# Notes

## Chapter 1

1. In 1978, ten months after the person with the last case of endemic smallpox recovered, the virus escaped from a Birmingham laboratory, infecting two other persons. This "last salute" of the virus—an expression used by Donald Hopkins—killed one person and drove the director of the lab, the famous smallpox researcher Henry Bedson, to suicide (Hopkins, 2002, p. 310).

2. Moreover, it might be unjustified if a government attempted to eradicate some diseases, because the (opportunity) costs of doing so are too high compared to the ultimate benefits (cf. Caplan, 2009).

3. And only when most circulating flu viruses are well matched with those used to make flu vaccines (Hannoun, 2013). However, since flu is such a prevalent disease, this vaccine saves a lot of lives annually, despite its limited efficacy (Foppa et al., 2015).

4. Our focus on collective immunization programs implies that we will not discuss vaccinations for specific groups or individuals (such as for travelers or professionals), therapeutic vaccines, or postexposure vaccination.

5. See, for example, Jonny Anomaly, who defends a public goods conception of public health that offers only very limited room for tackling the social determinants of health or diseases like obesity (Anomaly, 2011). Such conceptions have been criticized by, for instance, Justin Bernstein and Pierce Randall (2020).

6. Note that it is far from obvious that immunization is always easily accessible in Western democratic countries. In chapters 4 and 7, we argue that equitable access to vaccination is a precondition for mandatory policies.

## Chapter 2

1. Libertarians might still have grounds for opposing *mandatory* vaccination. See, for example, the discussions by Bernstein (2017), Kowalik (2022), and Brennan (2018).

2. If administered at that moment, the vaccine generates the most optimal lifelong protection. Protection is less optimal when the vaccine is administered earlier.

3. For example, according to Jonny Anomaly's public goods conception of public health, public health policies should not aim at a high vaccination rate if the public good of herd immunity public is unattainable (Anomaly, 2011).

4. For a similar taxonomy, see Attwell and Navin (2019).

5. Antivaccination groups spread the wildest speculations via anecdotal evidence of "alternative medical truths," while official sites can only provide peer-reviewed information and medical specialists are handcuffed by professional standards in their attempts to counter this fearmongering. The legal problem here is that denialists are protected by the right to freedom of speech to disperse their views (cf. section 9.3). Despite this, a government should make serious attempts to ensure that the unscientific and ungrounded claims of these groups do not dilute the voice of evidence-based science too much. For an analysis, see Venkatramana et al. (2015, p. 1422).

6. This approach does not curtail the freedom of parents, although it requires them to confirm whether their child, once it has a place in the venue, has undergone the required vaccinations.

7. Such an approach is sometimes called "mandatory declination" (cf. Ribner et al., 2008).

8. The withholding of child benefits may, from a financial perspective, have similar effects to a criminal fine, as discussed next. But the impact of the latter measure is larger because once a vaccine refuser has been criminally convicted, this implies that they are no longer a member in good standing of the political community (Navin & Attwell, 2019, p. 1047).

9. In situations where parents have access to reasonable alternatives (homeschooling or applying for a nonmedical exemption for school entry), we would see this as a mandatory, not a compulsory program.

10. The problem with the "intervention ladder," however, is that it suggests that the justification of coercive public health measures is only about health and liberty (Dawson, 2016). In our view, *if* more coercive strategies are justified, it is not obvious that the smallest infringement of freedom is always to be preferred. In our discussion of the vaccination of adults in chapter 8, we will argue that in some circumstances, it is better to make vaccination refusal illegal (a compulsory policy) than to exclude unvaccinated citizens from social activities (a less restrictive, mandatory policy). See also sections 7.3 and 8.4.

