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DEMANDINGNESS AND CLIMATE CHANGE. FROM INSTITUTIONS TO INDIVIDUALS

ABSTACT: *DEMANDINGNESS AND CLIMATE CHANGE: FROM INSTITUTIONS TO INDIVIDUALS*

How much should we do to fight climate change? I argue that institutions ought to impose heavy burdens upon their members to fight climate change. In fact, I argue that an institution ought to impose a burden on its members if this prevents them from causing a greater burden to at least as many people. I show that, in the case of climate change, this means that an institution ought to demand from its members everything that is not an inviolable aspect of individuals' lives. This conclusion remains true even if individual emissions do not make a difference with respect to the effects of climate change. In fact, surprisingly, it is often the case that the less impact individuals can have on climate change, the more an institution ought to impose a burden on them.

1. *Introduction*

Anthropogenic climate change is one of the key problems humanity is called upon to deal with this century. Human emissions are changing our planet at an unprecedented speed, with devastating consequences for present and future people.[1] It is a crucial philosophical task that we examine the strength of the demand on present people to lower their emissions.

[1] IPCC, *Synthesys Report of the IPCC Sixth Assessment Report (AR6). Summary for Policymakers*, Geneva, IPCC, 2023.

While there is agreement that it is important to lower climate emissions, there is disagreement about how much each individual ought to do. A key part of the disagreement hinges on the fact that no single individual's emissions seem to make a relevant difference to how bad climate change will be[2].

The badness of climate change increases with enough additional emissions, but it may be that no individual emission makes a difference to the badness of climate change. On this basis some have argued that, if no individual makes a difference with respect to climate change, no individual has any demand to climate action[3].

This paper argues that institutions ought to demand a lot from individuals to reduce climate emissions. This is true even if no individual makes a difference with respect to climate change, and even if there are very strong limitations on what burdens institutions can impose on their members. Thus, even if there are ways to limit demandingness to individuals (prerogatives, freedom, individual rights), they do not limit the demandingness for institutions. This is a novel contribution on the discussion on demandingness: while there is a flourishing discussion on individual demandingness (spurred for example from Peter Singer[4]), there is no exploration of how much an institution ought to demanding to its members.

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[2] W. Sinnott-Armstrong, *It's Not My Fault: Global Warming and Individual Moral Obligations*, in S.M. Gardiner (eds.), *Climate Ethics: Essential Readings*, Oxford University Press, New York 2010, pp. 332–346; S.M. Gardiner, *A Perfect Moral Storm. The Ethical Tragedy of Climate Change*, Oxford University Press, Oxford 2011; J. Glover, M. Scott-Taggart, *It Makes No Difference Whether or Not I Do It*, in *Aristotelian Society Supplementary Volume*, vol. 49, n. 1, 1975, pp. 171–210.

[3] W. Sinnott-Armstrong, *op. cit.*; J. Nefsky, *Climate Change and Individual Obligations: A Dilemma for the Expected Utility Approach, and the Need for an Imperfect View*, in M. Budolfson, T. McPherson, D. Plunkett (eds.), *Philosophy and Climate Change*, Oxford University Press, New York 2021, pp. 201–221; E. Cripps, *Climate Change, Collective Harm and Legitimate Coercion*, in «*Critical Review of International Social and Political Philosophy*», vol. 14, n. 2, 2011, pp. 171–193.

[4] P. Singer, *Famine, Affluence, and Morality*, in «Philosophy & Public Affairs», vol. 1, n. 3, 1972, pp. 229–243.

The term "institutions" is used in this paper to encompass both political entities (such as states and polities) and economic actors (such as corporations, factories, and multinationals), which significantly contribute to global emissions. These entities, though not individuals, operate through collective actions that have substantial environmental impacts. While corporations can be viewed as reducible to the individuals that compose them, for the purposes of this paper, they are treated as collective entities to emphasize their distinct responsibilities in mitigating climate change.[5]

In fact, while no individual's emissions may make a difference to the badness of climate change, institutions certainly can make a difference by preventing a sufficiently large number of individual emissions. Even assuming that an institution can never impose burdens in ways that would interfere their members' core projects, relationships, or bodily integrity, institutions can nonetheless impose many other burdens given the likelihood of preventing great harm to future people. Institutions may, for example, be justified in preventing people from using heating (including water heating), air conditioning, or lighting if produced by fossil fuels.

