

Intergenerational Justice, Sufficiency, and Health

Axel Gosseries

1. Introduction

Does sufficientarianism have a distinctive message to deliver on matters of intergenerational justice in relation to health? This chapter aims to answer this question. It is limited in three ways. It focuses on a single type of theory of justice, namely sufficientarianism. It is concerned with intergenerational justice, which is only one dimension of justice, and even more precisely with justice between birth cohorts, with the latter focusing on one of the understandings of the word "generation." Finally, it limits itself to one object of justice—that is, health and health care.

The distinction between birth cohorts and age groups is key here. "Birth cohort" and "age group" are two meanings of "generation." A birth cohort is a set of people born between date x and date y (e.g., all those born in 1970), whereas an age group is a set of people sharing the same age, regardless of the period at stake. For instance, those who were 40 years old in 1722 and those who are 40 years old in 2016 belong to the same age group while clearly not belonging to the same birth cohort. Whenever we are concerned about justice between birth cohorts, we are concerned about whether (individuals from) different cohorts treat each other fairly—for example, whether the cohort born between 1970 and 1980 does what it owes the previous or the next one. When we wonder about the demands of justice between age groups, we ask ourselves what an age group owes another—for example, what people in their 40s owe pensioners and children.

Most of us share intergenerational justice concerns. We wonder what we owe future generations in terms of natural and cultural heritage—for example, in terms of climate justice and of educational effort, in terms of nuclear waste

management and of financial sustainability for our pension schemes, in terms of biodiversity conservation and of democratic institutions, and so on. Insofar as health care is concerned, the "care" aspect may suggest that we primarily frame issues in terms of justice between *age groups*, with age being associated with stronger dependency (infants and elderly people) or with the incidence of specific pathologies (diseases that primarily affect children, late adults, elderly people, etc.). However, we focus here on health and health care issues from the angle of justice between *birth cohorts*.

Admittedly, there are specific challenges to claims of justice between birth cohorts. Insofar as obligations toward future people are concerned, such challenges typically include doubts as to whether people who do not exist yet could have rights or the non-identity objection to which we return later.¹ Also, reasons to care about justice between birth cohorts are roughly of the same nature as those one may invoke to ground concerns of, for example, global justice. For instance, a "chronopolitan" will typically adopt as a starting point the view that people should be treated impartially, regardless of their *date* of birth, just as a cosmopolitan in debates about global justice will tend to consider a person's *place* of birth as an unjustified ground for disadvantage. If major disadvantages are associated with our date of birth, an impartialist will call for a justice-driven response. Such advantages and disadvantages do arise, and they are significant. For instance, the average life expectancy at birth in a European country such as Belgium evolved from 46.52 years in 1900 to 77.78 years in 2000.² Similarly, there has been a significant increase in years of schooling in the same country during roughly the same period, evolving from 5.36 years on average in 1921 to 10.04 years on average in 2001.³ Thus, for most theories of justice, concerns of justice between birth cohorts make sense and are significant.⁴

As mentioned previously, I do not deal here with sufficientarian justice *between age groups*. Let me briefly discuss the main issues in this respect.⁵ The question

arising with respect to age groups and health/health care is typically the following: "Should access to treatment *x* be subject to an upper and/or lower age limit?" This leads us to ask to what extent an age limit differs from gender or "racial" criteria. The key distinctive feature in this respect is that *we all age*, which has no equivalent in the cases of gender and race. What follows at the normative level? At least two types of arguments, both relevant to health care.

First, there is the "complete life" argument that claims that age limits tend to be unproblematic both because we should take people's complete lives as the relevant units of ethical concern and because age limits generally do not lead to differential treatment over people's complete lives. The problem is that, in practice, the latter (factual) claim is often violated. Moreover, sufficientarians will tend to have a specific approach to the argument's normative premise, in two ways.⁶ They might claim that equality over complete lives is not enough and that sufficiency should be guaranteed *all along* people's lives, continuously. This might be especially relevant for certain types of health care—for example, pain medicine. They might also give a sufficientarian interpretation of what is required over complete lives, claiming, for instance, that we should make sure that as many as possible reach a minimum, sufficient number of years of existence, a life span threshold beyond which the nature of what justice requires would change.

The defensive "complete life" argument claims that there is often nothing wrong with age limits. There is also a set of arguments that claim that there can be something good about age limits. These arguments tend to focus on two types of dimensions: efficiency and equality. A typical *equality-oriented* argument—that can easily be given a sufficientarian form—is that upper age limits tend to shift resources toward young people, increasing equality over complete lives. For instance, not reimbursing or even not providing access to certain life-saving health services (e.g., organ donation) beyond a given age shifts health resources toward younger patients. This might equalize life expectancies.⁷ Typical *efficiency-oriented* arguments for using age limits include the efficiency of using age as a proxy in order to save on information-gathering costs (e.g., a proxy for the ability to consent to certain forms of treatment) and/or of using age limits as ways of structuring our lives in an efficient way. Consider compulsory education until a certain age to ensure that people study before they start working, or compulsory vaccination before a certain age to ensure that people get a vaccine as early as possible. For most sufficientarians, both types of reasons may be relevant. Equalizing life

1. See Axel Gosseries, "On Future Generations' Future Rights," *Journal of Political Philosophy* 16, no. 4 (2008): 430–464.

2. Sources: "Human Mortality Database" (<https://www.mortality.org>), University of California (Berkeley, CA), and Max Planck Institute for Demographic Research (Germany). See also <https://data.oecd.org/healthstat/life-expectancy-at-birth.htm>.

3. David De la Croix and Vincent Vandenberghe, "Human Capital as a Factor of Growth and Employment at the Regional Level: The Case of Belgium," Report to the European Commission, Employment and Social Affairs, 2004, p. 10.

4. For a comparative overview, see Axel Gosseries, "Theories of Intergenerational Justice: A Synopsis," *Surveys and Perspectives Integrating Environment and Society* 1, no. 1 (2008): 61–71.

5. For further developments, see Axel Gosseries, "What Makes Age Discrimination Special? A Philosophical Look at the ECJ Case Law," *Netherlands Journal of Legal Philosophy* 43, no. 1 (2014): 59–80.

6. Gosseries, "What Makes Age Discrimination Special?" 67–68.

7. See Marc Fleurbaey, Marie-Louise Leroux, and Grégory Ponthière, "Compensating the Dead," *Journal of Mathematical Economics* 51 (C) (2014): 28–41.

expectancies matters to the extent that it allows more people to reach the sufficiency level, framed in terms of sufficient life expectancy. Efficiency matters to the extent that it increases our ability to level up more people to the sufficiency level.