## Chapter 3

1. A fourth group, libertarians, do not oppose vaccination per se but governmental interference in their life in general. They argue that no one, especially not the state,

can dictate what they can do with their body—or their child's body, for that matter (Wolfe & Sharp, 2002). A good example of such an argument can be found in *Jacobson v. Massachusetts*, the earliest vaccination case to be heard by the US Supreme Court, in which the plaintiff alleged that "compulsory vaccination law is . . . hostile to the inherent right of every freeman to care for his own body and health in such way as to him seems best; and that the execution of such a law against one who objects to vaccination, for whatever reason, is nothing short of an assault upon his person" (*Jacobson v. Commonwealth of Massachusetts*, 197 US 11, 1905). Libertarians can have an impact on these antivaccination sentiments when they join forces and form coalitions with antivaccination groups. This became clear in Donald Trump's 2020 reelection campaign in which skepticism toward the danger of COVID-19 and the necessity of the COVID-19 vaccination was an ingrained element of his *Make America Great Again* political identity. In this book, we will not discuss this libertarianism critique as a separate category because libertarians do not oppose vaccination *ipso facto*.

2. In chapter 6, we discuss how much weight the liberal-democratic state should give to religious, as opposed to nonreligious, opposition to vaccination.

3. Antivaccination groups typically forgo the "*anti*vaccination" label but present themselves as ex-vaxxers: "we used to follow the herd, but now we are enlightened"—or as "critical" of vaccination, employing general names such as the International Medical Council on Vaccination and the Dutch Association for Critical Vaccination (Nederlandse Vereniging voor Kritisch Prikken), and using slogans like "Vaccination is a choice. Your choice. No duty. Enlighten yourself and find your own information."

4. It remains an open question whether the current antivaccination movement is a new phenomenon or merely a new round of an old discussion. The historian Mark Largent (2012) emphasizes that there are only very few historical links between the "current" antivaccination movement (as it stood during the first decade or so of the twenty-first century) and previous movements.

5. Research by Amin et al. (2017) shows that appeals to the collective benefits of vaccination do not seem to motivate provaccination behavior among vaccine-hesitant people.

6. For example, only 0.5 percent of Italians identify themselves as "antivaccinated" (D'Ancona et al., 2019).

7. In addition, Jonathan Herring and Jesse Wall argue that bodily integrity is an important factor in and of itself and that it cannot be reduced to autonomy alone (Herring & Wall, 2017).

8. *X and Y v. the Netherlands*, App. No. 8978/80 (ECtHR, 26 March 1985), §22.

9. *Acmanne and Others v. Belgium*, p. 255; cf. *Y.F. v. Turkey*, App. No. 24209/94 (ECtHR, 22 July 2003), §33.

10. How far the bodily sphere extends, and thus also what counts as an invasion of that sphere, is a contested issue that also depends on the judgment of the person

who has the authority to decide about what is allowed or not—think, for example, about cutting someone's hair against their will. Normally, it is of course the person whose body it is who has that authority.

11. *Campbell and Cosans v. The United Kingdom*, App. Nos. 7511/76, 7743/76, Eur. Ct. H.R., at 12–13 (1982).

## Chapter 4

1. In many other parts of the world, the disease is still dominantly present. In 2019, more than 200,000 people died of measles, mostly children under the age of five (Patel et al., 2020).

2. In this chapter, we do not specify what form these liberty-limiting vaccination policies will take, for example, whether they will be mandatory or compulsory. We only make the argument that the state is, in specific circumstances, allowed to limit the individual freedom not to vaccinate. In chapters 6 and 7, we elaborate on the specific form these policies should take regarding childhood vaccination and, in chapter 8, for vaccination for adults.

3. In section 10.4, we reflect on the limitations of a Millian approach to public health ethics.

4. Much more discussion is possible about the acts-omissions distinction, on both theoretical and practical levels. Regarding the latter, childhood immunization is usually offered proactively as part of a program in which parents are urged to vaccinate their children; the vaccinations may even be considered part of the basic health care package to which every child should have access. In such a context, forgoing the offer is clearly a deliberate choice (even a decision "against the current"), and in that sense, it is not obvious at all that this is a matter of "inaction."

5. We take the fairness in "doing one's fair share" in the first place as setting upper limits on what the state can require of citizens. An individual person or small group cannot be required, as a matter of preventing harm, to bear all the costs needed for the realization of a public good, given that many if not all must contribute. Later, we also discuss whether fairness also constitutes an independent justification for compulsion, so that everyone should do *at least* their fair share.

6. A theoretical difference between the collective good of dikes and that of herd protection is that the former could, in theory, be established by one single wealthy benefactor, whereas the establishment of herd immunity requires the cooperation of many.

