination refusal may still inhibit a collective attempt to achieve herd protection. Therefore, governments can appeal to the harm principle to justify liberty-limiting policies that compel citizens to accept vaccination. This is in line with the core tasks of government: to protect its population against major threats now and in the future, to ensure the prerequisites for an open society, and to protect the basic interests of adults and young citizens who, for medical reasons, cannot protect themselves. If a democratic government initiates such a program but then sees the objective of group protection endangered by the noncompliance of some groups, vaccination refusal can be considered as harming others or, more specifically, as harming an interest that every person has in their capacity as a member of the public.<sup>7</sup> Whether or not a mandatory or compulsory policy is actually justified and proportionate will depend on a myriad of factors. Yet in a case like this, the harm principle offers a clear basis for justifying the infringement of liberty for the sake of protecting society via herd immunity.<sup>8</sup>

### 4.3.3 Maintaining the Public Good of Robust Herd Protection

Interestingly, the public good of herd protection mostly emerges as a positive externality of individual choices of people who primarily seek to protect themselves or their own child. This dimension makes vaccination different from many other collective goods, and we discuss that in more depth in section 4.4. This predominantly private incentive to vaccinate means that vaccination programs have a much better chance of establishing collective

protection on a voluntary basis than, for example, the collective endeavor of building dikes or the joint defense of military services. Ideally, this incentive would be so common and strong that robust herd immunity would be established and maintained voluntarily, and governments would have no reason to use force and set limits on individual freedom. There would still be a principled ground for coercion—because the harm principle would be applicable—but enforcing it would be unnecessary. Mill acknowledges that

there are often good reasons for not holding him to the responsibility . . . either because it is a kind of case in which he is on the whole likely to act better, when left to his own discretion, than when controlled in any way in which society have it in their power to control him. (Mill, 1991, p. 16)

Unfortunately, in the past few decades, people have become increasingly hesitant or skeptical toward vaccination: the private benefits of immunization appear insufficiently visible or persuasive for them, and indeed a significant number—though still a small minority—forgo vaccination. As a result, vaccination coverage against diseases like measles and pertussis is not optimal, and even if group-level protection is established, it is not as robust as one would hope. More and more national governments have considered and sometimes adopted mandatory programs to counter this tendency.

This leaves us, however, with an important question. So far, we have argued that the harm principle offers a reason for states to restrict the freedom of individuals (notably parents) to refuse vaccination offered by basic programs, because this means that the state ensures collective protection against outbreaks of serious infectious diseases. But is coercion necessary if, as it happens, most people comply anyway and if the number of voluntary vaccinations is sufficient to achieve group-level protection? It is indeed a central, if not defining, feature of public goods that they require general but not necessarily universal compliance. If herd protection is established through general compliance because most people collaborate voluntarily, it seems as if an individual's refusal to contribute cannot be phrased in terms of harm to others. After all, the noncooperation of a still small minority will make little to no difference to the successful maintenance of the public good and thus can hardly be considered harmful to others. Does this imply that our appeal to the harm principle is not convincing if herd immunity is established?

This is a specific version of a common problem in discussing collective harms (Cripps, 2011; Kagan, 2011; Nefsky, 2012, 2019; Polkamp, 2019). If

one individual's actions as such do not seem to be much of a difference to the harm that might occur—but would occur only if many acted like them—how can *their* choice be considered a case of harm to others? If this is a ground to restrict their freedom, it seems as if they are penalized for what others are doing. How can that be justified?

For several reasons, we believe this skepticism about collective harm is misplaced, and certainly so in the case of vaccination policies. First, we endorse Elisabeth Cripps's general analysis of collective harm. If individuals contribute to collective harms like climate change or outbreaks of infectious diseases, those persons should not be held responsible for their individual choice. The individuals taken together are *collectively* responsible in the sense of being responsible as a putative group who *jointly* cause harm. As Cripps argues, curtailment of their individual freedom is *prima facie* legitimate when the duties imposed on the individuals are fairly allocated as part of a collective endeavor to prevent that harm (Cripps, 2011), and that is what occurs in a mandatory vaccination program.<sup>9</sup>