Hence, although I do not address issues of justice between age groups in this chapter, they are crucial to health and health care. They require us to scrutinize the numerous age criteria on which health care regimes rely. They also invite us to understand the nature of obligations that adults have toward children and that midlife adults have toward the elderly, especially insofar as informal care is concerned.

Note more generally that connecting justice between age groups with justice between birth cohorts is not straightforward. Some may adopt a view on justice between age groups that rejects the complete life view, the latter being key for justice between birth cohorts.⁸ Alternatively, one may understand age-specific rights and duties as a mere *translation* of whole life duties and rights. Finally, we might understand their relationship as one of *compatibility* rather than *derivation*. Age-specific rights and duties should be compatible with rights and duties deriving from justice between cohorts, in the same way as rights and duties deriving from justice between birth cohorts should be compatible with the definition of our global rights and duties, and vice versa.

I proceed in three steps. First, what sufficientarianism requires in general in the intergenerational realm is discussed. I also examine whether there are specifically intergenerational defenses of sufficientarianism. I do not focus on health at this first stage and will understand generations as “birth cohorts” all along. Second, I discuss health issues. I try to determine whether some health issues are especially of intergenerational interest. Third, I discuss what a *non-isolationist* approach tells us about intergenerational justice in health and health care.

2. Sufficientarianism and Birth Cohorts

2.1. Three Distinctive Features

Let me first identify whether and how the intergenerational demands of sufficientarianism may differ from those of other theories of justice. I take as a starting point a generalist sufficientarian view extending itself to the realm of justice between birth cohorts. Its metric can be of a “basic needs” or of a “basic capabilities” type, although it could be welfarist too (discussed later). Consider four formulations, the first three of which are clearly sufficientarian:

8. Dennis McKerlie, *Justice Between the Young and the Old* (Oxford: Oxford University Press, 2013), Chap. 4.

Pinchot (1910): “It recognizes the right of the present generation to use what it needs and all it needs of the natural resources now available, but [also] recognizes equally our obligation so to use what we need that our descendants shall not be deprived of what they need.”⁹

Brundtland (1987): Development is sustainable if it “meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹⁰

Daly (1996): “The basic needs of the present should always take precedence over the basic needs of the future, but the basic needs of the future should take precedence over the extravagant luxury of the present.”¹¹

Sen (2014): “The idea of sustainable development can be broadened from the formulations proposed by Brundtland and Solow to encompass the preservation and expansion of the substantive freedoms and capabilities of people today without compromising the capability of future generations to have similar or more freedoms.”¹²

The Pinchot/Brundtland formulations share the same spirit, whereas that of Daly departs from intergenerational impartiality unless we can argue that there are good reasons to discount the moral importance of future people’s needs.¹³ Sen’s proposal differs in various ways from those of Pinchot and Brundtland: The *criticism* differs because it calls not only for the preservation but also for the expansion of substantive freedoms and capabilities (for people today but also, as a result, for people tomorrow); the metric differs too because it replaces a concern for basic needs with a broader concern for freedom and capabilities. A sufficientarian could adopt one of these formulations to characterize his or her intergenerational views.

9. Gifford Pinchot, *The Fight for Conservation* (New York: Doubleday, Page, and Company, 1910), 80, cited in Richard Howarth, “Towards an Operational Sustainability Criterion,” *Ecological Economics* 63 (2007): 656.

10. World Commission on the Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), 53 (often referred to as the *Brundtland Report*, after its Chair’s name).

11. Herman Daly, *Beyond Growth. The Economics of Sustainable Development* (Boston: Beacon Press, 1996), 36.

12. Amartya Sen, “Global Warming Is Just One of Many Environmental Threats That Demand Our Attention,” *The New Republic* (August 22, 2014).

13. See, for example, Luc Van Liedekerke, “Discounting the Future. John Rawls and Derek Parfit’s Critique of the Discount Rate,” *Ethical Perspectives* 11, no. 1 (2004): 72–83; Gregory Ponthière, “Should We Discount Future Generations’ Welfare? A Survey of the ‘Pure’ Discount Rate Debate,” Liège: CREPP Working Paper, 2003.

Here, I note three features of sufficientarianism. First, a sufficientarian view defines what we owe the next generation partly independently from what we inherited, or from what we ended up having ourselves through a mix of inheritance, work, and natural circumstances specific to our period of existence (as suggested by Sen's formulation). This potentially leads to a set of properties on which we cannot expand here.¹⁴ In contrast, for a typical *cleronomical* view—meaning roughly “ruled by inheritance” in Greek—it is what we inherit from the previous generation that sets the standard for what we owe the next one. Egalitarianism, for instance, can be framed in those terms (see Table 7.2). In Brundtland's case, the basic needs metric sets the target *in part* independently from that—in part only, because under Brundtland's definition, the amount of what we inherited is indirectly taken into account through a concern for the current generation's ability to ensure the coverage of its own basic needs associated with the effort necessary to provide for the next generation's basic needs. If very little were bequeathed to us, the chances are significant that our efforts to provide for the basic needs of the next generation would threaten our own ability to cover our own basic needs.

Admittedly, whereas Brundtland's definition is only moderately non-cleronomic, a sufficientarian could adopt a *strictly non-cleronomical* view, totally disregarding what was inherited and, as a result, what efforts would be required from the current generation to guarantee sufficient conditions for covering the next generation's basic needs. Would such a strictly non-cleronomical view not violate the requirement that we should treat members of different cohorts impartially? Does it not disregard the costs on the current generation, potentially bringing it below the sufficiency threshold? The answer depends on the extent to which the possibility of having children is included in the set of basic needs for each individual. For if resources were insufficient to guarantee that the basic needs of the next generation be covered, we could decide to reproduce less.¹⁵ In this case, we would be able to adjust our effort in a manner compatible with the coverage of our own basic needs through adjusting our reproduction rate, possibly to a level equal to zero if resources are radically scarce. In contrast, if we believe that any plausible sufficientarian view should include the basic right to a reproduction rate that is above zero, as well as the means associated to it, sufficientarianism should be *moderately* non-cleronomic.