7. This is what Brian Barry called a public interest: an interest that every person has as a *member of the public* (Barry, 1965, p. 190ff; see also Verweij, 2000, pp. 51–67).

8. This argument might also be framed in consequentialist grounds, claiming that herd immunity is a necessary goal and that mandatory policies are the best way of

achieving this within limited time. Mill would probably not disagree, as he sees the harm principle as being consistent with his broader utilitarianism.

9. The idea of "fairly allocated" or a fair share in the collective endeavor is discussed in more depth in section 4.4.1.

10. We are grateful to Mark Navin, who helped us to develop this analogy argument.

11. *Jacobson v. Massachusetts*, 197 U.S. 11, 70 (1905); see also Albert et al. (2001).

12. *Solomakhin v. Ukraine*, App No. 24429/03 (ECtHR, 15 March 2012); *Boffa and others v. San Marino*, App No. 26536/95 (Commission Decision, 15 January 1998). See also Camilleri (2019).

13. Section 4.4 is a slightly revised version of Verweij (2022), published in *Public Health Ethics*, open access under a CC-BY 4.0 license.

14. Our brief response would be that the burdens and benefits of a public good should not be assessed from a merely subjective point of view (e.g., building on a vaccine refuser's own perception of risk) but should take into account a more impartial point of view. The claim that religious objections constitute a legitimate moral objection against (compulsory) collective vaccination also does not hold because, as argued earlier, the protection of public health constitutes a valid ground on which to restrict religious freedom.

15. A similar argument is made by Bradley and Navin (2021).

16. Bradley and Navin (2021) even argue that one cannot at the same time contribute to herd immunity and benefit from it. This somewhat stronger claim only holds in specific circumstances. Lucie White (2021) shows how the claim can't be upheld if we take subsequent benefits into account. For example, during the COVID-19 pandemic, the attainment of herd protection (if possible) could have led to earlier discontinuation of lockdown measures, which would have been to the benefit of every individual, also those who had contributed to collective protection by choosing to get vaccinated.

17. The third element, the rule of law, is less relevant in this specific discussion.

18. As we argue in chapters 7 and 8, even fundamental rights such as the right to freedom of thought, conscience, and religion and the right to integrity of the body can sometimes be overruled by a democratic majority.

## Chapter 5

1. See also Archard (1993, p. 113), Chervenak et al. (2016), and Dawson (2005).

2. This terminology and argumentation are very much inspired by the distinction between best and basic interests as proposed by Shapiro (1999).

3. Since the notion "what is best for their child" can lead to conflicting claims, for example, in families with children with special needs, parents are often best situated to assess and balance the competing interests of family members. This implies that they sometimes have to make difficult choices when their children's interests conflict (Diekema, 2004, p. 244).

4. Even though there is no evidence that thimerosal is harmful, it has been removed from all childhood vaccines since 2000 to forestall parental anxiety.

5. Parents who object to vaccination for religious reasons might not dispute the mainstream medical assessment of the risks and benefits of vaccination, and they might even concede that immunization is in the medical best interest of their child. The preventive intervention is considered wrong because it reflects a lack of confidence in the will of God.

6. On the interrelationship between parental rights and parental responsibilities, see Archard (2010) and Millum (2018).

7. An additional relevant factor in the analogy using the Jehovah's Witness case is that from a medical, and possibly also a legal perspective, forced vaccination, involving only a simple and brief intervention, is also less intrusive than a forced blood transfusion.

## Chapter 6

1. For an overview of the history of school-based vaccine mandates, see Conis (2015) and Colgrove (2006). While there were some school mandates in the US in the nineteenth and early twentieth centuries, it wasn't until the 1960s and 1970s that US states had really effective (and enforced!) school entry mandates.

2. Some central contributions to this debate are made by Greene (2009), Jones (2014), Mahoney (2011), Sandberg and Doe (2007), Seglow (2011), Shorten (2015), and Vallier (2016).

3. For a discussion of exemptions that do violate the rights of others and, thus, are much more contested, see Cohen (2015).