Second, even in circumstances of herd immunity, the risk of harm is real. There is no reason to assume that voluntary programs will guarantee sufficient group-level protection in the longer run. Few countries (with or without mandatory programs) have been successful in establishing and maintaining complete herd immunity—which in the case of measles would require approximately 95 percent of the population to be vaccinated—certainly not since the modern vaccination hesitance has gained ground. Even if hesitant and actively refusing parents are still a minority, their number is large enough to obstruct the establishment of such a high coverage. As a result, outbreaks can and do occur, as witnessed, for example, between 2016 and 2019 in Ukraine, Italy, and the city of New York—even outbreaks that were severe enough to disrupt societal life. This offers a justification for the state to initiate vaccine mandates.

Third, one should not underestimate how refusals undermine collective protection even if the protection is already in place. Noncollaboration is not merely a matter of “not doing one's part” by contributing to a public good; it involves leaving a weakness in the collective protection in place. A good analogy is citizens building a wall together to protect the city against enemies. If you don't do your part by putting some bricks in the wall, the other citizens will have a larger burden and will probably do “your part” as well. Yet collective vaccination is different: the protective “wall” here

consists of all persons who are vaccinated (or otherwise immune), so if you choose not to be vaccinated, you create a weakness in the collective protection that cannot be compensated for by others. When the protective “wall” is complete, there will still be a hole at the spot where you were supposed to lay your bricks.<sup>10</sup> In this way, each and every failure to collaborate generates a weakness in the protection of public health and, as such, undermines the collective endeavor at large.

David Lyons argues that if not contributing to important public goods cannot independently be characterized as harmful to other individuals, the contribution of everyone is still required because the collective endeavor supports a social practice that prevents significant harm (Lyons, 1979). This argument also applies to immunization. Although vaccination remains the norm, there is—and there will probably remain—a vocal minority of hesitant parents that remains doubtful about the necessity and safety of vaccination for their children. Such hesitance may be criticized from a scientific point of view, but in a society in which diseases like measles and polio have become uncommon, and in which rumors about real or alleged side effects of vaccination easily spread via social media, some hesitance will probably be inevitable. Many of these parents will comply with immunization but will remain susceptible to the concerns that antivaccination groups or other hesitant parents put forward. Moreover, if they see others getting away with just “opting out,” with no clear negative consequences, this will make them wonder why they should comply; it facilitates seeing opting out as a reasonable and legitimate option and thus nudges them to forgo immunization as well. In these ways, individual vaccination refusals constitute a collective harm; they undermine the collective endeavor toward the public good of group protection, the prevention of outbreaks, and possibly the (remote yet not impossible) global objective of eradicating diseases like polio and measles.

A related argument is given by Alberto Giubilini (2019, pp. 44–46), who claims that, as a society, and maybe even globally, we have a collective responsibility to prevent dangerous infectious diseases by, where possible, establishing and maintaining herd immunity. Seeing herd immunity not only as a desirable public good and collective endeavor but as something that people collectively *have a moral duty to* establish offers additional support to our analysis. Our argument, however, goes one step further: it is not just that people have a moral duty to contribute to herd protection; we argue that vaccination refusals undermine policies that are part of the state’s central

tasks: to maintain group-level protection against infectious diseases. Citizens have a right to such protection, and those rights are impeded—though indirectly—by people who deliberately opt out of a well-established vaccination program.

In short, vaccine refusal undermines an important collective endeavor that is meant to prevent harm, and in that sense, it can be seen as falling within the scope of the harm principle. Moreover, if vaccination refusal becomes more common, the group-level protection may fall apart, leading to more disease outbreaks and thus more widespread harm—which would us bring back to the scenario of the previous subsection.

#### 4.3.4 Nonvoluntary Vaccination Policies: A Moral and a Legal Perspective

We conclude that vaccination refusal can be considered to fit within the scope of the harm principle and that within a liberal democracy, there is ground for restricting the individual liberty not to be vaccinated. It may be difficult to argue that the state is justified in compelling individuals to accept vaccination for themselves or their children as a matter of preventing direct harm to concrete others, but nonvaccination is certainly a matter of harm to others as it undermines the collective endeavor necessary to establish and maintain herd immunity. Mill's harm principle thus serves as a justification for the government to make vaccinations against serious diseases mandatory or compulsory. This claim is also in line with several legal cases and democratically accepted policies. A landmark court case in the US is *Jacobson v. Massachusetts*, in which the Supreme Court allowed a compulsory immunization campaign after the 1901–1903 smallpox outbreak in Boston. According to the court,

The liberty secured by the constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good.