Although Sen is often viewed as a sufficientarian due to his insistence on basic capabilities, the account of sustainability that he provides us with here is arguably

Table 7.1 The Cleronomicality of Various Views

	Cleronomic		Noncleronomic	
	Strict	Egalitarianism	Sufficientarianism without guaranteed reproductive right	Brundtland's sufficientarianism
Moderate		Sen's suggestion		

not sufficientarian. However, Sen's formulation (“of people today”) suggests another way in which a non-sufficientarian could be *moderately cleronomic*—as opposed to *strictly non-cleronomic* or *moderately non-cleronomic*. Such a view would adopt as a reference point neither an independent standard (e.g., objective conditions for basic needs satisfaction) nor what we inherited (as is the case for most theories, such as egalitarian ones). It would focus instead on what we ended up having benefited from in terms of opportunities *by the end of our life*, which involves a mix of inheritance and the fruits of *our own* labor. This is another option that is not explored here.¹⁶ However, it helps the reader to understand the distinctiveness of a sufficientarian approach. The claim is that any sufficientarian view applied to the intergenerational realm should fit within one of the two rows of the right column of Table 7.1.

A second important feature of sufficientarianism comes to light when we consider how non-sufficientarian views deal with generational savings and dissavings. *Generational savings* obtain whenever a birth cohort transfers more (per head) to the next one than what it inherited. *Generational dissavings* obtain whenever a birth cohort transfers less (per head) to the next one than what it inherited. A *utilitarian* theory of justice aims at maximizing the total amount of well-being of a relevant group—here the members of current and future generations altogether. It will typically defend a *duty of generational savings*, for the purposes of the intergenerational maximization of welfare.¹⁷ The driving intuition is that under certain conditions, one unit of *x* invested in a productive way today will allow for much more consumption and well-being in the future than if it were consumed today. Unless they relax a requirement of intergenerational impartiality, utilitarians will tend to require an indefinite sacrifice of earlier generations to the benefit of later ones.

A *leximin egalitarian* view differs from a utilitarian one in that it is more distributive. Rather than maximizing the total amount of *x* within a given population, it aims at maximizing the amount of *x* that the least well-off enjoys, and then for

14. Axel Gosseries, “A Justiça Intergeracional e a Metafora do Refugio de Montanha,” *Philosophica (Lisbon)* 38 (2011): 121–141.

15. For a sufficientarian case for a duty to reproduce, see Anca Gheaus, “Could There Ever be a Duty to Have Children?” in *Permissible Progeny?* ed. Samantha Brennan, Sarah Hannan, and Richard Vernon (New York: Oxford University Press, 2015).

16. I am also unable to explore here what the equivalent of the cleronomical intuition would amount to in terms of global justice.

17. On what follows, see Gosseries, “Theories of Intergenerational Justice.”

Table 7.2 The “Savings/Dissavings” Lens: Sufficiencyarianism and Two of Its Alternatives

	Generational Dissavings	Generational Savings
Utilitarianism	Prohibited	Compulsory
Leximin egalitarianism	Prohibited	Prohibited
Sufficiencyarianism	Authorized unless insufficient for basic needs of future generation(s)	Authorized unless insufficient for basic needs of current generation

the second least well-off, for the third least well-off, and so on, within the reference population. It will *prohibit* both generational dissavings and generational savings. The driving intuition underlying this surprising prohibition on savings is that sav- ings entail an opportunity cost for the (early) least well-off. This is incompatible with the leximin of the least well-off’s expectations across generations.¹⁸

As to sufficiencyarianism, it will typically *authorize* both dissavings and savings provided that we remain above the sufficiency level. The theory therefore differs substantially from the other ones. If we want to adopt policies through which one generation wants to tighten its belts to render the next generation much richer than itself, there is no objection in principle as long as such efforts do not bring anyone below the sufficiency level. Similarly, a generation that wishes to spoil most of what it inherited is allowed to do so provided that it leaves enough to its descendants to cover for their basic needs. Table 7.2 summarizes the three views and their prescriptions in terms of generational dissavings and savings.

In addition to the two distinctive features emphasized so far—namely moderate non-cleronomicity and the authorization (within limits) on both generational disav- ings and savings—characteristics of the metrics that sufficiencyarians tend to adopt might be of relevance here as well. For general purposes, the core of some of the main theories of justice can be presented as a mix of the following: a *criterion* (“maxi- mizing the total amount of x ,” “maximizing the least well-off’s level of x ,” “equal- izing x for all,” “guaranteeing a minimum of x to all,” etc.) and a *metric* (or currency) (with x standing for “basic capabilities,” “welfare,” “opportunity for welfare,” etc.).

We previously focused on the criterion. Regarding the metric, it can be more or less *preference-sensitive*—that is, take into account people’s actual (or filtered) pref- erences as opposed to trying to adopt “objective” standards such as the daily intake

of calories that an average person needs. It can also be more or less *responsibility- sensitive*—that is, only aim at equalizing, maximizing, and so on the level of x that is independent of people’s (problematic) choices. Equalizing welfare differs from equalizing opportunity for welfare. One label that usually refers to such responsibility-sensitivity is “luck” (as in “luck egalitarianism,” “luck leximin egal- itarianism,” “luck utilitarianism,” “luck sufficiencyarianism,” etc.).

Sufficiencyarians tend to adopt a metric that is less preference-sensitive, such as basic needs. It is not that sufficiencyarianism should necessarily abandon a preference-sensitive approach. It is rather that, if distributive duties are more lim- ited, such preference-insensitivity remains more easily compatible with the liberal concern for respecting the variety of conceptions of the good life. Sufficiencyarians also tend to adopt a *responsibility-insensitive* metric.¹⁹ For some, this is the very reason for adopting a sufficiencyarian perspective. Again, such responsibility- insensitivity is not too burdensome on duty-holders because distributive duties are supposedly more limited than for other distributive views. Also, a sufficiar- ian defending a responsibility-sensitive metric might be subject to the “harshness objection” to an especially strong degree, at least if there are no demands of justice above the sufficiency threshold. The idea is that it would be too harsh on a person with some of her basic needs unmet to claim that we do not owe her distributive transfers because she is responsible for her situation. Very few would thus defend luck sufficiencyarianism.²⁰

Do such preference-insensitivity and responsibility-insensitivity have any interesting implications in the intergenerational realm? As to the former, one important feature of intergenerational relations is that the content of the next generation’s preferences is not independent from the decisions of the current generation. Through informal and formal education, each cohort has a signifi- cant impact on the preference-formation process of the next one. This means that to some extent, if the view were strictly based on each generation’s actual preferences, each of them could decide to soften its intergenerational obliga- tions through inculcating easy-to-satisfy preferences into the next generation. The move toward a less preference-sensitive metric is therefore a strength in this respect.²¹

19. See Axel Gosseries, “Qu’est-ce que le suffisantisme?” *Philosophiques* 38, no. 2 (2011): 472–475.

20. See, however, Cécile Fabre, *Justice in a Changing World* (Cambridge, UK: Polity Press, 2007), 37 (“not to be left below the sufficiency threshold for reasons which are outside their control—such as race, gender, disability”) (italics added).