4. Although concepts like state neutrality and secular law are contested within the liberal tradition (cf. Pierik & Van der Burg, 2014), it is beyond dispute that government cannot randomly distribute exemptions from mandatory law by including some groups and excluding others without good arguments justifying this distinction.

5. Nyathi et al. (2019) showed that getting rid of vaccination exemptions in California implied that vaccination coverage rose preeminently in regions where vaccination coverage was lowest, "the outbreak hotspots," sometimes by as much as 26 percentage points.

6. For an overview, see Calandrillo (2004, pp. 386–387).

7. *Dalli v. Bd. Of Educ.*, 267 N.E.2d 219, 222–23 (Mass. 1971), as quoted in Calandrillo (2004, pp. 386–387).

8. *Brown v. Stone*, 378 So.2d 218 (Miss. 1979).

9. One interesting way to deal with this issue is Cécile Laborde's disaggregation approach (2015, pp. 593–599).

10. *United States v. Seeger*, 380 US 163 (1965, p. 176).

11. *Campbell and Cosans v. The United Kingdom*, App. Nos. 7511/76, 7743/76, Eur. Ct. H.R., at 12–13 (1982).

12. Article 9 of the ECHR protects the right of a person to manifest belief through "worship, teaching, practice and observance." A "manifestation" implies a perception on the part of the person involved that a course of action is prescribed or required (Murdoch, 2007, p. 15). Up to the time of writing, there is no case law that has settled whether the right to *hold* the belief that mandatory vaccination should be resisted also implies the right to *manifest* that belief. Although this uncharted territory is quite relevant in the discussion on exemptions from mandatory vaccination, it would affect both religious and secular claims and is therefore irrelevant for this discussion at hand.

## Chapter 7

1. We take the principle of proportionality as an overall legal judgment that encompasses several criteria. André Krom, for example, argues that applying the harm principle involves taking three conditions of reasonableness into account: the measure should be effective, it should not be larger than necessary (subsidiarity), and the infringement of freedom should be proportionate to the magnitude of harm to be averted (proportionality in a narrow sense) (Krom, 2016, p. 135). Our approach includes these as different elements of the principle of proportionality.

2. *Soering v. the United Kingdom*, EctHR (7 July 1989), 14038/88, para. 89.

3. These denominations are *de Gereformeerde Gemeenten in Nederland* and the *Oud Gereformeerde Gemeenten* (Pierik, 2013; Zwemer, 2001, pp. 14–19).

4. This way of presenting the argument has many similarities to how Mark Navin and Katie Attwell (2019) structured their article.

5. For a similar discussion, see Mello et al. (2020), who argue that it was wrong to even consider COVID-19 vaccination mandates until countries had put a lot of effort into persuasion and education campaigns.

6. See Pierik and Verweij (2019b) for an in-depth critique of the bill.

7. It cannot be required that infants are already *fully* vaccinated at day care entry; the requirement should be that they get their vaccinations when these are due. This implies their vaccine status needs to be checked regularly.

8. Some argue, and some even with good arguments, that day care attendance also benefits children, because it contributes to language acquisition, the learning of social skills, and getting accustomed to the rhythm of the day. It prepares children in a play-centered way for the school rhythm to follow. But the fact that school attendance is required by law and day care attendance is optional implies that the latter is seen as less essential for children's development.

9. The more coercive a program gets, the more it makes sense for the government to also set up something like the US National Vaccine Injury Compensation Program, better known as the *Vaccine Court*. This court may give financial compensation to individuals who file a petition and are found to have been injured by a vaccine that is covered by the program. Even in cases in which such a finding is not made, petitioners may receive compensation through a settlement (Health Resources & Services Administration, 2022). The basic idea is that since vaccination programs not only benefit the individual vaccinee but are also set up to serve the public good of herd protection, if an individual vaccinee encounters side effects, then such a case should not appear before a normal court with a heavy burden of proof on the claimant. Instead, such claims should be treated in a generous and fast way. The reasoning behind this is that the program does not involve itself with causation, one of the most costly and time-consuming components of a tort action for personal injury.

10. Rotavirus is much more dangerous, and often life-threatening, for children in low-income settings than in countries with well-developed medical services.