The Court established that the state “may impose reasonable regulations to ensure the public health and safety, even if such regulations infringe individuals’ personal liberty.”<sup>11</sup> The goods of public health and safety require collective action and collaboration, and state power may be necessary to ensure such cooperation. In more recent times, the European Court of Human Rights has in various decisions allowed domestic authorities to mandate vaccination. In *Solomakhin v. Ukraine* (2012) and *Boffa and others v. San Marino*

(1998), the court ruled that limits can be set to the right to private and family life (art. 8 of the European Convention of Human Rights) and to the freedom of thought, conscience, and religion (art. 9) in order to protect the health and the rights of others.<sup>12</sup> Most recently, in *Vavříčka* (2021), the court ruled that the mandatory Czech immunization policy is indeed a limitation of parental prerogative (art. 8), but it is a justified limitation given that it serves a legitimate purpose:

The objective of the relevant legislation is to protect against diseases which may pose a serious risk to health. This refers both to those who receive the vaccinations concerned as well as those who cannot be vaccinated and are thus in a state of vulnerability, relying on the attainment of a high level of vaccination within society at large for protection against the contagious diseases in question. This objective corresponds to the aims of the protection of health and the protection of the rights of others, recognised by Article 8. (“*Vavříčka*,” 2021, p. 60, ¶ 272)

The court thus emphasized not only the protection of the individual vaccinee but also the indirect protection of vulnerable persons via herd protection (we discuss this issue further in chapter 5). Finally, recent government decisions to implement or tighten mandatory vaccinations against measles in, for example, Italy, France, California, and New York City, have also survived democratic and legal scrutiny (Camilleri, 2019, p. 247).

The justification in terms of the harm principle is most clear in contexts where herd immunity has not yet been established in a robust way, but we have also explained that there is a ground for compulsion in cases where herd immunity is more solid. In the latter case, the justification may be less strong because there is some room for refusal of vaccination. In the next chapters, we analyze how this can play a role in designing proportionate policies. First, though, we explore a different route that can be taken, which could offer additional support for nonvoluntary vaccination when coverage is already more than sufficient. This is the argument that in such a case, if refusal is not clearly harmful, it would still be *unfair*.

#### **4.4 Freeriding: Is Fairness an Additional Argument for Vaccine Mandates?**

Enjoying the benefits that arise from a collectively produced good without doing one’s share toward its production may not only be seen as morally



problematic because it harms society's collective endeavor to maintain a public good. It can also be considered morally repulsive for other reasons. Enjoying the benefits of a joint enterprise without contributing to the collective project is often labeled "freeriding." The term can be used descriptively, just to describe that type of behavior, but it is often used as an evaluative or even derogatory concept, which implies that such behavior is considered intrinsically wrong. The wrongness of freeriding might offer an additional route toward liberty-limiting government intervention to enforce collaboration. The argument would then be one of fairness: it is unfair to reap the benefits of a joint enterprise without sharing in the burdens that are needed to produce the good. More in general, democratic governments should see to it that burdens and benefits of policies are distributed in a fair and equitable way. The principle of fairness is applied to vaccination in Alberto Giubilini's justification for compulsory vaccination (2019). In the following subsections,<sup>13</sup> we present his justification and further explore the argument about the unfairness of freeriding. We reject the argument of fairness, however, because it does not take into account the fact that herd immunity is a very peculiar type of public good—one that supervenes on private goods.