21. See Danielle Zwarthoed, “Creating Frugal Citizens: The Liberal Egalitarian Case for Teaching Frugality,” *Theory and Research in Education* 13 (2015): 286–307.

18. For further developments, see Frédéric Gaspard and Axel Gosseries, “Are Generational Savings Unjust?” *Politics, Philosophy & Economics* 6, no. 2 (2007): 193–217.

Regarding responsibility-insensitivity, it often refers to whether the potential beneficiary of a social transfer should be held responsible for his disadvantaged situation. One less often discussed aspect is whether the difficulties that a duty-holder experiences in achieving such transfers should also be considered. Interestingly, a plain non-cleronom view will tend to disregard the difficulties that a generation may have in securing the conditions for sufficiency for the next generation. Each generation should meet the target, regardless of how much it received from its predecessors and how much bad luck it experienced during its own existence. As indicated previously, sufficientarians can instead endorse a moderate non-cleronom view, taking into account the impact of the current generation's efforts on its own ability to meet its basic needs. It can do so without necessarily shifting to a responsibility-sensitive metric.

In contrast, a responsibility-sensitive view that takes responsibility seriously, including on the duty-holder side, may actually tend to support a stronger degree of cleronomity. However, the link between taking what we inherited as a reference point and limiting the inheritance preservation efforts of the current generation is not totally straightforward. Moreover, insofar as the beneficiaries of potential social transfers are concerned, imagine that our predecessors have underinvested in a manner considered problematic. If they run short of resources by the end of their lives, sufficientarians will still guarantee that the basic needs of these predecessors will be covered through ascending transfers from the current generation to the previous one. This may entail significant efforts for the currently active generation.

2.2. Two Specific Defenses

Later, I return to whether the three features just identified—moderate non-cleronomy, qualified authorization to save and dissave, and preference- and responsibility-insensitivity—carry any implications in the realm of health and health care. I have just shown how sufficientarianism differs from other theories of justice in the intergenerational realm. Let me now discuss two specific ways in which sufficientarianism can be defended in this realm. Rather than asking ourselves *what* sufficientarianism entails, we ask ourselves *why* we should adopt it. The two possible defenses presented here are special in the sense that they could be endorsed by authors who do not necessarily adopt sufficientarianism as a general theory of justice in the domestic and/or intragenerational realm. Note that each of these strategies leads to a different definition and understanding of the nature of the sufficiency threshold.

The first strategy is Rawlsian and amounts to defending “institutional sufficientarianism.” It rests on the factual assumption that a certain amount of resources are necessary to enable institutions to protect basic freedoms. This is

distinct from a political sufficientarianism à la Elizabeth Anderson (“democratic egalitarianism”).²² The idea is not (only) that each individual should reach a minimum threshold in order to be able to function as a citizen in a democratic regime. It is (rather) that the institutional setting needs resources to protect the citizens’ basic freedoms.

What is the context of this defense of accumulation *up to a certain threshold*? Rawls is worried about the fact that compulsory savings—as defended by utilitarians—violate the demands of justice. The most plausible reason to worry about it is that an accumulation path does not allow for making sure that the least well-off be as well off as the least well-off under any alternative path. Whenever a generation transfers more to the next one than what it inherited, an opportunity cost for the least well-off members of the current generation follows. If there is a surplus, why not direct it to the least well-off members of our generation rather than to the next generation? The idea is not one of generational partiality here. Rather, if each generation were to direct its “surplus” (compared to what it inherited) at the least well-off in its generation, we would end up with an intergenerational path compatible with the demands of maximin/leximin.²³ At the same time, without any form of accumulation, at least at the beginning of mankind’s evolution, we would not dispose of enough resources to support basic institutions. Rawls’ proposal amounts to limiting the violation of maximin as much as possible to what is necessary (and *sufficient*) to support such institutions. Hence the label “institutional sufficientarianism,” which relies on the priority of liberty to justify a temporary violation of the demands of leximin/maximin egalitarianism during an accumulation phase.²⁴

How does this type of “institutional sufficientarianism” connect with more standard “substantive sufficientarianism” (e.g., of a basic needs type)? First, one may be more radical than Rawls. Instead of allowing for both savings and dissavings once the demands of institutional sufficiency are met, one could advocate a prohibition on both savings and dissavings (i.e., strict rule) once accumulation has allowed us to reach an institutional sufficiency threshold (see Table 7.2). The reference point for such a “neither save, nor dissave” rule will be what we inherited from the previous generation. Combined with the definition of the institutional threshold, it follows that in full compliance, steady state would amount de facto to sticking to this institutional sufficiency threshold forever—again, without

22. Elizabeth Anderson, “What Is the Point of Equality?” *Ethics* 109, no. 2 (1999): 287–337.

23. For further developments, see Axel Gosseries, “Nations, Generations and Climate Justice,” *Global Policy* 5, no. 1 (2014): 96–102; Axel Gosseries, “Reply to My Critics,” *Diachronica* 28, no. 2 (2014): 343–348.

24. Gosseries, “Reply to My Critics.”

point not only for the definition of harm but also for the definition of our intergenerational distributive duties in general, it sounds as if this harm-derived form of sufficientarianism would define far too minimalistic intergenerational obligations, arguably lower than what basic needs sufficientarianism would require. In other words, if basic needs coverage corresponds to a higher standard than one of a life “merely” worth living, the type of life-worth-living sufficientarianism that one may derive as a response to the non-identity problem will be less demanding than what standard sufficientarianism requires. Avoiding that the life of the next generation be harmful in this sense is quite a minimalistic goal indeed.

What follows is that although in the intergenerational sphere, there may be specific reasons to defend “institutional sufficientarianism” or “life-worth-living sufficientarianism” without endorsing sufficientarianism in general,²⁸ such thresholds are likely to be too low to serve as a reference point for plain sufficientarians. As a result, these defenses cannot plausibly support a robust sufficientarian account of intergenerational justice. Extending standard substantive sufficientarianism to the intergenerational realm remains the best avenue to develop an intergenerational sufficientarian view.