## Chapter 8

1. This is not to suggest, however, that in a liberal-democratic society, the state has no responsibility at all for people's health (see our discussion in section 1.9). What we are doing is developing our justification as far as possible according to assumptions about the state's responsibility that can be embraced from diverse political perspectives.

2. Notwithstanding the importance of debates about priority access for the most vulnerable individuals or about compulsory immunization, the most dramatic injustice of the pandemic was on a global scale: almost all people in African and other middle- and low-income countries had no access to immunization at all, even at a time when high-income countries were starting their third or fourth round of vaccinations (boosters).

3. In some countries, 1G policies were proposed that gave access to facilities only to recently tested persons, whether they were vaccinated or not.

4. In public debates, a third argument therefore surfaced that especially supported 2G policies. It was suggested that a policy that allows access to venues to people with some

(infection- or vaccine-induced) immunity against the virus could significantly reduce the incidence of severe COVID-19 disease. It thus defends the exclusion of unvaccinated persons to protect them against getting severely ill and to prevent the (aggregated) impact on an already overwhelmed health care system. However, this suggested effect of a 2G policy protecting the health care system remains quite speculative.

5. A vaccine does not need to provide full prevention of transmission of the wild-type pathogen to curb an outbreak. See section 1.7 for a discussion of the concept of sterilizing immunity.

6. This argument presupposes that the coercive lockdown measures that were already in place were legitimate. The story would be different if the initial constraints on freedom were unjustified. Take the hypothetical case in which the police imprison all persons for arbitrary reasons and only restore their liberty when they opt for vaccination. In that case, the imprisoned persons can rightly claim they are being subjected to a coercive vaccination program. It is therefore understandable that people who resist COVID-19 lockdown measures and reject them as illegitimate will also consider the policy that releases vaccinated persons from such measures coercive toward vaccine refusers. Yet *if* the compulsory quarantine measures are democratically legitimate and morally justified—and again, the harm principle can serve as a backbone of this justification—*then* a view like that is simply wrong.

7. This may appear inconsistent with our plea for mandatory childhood vaccination via access to childcare, which arguably also involves using societal organizations to enforce public health tasks. In the concluding section, 8.6, we return to this issue and argue that there are relevant differences between the contexts of both proposals.

## Chapter 9

1. There is a large body of literature emerging on the complex relation between trust in government and the willingness to vaccinate, and the ways in which governments can stimulate the willingness to vaccinate, that includes Lazarus et al. (2021); McCoy (2019); Attwell et al. (2020b); Haire et al. (2018); and Attwell et al. (2021).

2. This practice is sometimes called "false balance," in which a media outlet presents an issue as being more balanced between opposing viewpoints than is supported by the evidence, presenting each side of the debate as equally credible, even when the factual evidence is stacked heavily on one side. Interestingly, provaccination movements in Australia have actively trained the media to fight false balance in their reporting (cf. Vanderslott, 2019).

3. "The exercise of these freedoms [of expression], since it carries with it duties and responsibilities, may be subject to such formalities, conditions, restrictions or penalties as are prescribed by law and are necessary in a democratic society, in the interests of national security, territorial integrity, or public safety, for the prevention

of disorder or crime, for the protection of health or morals, for the protection of the reputation or rights of others, for preventing the disclosure of information received in confidence, or for maintaining the authority and impartiality of the judiciary" (ECHR Article 10(2)).

## Chapter 10

1. The RIVM made several provisos concerning this percentage. One is that such a threshold only applies to larger populations in which immunity is more or less evenly spread. If there are smaller regions with a much lower vaccine coverage, outbreaks may still occur (RIVM, 2019).

2. A threshold of 94 percent vaccine coverage rate in the Netherlands would imply that coercive measures have to be implemented right away. In 2020, 93.6 percent of all children below two years of age received their shots against measles. Given that uptake had increased somewhat in the years before, it would make sense in 2020 to set the current level as a minimum and thus avoid immediate coercive steps. As suggested at the end of chapter 7, if vaccine coverage increases further, the government may decide to slowly push up the threshold as well, until 94 percent or the WHO recommendation of 95 percent is met.

# Inducing Immunity?

## Justifying Immunization Policies in Times of Vaccine Hesitancy

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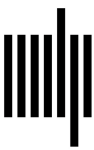

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