#### 4.4.1 Vaccination Refusal as Unfair Freeriding?

For Alberto Giubilini, the starting point is that citizens *collectively* have an *obligation* to contribute to important public goods (2019). This is an appealing idea, certainly for a problem like global warming. The challenges that climate change creates for the current and future generations are enormous, and given that global warming is clearly the result of the CO<sub>2</sub> emissions that are caused by our modern way of living, humanity should take responsibility for preventing further emissions and mitigating the effects of climate change. It makes sense to see this responsibility as a collective responsibility as we are creating the problem together and also because attempts by individual persons to mitigate climate change are futile unless they are embedded in a concerted action with many other people.

In a similar vein, contagious diseases spread from human to human, which involves all of us as causal links. Collective protection also requires concerted efforts, and this can be seen as supporting a collective responsibility to achieve herd immunity. The question is, though, how such joint obligation relates to the duties of each individual citizen. One could argue

that individuals who refrain from doing their part are harming others, as we have done in the previous sections. Giubilini, however, focuses on how the benefits and burdens of the collective obligation are distributed:

Thus, the collective obligation to realize herd immunity generates a certain amount of “burdens”: a certain number of individuals will have to be vaccinated. I call vaccination “a burden” in this context because some people are opposed to it and because vaccination does involve some small inconvenience (possible temporary pain of the injection, having to pay a visit to the doctor, potentially a financial cost, minor risk of some side effects, etc.). . . . In any case, the relevant question, for our purposes, is the question as to how such burdens should be distributed among individuals who form the collective with the moral obligation to realize herd immunity. It is safe to assume that such burdens should be distributed fairly, to the extent that we think that fairness is an important value that needs to be taken into account when distributing any kind of burden involved in the realization of important public goods. Thus, fairness demands that each individual does whatever she reasonably can in order to contribute to the fulfilment of the collective or shared obligation, regardless of the actual impact any individual action would have on the realization of the collective outcome. (Giubilini, 2019, pp. 50–51)

In other words, the principle of fairness requires that any individual who can contribute to herd immunity and who can bear the (small) burdens, that is, persons without medical exemptions, should do their fair share regarding the fulfillment of the collective obligation. This is in line with Mill’s argument that the harm principle can involve compelling people to *do their fair share* and accept the burdens that this involves in the collective projects from which they benefit as well. We have already argued that the harm principle does justify compelling people to contribute to the joint project of herd immunity because it prevents harm, but we did this without discussing the “fair share” element in more detail. We can now see how fairness sets two constraints. First, the harm principle cannot—as a matter of fairness—demand more of individuals than that they should do their fair share. In this sense, it sets a constraint on what can be required. Arguably, as far as contributions to herd immunity are concerned, the only thing that most people can do is to have themselves or their children vaccinated—so in that sense, everybody’s contribution is equal. In other contexts, for example, concerning our joint obligation to reduce CO<sub>2</sub> emissions, it is possible that your “fair share” is much larger than mine, if only because you emit much higher levels of greenhouse gases than I do or because, due to your wealth, you are in a much better position to make more sustainable but also more expensive choices.

Second, fairness also implies that each of us should *at least* accept and bear our fair share of the burdens of establishing herd immunity. Of course, these burdens are only minor inconveniences and remote side effects, but it still makes sense to distribute burdens and benefits in an equitable way. If there are various ways to divide and distribute benefits and if the stakes of a collective project are very high—that is, if the benefits but also the burdens are significant for most people involved—we might need to discuss in more detail what an equitable distribution involves. Should individuals who are worst off in some sense be exempted from sharing in the burdens? Or should those who contribute most to the collective risk (i.e., spread of infection) bear a larger share? In vaccination programs, there is only one way to contribute, which is to be vaccinated, and the burdens are minimal. In this context, a relatively simple understanding of fairness may initially be sufficient: reaping the benefits of a collective project but refusing to contribute to it and share the burdens of it is not fair.

The advantage of this line of argument, compared to our own public goods account of the harm principle, is that it may offer a justification of compulsory vaccination that does not lose any of its strength in a context of robust herd immunity. As explained earlier in this chapter, the harm prevention justification for mandatory immunization is less strong in such a context: nonvaccination can still be considered harmful as it impedes the collective undertaking, but the harmful effects on public health might well be negligible. If we can make a case that nonvaccination is also *unfair*, though, this argument applies regardless of whether herd immunity is at risk or whether such group protection is robustly established. Even if 99 percent of citizens voluntarily comply and accept the burdens of immunization, the remaining 1 percent who refuse are still acting unfairly: they enjoy the benefits but refuse to contribute.