3. Health Policy Implications: The Isolationist Approach

It is one thing to present a general theory of intergenerational justice and to point at some of its distinctive features. It is another to identify what (if anything) it has to say in a given sector about the distribution of specific goods. One might be tempted to adopt an isolationist (or good-specific) approach here²⁹—that is, view

28. A third reason for why non-sufficientarians may want to endorse intergenerational sufficientarianism is invoked by Fabre: “The difficulty which population size poses for luck egalitarians is one reason why some people of a strongly egalitarian bent are tempted to adopt a sufficientist view of our obligations to our successors. . . . Deciding how much to save [to ensure that our successors have enough resources not to be utterly destitute] is *much easier* than working out how much to save to ensure that our successors each have an equal share” (Cécile Fabre, *Justice in a Changing World*, 36–37; italics added). However, even under a constant population scenario, it is unclear why setting the level of basic needs and specifying what it requires (including in terms of reproductive rights) is *much easier* than assessing what our generation inherited under the relevant metrics. Also, when the population fluctuates, we have to adapt the level of generational transfers accordingly, both under an egalitarian view and under a sufficientarian view.

29. See Axel Gosseries, “Are Seniority Privileges Unfair?” *Economics & Philosophy* 20, no. 2 (2004): 298–301 (articulating “good-specific” analysis and “all-things-considered” analysis in the employment sector); Simon Caney, “Just Emissions,” *Philosophy & Public Affairs* 40, no. 4 (2012): 259 (introducing the “method of isolation” and the “method of integration” in the climate context); Andreas Albertsen and Carl Knight, “A Framework for Luck Egalitarianism

necessarily endorsing sufficientarianism in general. Second, there does not seem to be a full overlap between resources that are needed to support basic-freedom-protecting institutions and resources that are needed to support basic needs of individuals. It seems that resources necessary to support the latter are more extensive than resources to support the former because not all basic needs are basic-freedom-related.

There is another pathway that does not require endorsing sufficientarianism in general. It responds to the non-identity problem. The latter arises as soon as an allegedly harmful action is also a necessary condition for a person’s existence.²⁵ An example is when a child who is the result of cloning claims that such cloning was wrongful to her. In such cases, a standard person-affecting concept of harm delivers the following conclusion: If we cannot show that the alternative state of this very person would have been better for her than her current state, she cannot claim to have been harmed. If the person would otherwise not have existed, there is no alternative state for that person. As a result, no harm resulting from the allegedly harmful action—a necessary condition for this person’s very existence—follows. A variety of responses have been envisaged. One of them consists of substituting a threshold-based concept of harm to the standard comparative-to-counterfactual concept that I just presented. Under such an alternative, threshold-based understanding of harm, a person would be harmed not if her current condition is worse than her condition in the absence of the allegedly harmful action. Instead, she is harmed if her current condition is simply “bad”—that is, worse than an independently defined threshold. This response to the non-identity challenge may then lead in turn to adopting sufficientarianism as a theory of intergenerational justice because our intergenerational relationships are extensively affected by the non-identity problem.²⁶

As in the case of “institutional sufficientarianism,” the challenge is how to relate such “harm threshold sufficientarianism” with a standard substantive sufficientarianism (e.g., of the basic needs type). A dilemma obtains: If the harm threshold is higher than what a “life worth living” requires, we would consider “bad” some lives that would be perfectly worth living. For example, claiming that harm would not be avoided unless the beings we bring to life can have the capacity to be “fully functioning members of society”²⁷ is setting the standard too high for a life “worth living.” On the other hand, if such a low threshold serves as a reference

25. Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984), Chap. 16.

26. Lukas Meyer and Dominic Roser, “Enough for the Future,” in *Intergenerational Justice*, ed. A. Gosseries and L. Meyer (Oxford: Oxford University Press, 2009), 220–249.

27. Edward Page, “Justice Between Generations: Investigating a Sufficientarian Approach,” *Journal of Global Ethics* 3, no. 1 (2007): 17. Compare with David Copp (1998), cited in Page, “Justice Between Generations” 17 (“Matters of basic need are things anyone would require in some quantity and in some form in order to avoid a blighted and harmed life”).

the distribution of a good or set of goods as if they were the only goods we had to distribute between people—and here between generations—applying our general principle to such goods. Consider a situation in which several goods should be distributed across generations. Imagine that we do not know anything about whether the distribution of other non-health-related goods is fair or not. For instance, we do not know whether there is a significant public debt, whether we are emitting a large amount of CO₂, whether educational technology is flourishing, whether extreme poverty is likely to shrink, and so on. We only have knowledge about specific health-related goods. We would then simply apply intergenerational sufficientarianism to such goods/issues and provide policy advice accordingly.

One advantage of “isolationism” is that it is more likely to deliver faster, operational recommendations than an integrated (or “all-goods-considered”) approach, the latter being more data-intensive. However, operationality does not necessarily go hand in hand with rightness (see Section 4). Moreover, in the case of health care, the literature on the social determinants of health reminds us of the difficulty involved in isolating health-related issues from health-unrelated ones.³⁰ In the list mentioned previously, CO₂ emissions, poverty, and education all have significant health impacts. However, let me assume for the time being that isolationism is right and consider three policy issues.

3.1. Drug Patent Length

Incentivizing medical research raises various issues. One concerns the research versus curing alternative: Should we devote funds to finding new cures rather than more fully implement existing ones? Medical research is an investment. It entails net costs for the drug-developing generations and net benefits for the post-development generations. In contrast, implementing existing cures entails net benefits to the present generation too. From a sufficientarian perspective, assuming that we have enough technology today to allow most people to lead a life of sufficient length and quality, public funding should probably give priority to curing people through existing drugs and to transferring the existing knowledge to the next generations rather than to research on new drugs.

However, although sufficientarians are less likely than, for example, utilitarians to support the public funding of extensive medical research, they are more

likely than others to allow people to invest in medical research privately. This is so because sufficientarianism typically caps duties of justice more than do other theories of justice, which would lead to a lesser fiscal pressure, for example. Moreover, for pathologies for which medical research is needed to bring people to sufficiency, sufficientarians will also support public funding for research.