To defend these claims, I must first introduce why some think that no individual makes a difference with respect to climate change (section 2). The idea is that, even if one person does not emit, someone else will, and climate change will be equally bad. Thus, no single individual can make a difference to how bad climate change is, and there are no individual demands to lower emissions. This is sometimes called the "argument from inefficacy".

I then identify a principle determining when an institution ought to impose a burden on its members (section 3). I call this principle "Harm Prevention". I build Harm Prevention in different subsections, to ensure that it is (A) intuitively plausible

[5] This clarification was added following a valuable suggestion from a referee, highlighting the importance of considering the role of corporations and economic actors in addition to states and individuals.

(section 3.1), (B) appliable to climate change (section 3.2), and (C) limited with respect to how much burden an institution can impose on its individuals (section 3.3). Roughly, Harm Prevention says that an institution ought to impose a burden on its members if this prevents them, as a collective, from causing a harm to others greater than the burden.

I then apply Harm Prevention to climate change (section 4). I report empirical research according to which, if we carry on emitting as usual, people living between the 26th and 36th centuries will suffer great climate harms (section 4.1). These future harms are great enough that Harm Prevention implies that present institutions ought to impose great burdens on their members to prevent them (Section 4.2).

Section 5 is devoted to exploring what this means for the problem of inefficacy. I show that often an institution has stronger duties to impose burdens on individuals the more emitters there are (essentially pulling in the opposite direction to the argument from inefficacy).

I conclude summarising the main findings of the paper: fighting climate change imposes great demands on individuals. Even if the demands may not be imposed by morality (due to the argument from inefficacy), they are imposed by institutions. This is true even if we assume extremely strong limitations as to how much institutions can impose burdens on individuals.

2. *Direct demands*

Climate change will cause great harm. It has caused and will cause natural disasters, such as hurricanes and wildfires, land losses to the sea or the desert, droughts and crop losses.[6] There is overwhelming evidence that climate change is generated by humans. How much ought people to do to prevent its harms?

[6] IPCC, *op. cit.*

I bracket for the moment the option of offsetting, and assume throughout the paper that governments will not manage to implement in time net zero technology sufficiently widespread and efficient to avert the damage from climate change.[7] Under these assumptions, there are two relevant aspects of people's obligations to climate change that will be addressed in this paper.

One aspect is that individuals ought not to increase the damage of climate change by emitting. I will call this the "direct" demand not to increase emissions. Philosophers of law would call a failure to comply with these "direct" demands a *malum in se*, that is, an action that is forbidden "in itself", a failure to comply with moral, not only political duties

Another aspect is that, to decrease damage from climate change, an institution ought to forbid individuals from emitting. I call this the "indirect" demand not to increase emissions. Philosophers of law would call a failure to comply with these "indirect" demands a *malum prohibitum*, that is, an action that is forbidden simply because unlawful. Individuals would have no obligation to avoid *mala prohibita* (that is, to comply with indirect demands) had an institution not imposed them.[8]

Let us examine direct and indirect demands in turn. Perhaps surprisingly, there is an influential argument according to which it is hard to show that individual people have any direct demands. While countries and industries can make a difference as to how bad climate change is by decreasing emissions, individuals may not be able to do that. For example,

[7] This technology would reduce how much an institution is required to lower energy consumption, as energy would have a lesser environmental cost. However, it is unclear whether we possess this technology and, if not, when we will. Regardless, an implementation of this technology at a large scale sufficiently quick to prevent damage from climate change would be unprecedented (see IPCC *op. cit.*, p. 24). It is important to understand what our climate demands are if there is no technological solution to climate change, as it would be irresponsible to assess our climate duties by relying on speculations about what technology may exist in the next centuries.

[8] Y. Lee, *Mala Prohibita and Proportionality*, in «*Criminal Law and Philosophy*», vol. 15, n. 3, 2021, pp. 425–446.

> Enough of us driving, flying, turning on our air-conditioners, etc., contributes to causing climate change, and its harmful consequences, but any one such act does not seem to make a difference. For instance, thing swill not go differently with respect to climate change depending on whether or not I fly to Europe this summer, or whether or not I take my car to work today[9].