What is at stake here is, of course, that vaccination refusal in a context of herd protection amounts to freeriding. The central moral problem of freeriding is not just that it may undermine the realization of the public good but that some people *take a free ride* when others all share in the burdens of producing the good. The wrongness has to do with how people take advantage of others without reciprocating, and this may imply an unfair distribution of burdens and benefits. The claim about the unfairness of freeriding regarding a jointly produced public good is difficult to resist—and this is not different in the case of vaccination. The intuitively most objectionable case of freeriding is encouraged by Robert Sears, a US antivaccination celebrity also known

as “Dr. Bob,” who is blatantly honest in his advice to nonvaccinating parents: “I also warn them not to share their fears with their neighbors, because if too many people avoid the MMR vaccine, we’ll likely see the disease increase significantly” (Sears, 2007, pp. 96–97, as quoted in Navin, 2016, p. 143). This advice, deleted in the second edition of his book (Sears, 2011), clearly reflects a deliberate intention to freeride on the cooperative practices of other people. How can it be fair to seek to benefit from herd immunity as much as anyone else but not to contribute a fair share—especially where we jointly have an obligation to achieve such a public good? Of course, many vaccination refusers are not that explicit about their intention to freeride. And in the case of parents who object to vaccination on anthroposophist grounds and who would *prefer* their children to be exposed to measles (see section 3.2), it is questionable whether their rejection of vaccines amounts to freeriding at all. Bradley and Navin (2021) argue that vaccine refusal is hardly ever motivated by the idea of profiting from other people’s choices to participate in collective schemes, and therefore they hold that vaccine refusal is not to be considered freeriding at all. However, we deem parents who refuse immunization to be free riders, because they consider the risk for their child too high given the remote benefits. These parents do endorse the fact that the chance their child will be infected is relatively small. But that fact is a result of successful collective vaccination, that is, the cooperation of most other parents in immunization schemes. So they are having a “free ride” even though few of them will perceive it in that way. The question, then, is whether such a choice is unfair.

Before analyzing this stance about the unfairness of vaccination freeriding, let us briefly take a closer look at the concept of fairness itself and try to grasp what makes unfair practices wrong. This is not an easy task, because “fairness” is such a basic and intuitively appealing idea that it is hard to pin it down in straightforward terms. Few authors have been working on the concept of fairness as closely as John Rawls did, but even he seems unable to offer a precise definition. This is probably the best we can get:

The concept of fairness . . . relates to right dealing between persons who are cooperating with or competing against one another, as when one speaks of fair games, fair competition, and fair bargains. The question of fairness arises when free persons, who have no authority over one another, are engaging in a joint activity and amongst themselves settling or acknowledging the rules which define it, and which determine the respective shares in its benefits and burdens. A practice will strike the parties as fair if none feels that, by participating in it, they or any of the

others are taken advantage of, or forced to give in to claims which they do not regard as legitimate. (Rawls, 1958, p. 178)

Fairness only makes sense in a context in which free and reasonable people acknowledge certain rules as legitimately guiding how they should relate to one another. A fair distribution of burdens and benefits of social cooperation is, then, one that is determined by general principles that all can agree with. If certain beneficial goods can only be made available to anyone if (almost) all contribute to its creation—as in a public good—and if such contribution comes with not insignificant costs, then it is reasonable for people to reject free riders: individuals who deliberately reap the benefits of the collective endeavor without contributing and thus take advantage of those who do contribute.

This shows a lack of respect for others as free and equal individuals and also for the importance of having mutually beneficial practices and rules. Moreover, by reaping, hence accepting, those benefits, others can reasonably claim that they voluntarily commit themselves to the societal scheme and thereby to an obligation to do their fair share. It is like freely deciding to engage in a particular societal practice or play a game: doing so commits one to follow the rules of the practice or game as well. In Rawls's view on public goods, accepting the benefits is one of the conditions for seeing cooperative action as something that is morally required as a matter of fairness (Rawls, 1971, pp. 111–112).