The question then arises as to how to best design incentives for such research. Let me discuss one ingredient of such a scheme: patent length. It is sometimes suggested that a shorter patent duration would be fairer. Of course, shorter patent length might reduce investment. However, holding the amount of investment constant, if a return on investment needs to be achieved over a shorter period, prices per unit are likely to be higher, *ceteris paribus*, which will hinder access for the least well-off. Let us consider, hypothetically, a patent that deals with a life-saving drug against a disease that affects mostly younger people, making it especially relevant to sufficientarians. Consider a two-periods world, with each cohort living through one period only. We also assume that patent holders fully adjust drug prices to patent length. If the patent period is longer, the drug will be cheaper from the beginning. Table 7.3 shows this synoptically. Shortening patent length increases the differential between younger people getting sick during period 1 and those who would get sick during period 2. Members of cohort 1 will have costly access to the drug, whereas access will be free for members of cohort 2. Everything else being equal, and given the assumptions stated above, we could conclude that shortening patent length is intergenerationally unfair. Making it longer would increase access during period 1 and make access more equal between period 1 and period 2 while still allowing for the same return of investment, spread across a longer period of time.

Actually, the situation is slightly more complex. In theory, if access could be fully funded during period 1 through private or public funds by the first generation to guarantee sufficiency to all—and leaving aside here the other possibility that the drug would address health problems that do not tend to bring people below sufficiency—sufficientarians could be indifferent between both patent lengths. As such, the fact that the two generations would unequally fund the drug development, or the fact that such funding/access distribution would move us away from the demands of leximin egalitarianism, is of no concern for sufficientarians

Table 7.3 Drug Prices Under Two Patent Length Scenarios

	Period 1		Period 2	
	Short patent length	High price	Free	Low price
Long patent length		Low price		

in Health and Healthcare,” *Journal of Medical Ethics* 41, no. 2 (2015): 166 (on “isolationism” and “integrationism” in health and health care).

30. Richard Wilkinson and Michael Marmot, eds., *Social Determinants of Health: The Solid Facts*, 2nd ed. (Copenhagen: WHO Europe, 2003): 31.

as long as sufficiency is met by both generations. However, in real-life conditions, such funding/access distribution will tend to affect the first generation's ability to meet the sufficiency threshold. This is so whenever the patented drug is able to bring at least some people above the sufficiency threshold and when actual public funds tend to be too limited to bring all above sufficiency. In such cases, sufficientarians will share the concern of, for example, leximin egalitarians and might advocate longer patent lengths under the conditions identified previously.

3.2. Controlling Versus Eradicating Infectious Diseases

Consider a second health issue with an interesting temporal dimension: the choice between controlling an infectious disease and eradicating it. There are two relevant features associated with intergenerational justice here. The first one is relatively standard for any investment decision. Although eradication may be extremely beneficial in the long term, all the costs are concentrated on the pre-eradication generation(s). By way of illustration, consider the eradication of smallpox:

Very roughly, a one-time cost of about US\$ 100 million saved the world about US\$ 1.35 billion a year. Using a discount rate of 3%, this implies a benefit–cost ratio for global eradication of about 450:1. Smallpox eradication was an extraordinarily good deal for the world.³¹

If eradication were not to lead to immediate benefits for the current generations, there might be room for spreading the costs through running a compensatory debt in one way or another. Note, however, that in the smallpox case, and despite a large discount rate of 3% here,³² even the eradication generation seems to have benefited in net terms because of the significant size of the short-term benefits—assuming Barrett's figures are correct.

Although smallpox eradication seems to provide us *ex post* with a clear case of intergenerational benefits, including for the generation incurring most of the costs, it has also remained a unique case. Polio may be another example, although we have not reached full eradication yet.³³ We need to consider cases in which low

cost control in perpetuity is an option, cases in which animal reservoirs are difficult to eliminate, and cases in which political circumstances are such that eradication might fail. In short, aiming at eradication is not always the most efficient path, even against the background of a large number of future generations. We should keep this in mind, especially in light of theories of justice that are primarily distributive rather than aggregative, and in a context in which it might not always be possible to pass part of the eradication costs onto future generations—for example, because of budgetary golden rules that limit authorized annual deficits and national debt levels.³⁴

Eradication is interesting for another reason—that is, its *irreversibility*. One of the features of intergenerational relations is the dependency on intermediary generations, associated with our near complete inability to enforce policies beyond our death.³⁵ If we want to transfer something to several generations in the future (e.g. a language, some values, a renewable resource, institutions that we think are right, or the composition of a useful drug), we depend on the action and abstention of intermediary generations. In order to reduce such a dependency, we may want to try to increase the irreversibility of our choices. We render constitutional provisions rigid to a certain point. We make sure that certain types of long-term radioactive waste are difficult to retrieve from deep repositories. Eradicating a disease can be interpreted through the same prism. Not only does it allow for preventing the disease from spreading again but also it protects future generations from the possible carelessness of intermediary ones. This intergenerational dependency/enforcement is related to the analogous enforcement challenge raised by infectious diseases. Barrett states, “The international system is not well suited to implementing interventions that require enforcement, but this failing helps to make eradication an attractive policy goal.”³⁶

3.3. Antibiotic Resistance

Consider a third case with an interesting temporal structure. The effectiveness of antibiotic drugs tends to decrease with time. It is thus comparable to a certain extent to a non-renewable resource that shrinks over time, putting future generations in a disadvantaged position. There are interesting peculiarities.³⁷ First, contrary to the

34. See, as well, James Wilson, “The Ethics of Disease Eradication,” *Vaccine* 52 (2014): 7179–7183.

35. See Axel Gosseries, “Les générations, le fleuve et l’océan,” *Philosophiques* 42, no. 1 (2015): section 2 (discussing the implications of generational “period-lockedness”).

36. Barrett, “Eradication Versus Control,” 686.

37. This paragraph draws extensively on Jasper Littmann, *Antibiotic Resistance and Distributive Justice* (PhD thesis) (London: University College London), Chap. 3.

31. Scott Barrett, “Eradication Versus Control: The Economics of Global Infectious Disease Policies,” *Bulletin of the World Health Organization* 82, no. 9 (2004): 684.