Or

> Global warming will still occur even if I do not drive just for fun [i.e. pollute]. Moreover, even if I do drive a gas guzzler just for fun for a long time, global warming will not occur unless lots of other people also expel greenhouse gases[10].

And again

> the individual has every reason to believe that not only are there sufficient potential emitters, but that there are enough actual other emitters for her action to have only [a trivial impact]. […] each individual has reason to believe that, were all (or most) others to act in the relevant way, her actions would not trigger any extra harms. Because of the numbers involved and what she knows about others' motivations, she can assume that, were she to continue to emit at current levels, she would be one of just such a set[11].

This is often referred to as the "argument from inefficacy". It says that, since a person's emissions cannot, or almost certainly will not, make a difference with respect to global warming, then a person does not have demands to decrease their emissions. This argument is (perhaps surprisingly) popular among moral and political philosophers.

There are some replies against the argument from inefficacy.[12] For the purposes of this paper, I assume they all fail. I want to show that, even if the argument from inefficacy is successful, individuals still have great demands to fight climate change. These demands should be *mala prohibita*: they should come from impositions that an institution ought to impose on their members. When it comes to these indirect demands, things are very

[9] J. Nefsky, *op. cit.*
[10] W. Sinnott-Armstrong, *op. cit.*, p. 334.
[11] E. Cripps, *Climate Change and the Moral Agent: Individual Duties in an Interdependent World*, Oxford University Press, Oxford 2013, pp. 123–124.
[12] J. Broome, *Against Denialism*, in «*The Monist*», vol. 102, n. 1, 2019, pp. 110–129; D. Parfit, *Reasons and Persons*, Oxford University Press, Oxford 1986, pp. 67–87.

different: in the rest of the paper, I argue that institutions *can* do a lot for climate change and can do so by imposing burdens on individuals.

3. *Indirect demands*

3.1. *Harm Prevention (Personal)*

To find a suitable principle, I will need to proceed in steps. In this section, I propose an initial principle that is already entailed by many influential moral and political theories. This principle is restricted to present people only and cannot be applied to climate change just yet. I then defend a series of plausible modifications to this principle so that the suitably modified principle can be applied to climate change.

Consider:

> *Harm Prevention (Personal)*. An institution ought to impose a burden on one of its members at least if this efficiently prevents them from causing a harm much greater than this burden on one or more people.

By "burden" I mean a loss of their liberty, well-being, or resources. By "efficiently" I mean that the balance of prevented damage over imposed burden to be as great as possible. In other words, an institution cannot impose some burden to prevent a damage if it can impose a smaller burden to prevent the same damage, and an institution cannot impose a burden to prevent some damage if the same burden can be imposed to prevent a greater damage (this is sometimes called "necessity condition").[13]

Harm Prevention (Personal) seems to correctly justify the minimal interventions an institution ought to make in the life of its members. For example, Harm Prevention (Personal) implies that an institution ought not allow people to physically assault one another. It recommends institutions to restrict people's freedom to physically hurt other people. The restriction to some people's

[13] T. Hurka, *Proportionality and Necessity*, in E. Crookston, L. May (eds.), *War*, Cambridge University Press, Cambridge 2008, pp. 127–144.

freedom to assault others is justified by prevention of harm to others.

Harm Prevention (Personal) sets a plausible but minimal standard for institutional intervention. In fact, the scope of the principle is restricted to preventing members to harming someone else, such as preventing physical assault. It does *not* extend to cases where someone can be benefited if a burden is imposed to some unrelated person, such as cases when an institution could benefit some poor person by transferring wealth from a rich person who is not responsible for the poor person's economic condition. Harm Prevention (Personal) does not extend to these cases, because it just says that institutions ought to impose burdens on a person just to *prevent them from harming* another person.

The idea that harm prevention can justify policy intervention, which is the core of Harm Prevention (Personal), is shared by many political theories. Most notably, it motivates Mill's harm principle, according to which "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." [14] Mill's principle is widely endorsed in political theories, in particular in liberalism. [15]

This is not to say that Harm Prevention (Personal) is in accordance with every political theory: I expect, for example, some libertarians to oppose it. However, even a prominent libertarian thinker like Robert Nozick allowed that a state can limit their individual's freedom if this is needed to "restrain

[14] J. S. Mill, E. Rapaport, *On Liberty*, Hackett, Indianapolis 1978.