Whether or not accepting the benefits is a necessary condition for seeing freeriding as unfair has been subject of philosophical debate. Garret Cullity argues that under specific conditions (collaboration results in a net benefit, the obligation to collaborate is generalizable, and refusers have no legitimate moral objection to the scheme), freeriding is always unfair. Deliberately accepting the benefits or appreciating the public good at stake is not among those conditions. Cullity's analysis is applied to immunization by Mariëtte van den Hoven, who infers that all vaccination refusers who benefit from herd immunity engage in unfair freeriding, simply because they choose not to do their fair share in the collective scheme (van den Hoven, 2013).

Whether or not one follows Rawls's more restricted account of unfairness or Cullity's expanded fairness principle, it seems clear that Robert Sears's advice as quoted above amounts to unfair freeriding. The same applies to vaccine refusers who see the risk of immunization as outweighing the remote benefits, although less visible. As we argued in response to Bradley

and Navin's suggestions, these parents can only consider the benefits as remote given the fact that most people are immunized and thus have contributed to herd protection. In this way, refusers do assume the benefits of the public good.

More debate is possible when we focus on religious refusers and anthroposophists. On the one hand, they could respond that they avoid Rawls's criterion as they do not voluntarily accept the "benefits" of group immunity; these are imposed on them, and they would rather avoid them. On the other hand, they could claim that a vaccination scheme—at least *from their perspective*—does not result in a net benefit at all, thereby resisting the first of Cullity's conditions for unfair freeriding. Moreover, religious refusers could appeal to their freedom of religion that is infringed, thus claiming to have a legitimate objection to the scheme, which implies that Cullity's third condition does not apply either. Although we cannot fully agree with these responses, we will not elaborate this discussion.<sup>14</sup> We do not need to because, ultimately, the argument that vaccination refusal is unfair fails for other reasons: as we show in the next subsection, vaccination freeriding does *not* result in an unfair distribution of burdens and benefits. The principle of fairness therefore does not offer additional support (at least not one that is independent of the harm principle) for setting limits to freedom of choice.

#### 4.4.2 The Peculiar Public Good of Herd Immunity:

##### Freeriding Is Not Unfair

Central to our understanding of the wrongness of freeriding is that the distribution of benefits and burdens involved in the production of a public good should be fair. This involves, at least, that those benefits are open to all and that the costs are shared equitably. In this section, we argue that the distribution of benefits and costs, especially the costs, that comes with maintaining herd protection is not unfair, even if certain groups do take a free ride. This implies that neither vaccination freeriding nor immunization policies that allow room for freeriding are unfair.

The main reason why vaccination free riding cannot be unfair is that the public good of group-level protection supervenes on the private benefits of everyone who gets vaccinated. In this respect, it differs from many, if not most, other public goods. By definition, a public good can only come about if there is sufficient cooperative action (realized through government policy or more spontaneous collective efforts), and if the good comes about, then

everyone benefits: it is nonexcludable. If there is insufficient support, or if the collective effort is otherwise insufficient, the collective good will not come about, and no one will benefit. If a dike along a riverbank has been realized for only 90 percent of the required length, then everyone will have wet feet or worse, and the efforts of the contributors to build the dike will have been completely in vain. Either the dike is fully completed, and it protects everyone, or it is not, and then no one is protected and all the contributions were in vain. In other cases, people will still benefit to some extent, in relation to the proportion of citizens who were willing to cooperate. For example, in a case involving the collective efforts of fishermen to refrain from polluting a lake, if many of them are willing to cooperate, most of the potential pollution will be averted. But here, too, everyone benefits but the burdens are only carried by those who are willing to contribute.

Interestingly, the public good of herd immunity comes about only via individuals who seek and realize personal immunity against infection for themselves. It is unlikely that many individuals opt for vaccination for the sake of contributing to herd immunity: they first and foremost opt for vaccination to protect their child or themselves.<sup>15</sup> This protection comes with some inconveniences and even a very small risk of serious side effects, but generally, people see the individual benefits as by far outweighing the burdens. And if a sufficient number of people have managed to receive protection for themselves or their children, then group protection arises as an “added benefit.” Whether or not this added benefit is attained, every vaccinated individual will benefit from their own vaccination anyway—apart from a few individuals for whom the vaccine fails to be effective. If the number of people who participate is insufficient for group protection, almost each vaccinated individual will still be protected and benefit; this is exactly what happens in HPV vaccination campaigns that only target girls and not boys.