32. By “large,” I mean larger than what seems defensible on sound philosophical premises.

33. The Global Polio Eradication Initiative has managed to reduce the number of cases from 350,000 in 1988 to 416 in 2013. Source: <http://www.polioeradication.org>. See also Kimberly Thompson and Radboud Duinjer Tebbens, “Eradication Versus Control for Poliomyelitis: An Economic Analysis,” *Lancet* 369 (2007): 1363–1371.

resistance case, (inappropriate) drug use renders alternative drug development necessary. Finally, the efficiency aspect differs in the three cases. In the way we discussed them, the patent and the resistance cases mainly raise distributive issues, without any significant efficiency dimension. In the patent case, we took development costs as given. In the resistance case, although drug use can be more or less efficient, slowing down the problem, the long-term depletion issue remains. In contrast, in the eradication case, the efficiency gains can be huge in the long term, and the possible tension between efficiency and fairness is central.

That being said, can we say anything general about the way in which sufficientarians would approach such issues, despite their differences? We can make the following statement: If the health problem at stake affects our ability to guarantee sufficiency for all ("sufficiency-relevance" in Table 7.4), sufficientarians will tend to support investment while keeping an eye on the fact that the costs of such an investment should not jeopardize the ability of the investing generations to reach sufficiency themselves. Thus, all depends on the particular patent, the particular disease one wants to eradicate or particular antibiotic, and whether the investment at stake jeopardizes the ability of the investing generation to reach sufficiency. This echoes Brundtland's moderate non-cleronomomic approach that cares about sufficiency both in the future and in the present, as well as Rawls' concern about an accumulation phase because of its costs for the least well-off.

In contrast, if the drug is not about a sufficiency-relevant disease ("sufficiency-irrelevance" in Table 7.4), the crucial question will be about the impact of its costs. If it leads to an investment incompatible with guaranteeing sufficiency for all for the members of the investing generation ("sufficiency-aversion" in Table 7.4), then the investment should not take place. In the reverse case, the investment should be allowed by sufficientarians, unless they complement their view with other concerns of justice (combined sufficientarianism), in which case the answer will be less clear. Table 7.4 summarizes the four general cases just discussed along the two axes: Is the health treatment at stake sufficiency-relevant or sufficiency-irrelevant for the generation(s) that will potentially benefit from it? Is the investment sufficiency-averse or sufficiency-compatible for the investing generation?

Table 7.4 Does Sufficientarianism Allow, Require, or Prohibit a Given Health Investment?

Costs for the Investing Generation/Nature of the Health Treatment	Sufficiency-Relevant	Sufficiency-Irrelevant
Sufficiency-averse	Trade-off	Prohibited
Sufficiency-compatible	Compulsory	Allowed

depletion of a fish stock due to overfishing, the problem with antibiotic effectiveness degradation may result from both overprescription (increasing resistance) and underprescription (increasing transmission). It is thus more complex than usual resource depletion cases because there are both negative (higher resistance) and positive (lesser transmission) externalities associated with a given level of prescription.³⁸ Second, there is a limited degree of renewability of antibiotic effectiveness, although in the long term the effectiveness of an antibiotic drug should more realistically be presented as nonrenewable.³⁹ Temporary or partial drug bans may allow some effectiveness to recover, provided that we manage to keep the underprescription problem under control. However, this may lead to sacrificing certain generations to the benefit of others. Third, we should definitely envisage in a case such as this one the development of both new drug substitutes and prophylactic strategies aimed at reducing transmission and hence reducing the need for such antibiotic drugs in the first place. Antibiotic resistance, given its temporal dimension, is thus typically of interest to an intergenerational approach. The unwise use of antibiotics or the lack of substitution (with other drugs or with alternative nondrug solutions) can be framed as unfair between birth cohorts *ceteris paribus*.

3.4. Discussion

Having presented three examples, two tasks are in order. First, we need to compare the structure of the three examples (hereinafter referred to as "patent," "eradication," and "resistance," respectively). Second, we can try to generalize what sufficientarians have to say about them and whether there is anything specific about this theory compared to other views.

Let me begin with the first task. The three situations are cases involving *investment* and its associated distribution of costs and benefits across time. Patent royalties reimburse an investment followed by health benefits and free access in the post-patent period. The eradication effort is followed by very significant benefits in the post-eradication period. The case of resistance is slightly different. Investment in substitution drugs is required, but as a compensation of depletion from which we benefit, regardless of whether or not under- and overprescription obtain. Resistance is mainly a depletion problem (to which we can respond in part by investment), whereas patent and eradication do not necessarily presuppose any depletion. In the patent and the resistance cases, there is a link between drug use and investing in drug development. However, the nature of this link differs. In the patent case, drug use renders resources unavailable for drug development. In the

38. Littmann, *Antibiotic Resistance and Distributive Justice*, 59–60.

39. Littmann, *Antibiotic Resistance and Distributive Justice*, 66.

What follows for our three examples? Table 7.4 gives us an indication about patent lengths, depending on whether or not the short patent length scenario would entail costs on the patent-bearing generation that are sufficiency-averse. Regarding eradication, it is likely that, given the type of disease at stake, we will find ourselves in one of the two boxes in the sufficiency-relevant column, depending on the impact of the eradication costs. With regard to resistance, because it is less of an investment problem than primarily a depletion one, we should simply ask ourselves whether or not this depletion is sufficiency-relevant. If it is, then we will find ourselves again in one of the two boxes of in the sufficiency-relevant column.

In short, isolationist sufficientarians will tend to deliver a message that is roughly in line with the one of isolationist leximin egalitarians (although of a more discrete type), except for the bottom right box in Table 7.4. Leximin egalitarians will tend to look at the bottom right box in Table 7.4 in terms of trade-off, as they would for the top left box, with the aim of maximizing the situation of the least well-off, of the second least well-off, and so on, for whichever generation of which they are part.

4. Isolationism, Substitutability, and Sufficiencyarianism

There are two key difficulties with isolationism: *limited separability* and *substitutability*. Regarding separability, most of the possible focus points of an isolationist approach to justice have extensive ramifications. This is true for education, climate, housing, employment, and so on. It is clearly the case with health, too, as the literature on the determinants of health emphasizes. In short, what belongs to the realm of health extends very far and overlaps with other domains of justice and social life.

Substitutability is a more serious problem than limited separability, however. Substitutability is an issue for both intragenerational and intergenerational justice. For most theories of intergenerational justice, some degree of substitutability is in order, within the basket of "goods" that justice requires us to transfer to the next generation. For instance, unless we consider that non-renewable resources should never be consumed by any generation, it makes sense to allow for some substitution of such resources with technology—broadly understood. Moreover, substitutions may also take place within types of goods (e.g., "within" health). Even for someone claiming that no substitution should be allowed whenever health is at stake ("health is sacred"), there might still be room for substitution within the health domain. Among two treatments for different diseases that have the same impact with regard to quality-adjusted life-years, one generation might invest in

one treatment, whereas another generation would rather invest in the other one and include it in the basket of goods it aims to provide for the next generation. Hence, we need at least some degree of substitutability. Now, if substitution is needed—and allowed—requirements of justice in health cannot be assessed in isolation, independently of how the individuals or generations at stake fare in other respects. For instance, an egalitarian may have no problem with someone being disadvantaged in health terms if he or she is advantaged to the same extent in other respects.