[15] J. Feinberg, *The Moral Limits of the Criminal Law. Volume 1: Harm to Others*, Oxford University Press, New York 1987; J. Feinberg, *The Moral Limits of the Criminal Law. Volume 2: Offense to Others*, Oxford University Press, New York 1988; N. Holtug, *The Harm Principle*, in *Ethical Theory and Moral Practice*, vol. 5, n. 4, 2002, pp. 357–389; A. W. Kernohan, *Liberalism, Equality, and Cultural Oppression*, Cambridge University Press, Cambridge–New York 1998.

persons about to violate [other] rights",[16] or "in order to avoid catastrophic moral horror".[17]

Harm Prevention (Personal) has a key difference from Mill's and Nozick's principle. The principle applies when *any* member of an institution may cause harm, and crucially, when *anyone* is harmed. This gives a definite answer to cases where Mill's and Nozick's principle are silent. This may seem too strong for some, for several reasons.

A first reason is that one may think that Harm Prevention (Personal) unduly extends the people whose harms an institution ought to prevent. In fact, some fervently patriotic thinker may believe that the only harms institutions ought to prevent is harm on *their own* members, and not to members of other institutions. It is true that neither Mill nor Nozick explicitly mention how institutions should behave to prevent harms to non-members specifically, but I consider this patriotic position too strong.

Most hold that an institution at least sometimes ought to prevent its members from harming non-members. For example, consider prisoners of war: it seems that an institution ought to ensure that the rights of war prisoners captured by the members of the institutions are respected. Or consider reparation duties: it seems that, if a country significantly damages another, either by conflict or by exploiting its members or resources, then this country has duties of reparation towards the other. The existence of such duties suggests that institutions first and foremost ought to prevent its members from harming non-members, so that if it fails to prevent the harm, it has to offer reparations as the second best thing. All this is compatible with the "patriotic" idea that the burdens to prevent harms to members ought to be greater than the burdens to prevent similar harms to non-members.

[16] R. Nozick, *Anarchy, State, and Utopia*, Basic Books, New York 1974, p. 13.
[17] *Ibid.*, p. 30.

A second reason to be reluctant to accept a principle according to which an institution ought to impose burdens to prevent harms to *anyone* is that some may believe that the duties we have towards *identified* people are different from duties towards *merely statistical* people. For example, some moral philosophers believe that the duties to save a specific, identifiable person from dying in front of us are different from the duties to make a donation to a charity to save the life of a person we'll never meet, about whom we may only know the merely statistical information that it is one person that we have contributed to saving.[18]

Even if we admit that an institution has stronger duties towards identified people than statistical people, it is still very plausible that an institution ought to impose burdens on members to prevent them from harming statistical people. Burdens on members such as speed limits or vaccines are still justified, even if they prevent accidents only to merely statistical people. Harm Prevention (Personal) justifies these interventions. It is possible that an institution ought to impose *greater* burdens on its members to prevent harms to identified people, but this is compatible with Harm Prevention (Personal).

The last reason for being reluctant about a principle according to which an institution ought to impose burdens to prevent harms to *anyone* is that "anyone" presumptively includes future people. This worry branches into two forms.

The first form is that some believe we should discount the value of future outcomes. For example, economists discount by 5% and 10% per year.[19] The discounting applied by economists is sometimes meant to reflect people's preferences. And people's preferences

[18] C. Hare, *Obligations to Merely Statistical People*, in «Journal of Philosophy», vol. 109, n. 5, 2012, pp. 378–390.

[19] D. Parfit, T. Cowen, *Against the Social Discount Rate*, in P. Laslett, J.S. Fishkin (a cura di), *Philosophy, Politics, and Society: Volume 6, Justice Between Age Groups and Generations*, Yale University Press, New Haven–London 1992, p. 144.

tend to be biased in favour of the present (we prefer an earlier gain over a later gain of similar or even greater size).