Herd protection is an important public good that comes about as a result of many people successfully securing protection for themselves and their children. This is what makes herd immunity a peculiar public good: it is a public good that supervenes on private goods. For each vaccinated person, the attainment of herd protection offers only a minor, perhaps even a negligible, added benefit. However, for society at large, it is significant. Herd immunity protects all children who are too young to be vaccinated and other vulnerable groups such as elderly people or immunocompromised patients. Vaccination refusers also clearly benefit from collective protection

even though they do not contribute to the collective effort to achieve herd immunity—hence, they do not share the burdens. But are there any burdens at all for individuals who do contribute to herd immunity? Vaccination offers them individual protection, and herd immunity is an added benefit that comes about, free of charge, if vaccine coverage is sufficient.

Therefore, those who get vaccinated cannot complain that free riders unfairly reap the benefits without sharing in the burdens: from the perspective of vaccinating individuals, there are no burdens at all in producing herd protection. But if herd immunity constitutes a benefit that is open to all, at no cost or no burden, then *the distribution of burdens and benefits cannot be unfair*. This is a remarkable result, especially if one also considers that noncooperators profit much more from the public good of herd protection than collaborators do.<sup>16</sup>

Yet even if the distribution of burdens and benefits cannot be considered unfair, isn't vaccination refusal as such unfair? Maybe it is not about how burdens and benefits are distributed but about the moral character of the choice that defectors make: they don't do what they ought to do—contribute their part of a collective moral obligation, as Giubilini puts it. Although we think there are good reasons to criticize such choices from an ethical perspective, it is less clear how this is, as such, a sufficient ground for constraining their freedom; this is independent, of course, from the conclusion we reached in section 4.3. Vaccination refusal constitutes a collective harm that falls within the scope of the harm principle. The assumption that certain choices are immoral—because of the failure to do what is morally required—is not as such a ground for a curtailment of freedom in a liberal democracy. Although it will be clear that we are making *ethical* judgments about vaccine refusals throughout this book, our primary aim is to discuss the *political* argument concerning how liberal-democratic states should deal with persons who do not voluntarily participate in these programs and thus undermine the collective endeavor of establishing robust collective protection.

To be clear, this does not imply that vaccination freeriding is morally acceptable; it is still wrong because it is morally objectionable as it shows a lack of solidarity with vulnerable persons who depend on herd protection. To put it more strongly, free riders occupy the “protective seat” in the herd that was meant for the most vulnerable persons, and that can rightly be considered morally repulsive.



The conclusion is that even though vaccine refusal can be considered morally objectionable because it involves freeriding on the public good of herd protection, this does not generate a new argument for nonvoluntary policies in addition to those we have already presented in section 4.3. Vaccination freeriding might be morally objectionable, but it is not unfair in a sense that warrants a liberty-limiting policy.

#### 4.5 Conditions for Mandatory or Compulsory Immunization

Let us take stock: in this chapter, we have offered a principled justification for vaccination policies that restrict individual liberties and freedom of choice. Central to our argument is John Stuart Mill's harm principle and, more specifically, the necessity it generates for governments to maintain herd protection. Our argument, which revolves around collective protection and the public good of herd immunity, is not so much an *ethical* argument about interpersonal harms or the moral wrongness of freeriding; instead, it is a *political* argument about rights and collective harms. It starts by asserting that the state has a responsibility to protect people's rights and that robust herd immunity is one of the necessary means for protecting these rights. In this approach, individual vaccination refusal primarily constitutes a *collective* harm, since it undermines the collective endeavor toward group protection.

Individual vaccination is a necessary means for achieving herd immunity, and this justifies state-promoted vaccination through national immunization programs. It can even, in specific circumstances, justify more coercive programs to ensure that members of the political community contribute their fair share to herd protection as a public good in the Millian sense: "a joint work necessary to the interest of the society of which he enjoys the protection."