Here, I do not explore the extent to which having to abandon isolationism is a challenge to theorists of justice concerned about relevance for public policy. One may of course want to object that an isolationist approach would at the very least constitute a step in the right direction. However, not even that is true. Even in a simplified setting involving only two patients who are potential recipients of a single treatment, equalizing health inequalities may sometimes deepen inequalities, all things considered, through improving the situation of the patient who is already the most advantaged one in overall respects. Moreover, the same situation may arise with respect to costs on health service providers. Here, an intergenerational approach is of interest. We have seen that some views consider that giving more to the next generation is not necessarily fair. Hence, giving more of each good will not necessarily further fairness because it might be unfairly burdensome on providers. For a strict equivalence view, giving more of one good will then only be fair if we give less of another good to the next generation. For such views that are concerned with the fairness of the investment burden, the critique of isolationism will amount to saying, "If you do not know everything, you know nothing." In other words, if you do not map all transfers, you cannot determine whether a given transfer contributes to a fairer overall distribution or whether it diverts us from it. This is obviously very demanding for policymakers concerned about fairness.

Our question here is more specific: Does sufficientarianism allow for less substitutability, leading to a lesser gap between an isolationist and an integrationist approach? Insofar as sufficientarianism is concerned, what is key is the *threshold* level.⁴⁰ The lower the threshold, the lesser the substitutability. Of course, better food or warmer clothes may compensate for having the worst shelter. However, from a certain level of each of these goods onwards, the daily need for it becomes

40. I am leaving aside here another dimension—that is, whether there is a case for specialism ("health is special") that could support some degree of isolationism. See, for example, Shlomi Segal, "Is Health (Really) Special? Health Policy Between Rawlsian and Luck Egalitarian Justice," *Journal of Applied Philosophy* 27, no. 4 (2010): 344–358; Lasse Nielsen, "Why Health Matters to Justice: A Capability Theory Perspective," *Ethical Theory and Moral Practice* 18, no. 2 (2014): 403–415.

incompressible. No matter how well insulated your house is, you will still need to eat something if you want to survive. If we accept the idea that below a certain level onwards, no further substitutability is possible anymore, it might be argued that sufficientarianism allows for less substitutability, which entails that isolationist sufficientarianism might make some sense, even for those with integrationist views in general. This may have to do with the "list" feature characteristic of a basic needs approach—that is, the fact that some basic needs or basic capabilities theorists list them as qualitatively distinct items that should all be met.⁴¹ However, it has even more to do with the threshold level than with whether the selected metric is more or less preference-sensitive (welfarist vs. basic needs sufficientarianism).⁴²

Moreover, in addition to this general feature, when applied to the intergenerational realm, sufficientarianism is sensitive to the burdens of investment for the current generation to the extent that they might bring those bearing the burden of accumulation below sufficiency. This is clear in the Pinchot/Brundtland definition. As a result, as for the strict equivalence views, it is not obvious that guaranteeing better health care for the next generation necessarily goes in the right direction if the costs of health care bring the members of the current generation below the sufficiency threshold. If sufficientarianism were strictly cleronomic as opposed to moderately so, an isolationist approach would be even more relevant because the costs to the current generation of better health in the future would be fully discounted. However, the opportunity cost of having invested in health for our ability to cover other non-health-related basic needs of the next generation would still have to be taken into account, even for a strictly cleronomic approach.

Thus, we can conclude that although an isolationist approach may provide us with some direction, it is as such insufficient if we take substitutability seriously. This should be taken all the more seriously if we consider that sufficientarianism should not have too low a threshold.

5. Conclusion

In this chapter, I stressed first the need to distinguish two dimensions of intergenerational justice—that is, justice between members of different age groups and justice between people from different birth cohorts. I focused on the latter. I explored the specific features that sufficientarian intergenerational justice exhibits. I emphasized moderate non-cleronomicity, a qualified authorization to generationally save and dissave provided that the sufficiency level of the generations

41. See, in this volume, the chapters by David V. Axelsen and Lasse Nielsen (Chapter 6), Efrat Ram-Tiktin (Chapter 8), and Carina Fourie (Chapter 10).

42. I am indebted to Carl Knight for an interesting exchange on this topic.

at stake can be met, and some implications of two of the typical features of a sufficientarian metrics (lesser preference-sensitivity and lesser responsibility-sensitivity). I also briefly presented two alternative defenses of intergenerational sufficientarianism that would not imply endorsing sufficientarianism in general, concluding that they have limited plausibility.

I then moved on to implementing such a general approach in the health/health care context. I did so with isolationist lenses first. Through the three examples (patent length, eradication vs. control, and antibiotic resistance), I illustrated and generalized what intergenerational sufficientarianism would entail, as summarized in Table 7.4. Such isolationist analysis is of course of some relevance, and it exhibits slightly distinct features from other approaches. However, some modesty is in order because even for a sufficientarian, an integrationist approach means that we cannot decide on health policy without taking into account how the generations at stake are expected to fare under the various scenarios in respects other than health. This is why we should resolutely continue to ensure that rules of thumb and proposals derived from theories of justice are relevant for real-life policy while remaining modest about the directions we advocate. Being sufficientarian, especially if the threshold is not implausibly low, does not immunize one from this task.

Acknowledgments

I thank Andreas Albertsen, David de la Croix, Nir Eyal, Carina Fourie, Richard Howarth, Carl Knight, Jasper Littmann, Alain Marciano, Tim Meijers, Lasse Nielsen, Toby Ord, Annette Rid, Ester Rizzi, Nicholas Vrousalis, James Wilson, Dan Wikler, and Danielle Zwarthoed. Apologies for not being able to do full justice to their very rich set of comments. I also acknowledge funding from the projects ARC 09/14-018 "Sustainability" (Communauté française de Belgique) and ESF ENRI "Rights to a Green Future" (European Science Foundation), as well as support from the Czech Academy of Science through a Franz Weyr Fellowship.