And the democracy argument kicks in here (Klosko, 1992, pp. 39–51; Simmons, 1979, p. 320). As we have already argued in section 1.9, it is essential for constitutional liberal democracies to strike a fair balance between democratic decision-making and the protection of fundamental rights.<sup>17</sup> Since those who want to establish the public good wish to impose an obligation on the noncooperator and to limit their freedom, they have the burden of proof. They should provide compelling arguments confirming why it is *necessary* to establish the public good, why the cooperation of all is essential in the

bringing about of the public good, and why the legal obligations it generates do not *disproportionately* limit the rights and freedoms of those who object (cf. the proportionality test, as presented in section 3.9). The noncooperator is invited to present arguments that oppose these arguments, but there is no *ipso facto* reason why the objector should have the power of a veto within a democracy against the obligation to do one's fair share to bring about an essential public good like the collective protection against (massive) outbreaks of vaccine-preventable diseases.<sup>18</sup> In a liberal democracy, the majority can, in the process of political deliberation and democratic decision-making, be justified in overruling the objection of the minority, as long as the public good to be achieved is considered essential and the infringements of fundamental rights are not disproportional.

But what does that imply in practice? Under what conditions would more coercive policies be justified? What would they look like in the case of childhood vaccination and in the case of vaccination for adults? And what other considerations are relevant? These questions set the agenda for the next chapters. Chapters 5–7 develop the argument for childhood vaccination, and chapter 8 develops the argument for vaccination for adults. Note, however, that our principled basis for mandatory or compulsory vaccination presupposes the following six elements.

First, there is sufficient (scientific) evidence that the vaccines in question are effective and safe. Scientific evidence cannot offer complete certainty, but the evidence is beyond reasonable doubt regarding those vaccinations commonly included in the national immunization programs of the various liberal-democratic states. In extraordinary contexts, it may be reasonable to proceed with compulsory vaccination even if one would have preferred more evidence before doing so—for example, during the outbreak of a novel virus—but these situations would be exceptions.

Second, the vaccines commonly included in national programs offer protection against diseases that are serious on both individual and population levels. Evidence about disease burden may support this, but ultimately this is a value judgment. In this book, we often focus on measles, assuming that the seriousness of this infection is beyond doubt. But in chapter 7, we discuss whether other, less severe diseases or vaccines that do not generate herd immunity can be included in mandatory childhood immunization programs as well.

Third, the infringement of liberty should be in proportion to the harm that is to be prevented. We outlined the principle of proportionality at the end of chapter 3. Judging proportionality involves taking the context of policies into account, and we do so in the next chapters, first focusing on childhood immunization (chapters 5–7) and then on the immunization of adults (chapter 8).

Fourth, the implementation of nonvoluntary policies should not be counterproductive in that it leads to a backlash: societal resistance and distrust that ultimately might lead to a decline in immunization coverage instead of an increase. In section 9.4, we return to the issue of vaccine confidence and how liberty-limiting programs can still be trustworthy.

Fifth, the policies implemented should be the outcome of a democratic process. A legitimate interference with fundamental rights requires political deliberation and democratic decision-making. For that matter, a political debate not only is necessary for the legitimacy of policy but also can contribute to gaining sufficient societal support.

The sixth and final consideration is that governments, when they are considering a coercive policy, should reflect on their *all-things-considered* credibility as a public health authority. Given how important it is that people comply with infection control and other public health measures, public health authorities should be trustworthy. Mandatory or compulsory immunization should not be considered “the” solution to a low vaccination rate if government has so far expected people to pay for vaccination themselves. If limited access to vaccination has led to low compliance, then equitable access should be secured before restrictive policies are considered (Toffolutti et al., 2019).

The harm principle can be invoked not only to prevent indirect collective harm (undermining herd protection). It may also be a ground on which the state can intervene in choices that parents make in the interest of their children. In the next chapter, we discuss the extent to which the state should protect children against the potentially harmful consequences of decisions made by nonvaccinating parents.



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# Inducing Immunity?

## Justifying Immunization Policies in Times of Vaccine Hesitancy

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