However, what is in question is not what are our current preferences, but the moral significance of suffering. It is rational to discount the badness of future suffering on the basis of its lower probability, but surely the badness of suffering does not change with its location in time per se. [20]

The second form of the worry about future people is that Harm Prevention (Personal) cannot apply in so-called "non-identity cases". A non-identity case is a case where the identity of a future person depends on which choice we make, so that different choices will bring into existence different people (at different wellbeing levels).[21] For example, which climate policies we adopt will determine which people will exist over the next few centuries. If we adopt better policies, those who will exist will be better off than the non-identical people who would have existed if we had not adopted these policies. There is some disagreement as to whether choices that ensure the existence of worse off people rather than different, better off people can be classified as "harm", assuming that the worse off people would have lives worth living. Since the climate-related policies I will be discussing later are most likely non-identity cases, it is important to clarify how Harm Prevention (Personal), and its later reformulations deal with the non-identity problem.

Some accept the view that we should be indifferent between causing one person to exist and causing another person to exist, regardless of their respective wellbeing levels (assuming each would have a life worth living).[22] However, this is widely

[20] J. Broome, *Weighing Goods: Equality, Uncertainty, and Time*, in *Economics and Philosophy*, Basil Blackwell, Cambridge (Mass.) 1991. J. Broome, *Weighing Lives*, Oxford University Press, Oxford 2004; S. Caney, *Climate Change, Intergenerational Equity and the Social Discount Rate*, in «Politics, Philosophy & Economics», vol. 13, n. 4, 2014, pp. 320–342; D. Parfit, *op. cit.*

[21] D. Parfit, *op. cit.*, pp. 351–381.

[22] M.A. Roberts, *Child versus Childmaker: Future Persons and Present Duties in Ethics and the Law*, in «Studies in Social, Political, and Legal Philosophy»,

criticised as an implausible view of what we owe to future people: for example, it struggles to explain what is bad about extinction, it says that it is morally permissible to create a future in which everyone has a barely good life rather than create a future of entirely different people in which everyone has an excellent life, and it faces other problems too.[23] I assume that we should reject this view.

I endorse instead more widespread views about the non-identity problem. On these views it is morally bad to cause future people to have a lower wellbeing than what some alternative set of future people otherwise would have had.[24] Not all these theorists would describe creating the worse off people as a *harm*, but most of them see creating people who are worse off rather than different people who are better off as having some moral weight, such that enough of it can outweigh the moral weight of harm to specific people.[25]

This concludes our analysis of Harm Prevention (Personal). A couple of modifications are needed before this principle is able to handle climate change. For starters, to apply it to climate

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Rowman & Littlefield, Lanham (Md.) 1998; M.A. Roberts, *Can It Ever Be Better Never to Have Existed At All? Person-Based Consequentialism and a New Repugnant Conclusion*, in «Journal of Applied Philosophy», vol. 20, n. 2, 2003, pp. 159–185; M.A. Roberts, *The Nonidentity Problem and the Two Envelope Problem: When Is One Act Better for a Person than Another?*, in M. A. Roberts, D.T. Wasserman (a cura di), *Harming Future Persons: Ethics, Genetics and the Nonidentity Problem*, Springer, Dordrecht–London–New York 2009, pp. 201–228; P. Vallentyne, *Broome on Moral Goodness and Population Ethics*, in «Philosophy and Phenomenological Research», vol. 78, n. 3, 2009, pp. 739–746; D. Boonin, *Non-Identity Problem and the Ethics of Future People*, Oxford University Press, Oxford, 2020; S.F. Magni, *Person-Affecting Procreative Beneficence*, in «*Phenomenology and Mind*», vol. 19, 2020, pp. 124–130; S.F. Magni, *In Defence of Person-Affecting Procreative Beneficence*, in «Bioethics», vol. 35, n. 5, 2021.

[23] For an overview, see G. Arrhenius, *Future Generations: A Challenge for Moral Theories*, Uppsala University Press, Uppsala 2000, pp. 114–139; H. Greaves, *Population Axiology*, in «*Philosophy Compass*», vol. 12, n. 11, 2017, e12442.

[24] H. Greaves, *op. cit.*

[25] Again, for the argument of this paper to work I need not to commit to the claim that the burden an institution can impose in non-identity cases is easier to justify to the burden an institution can impose in the more standard cases. Even if the difference between the burden and the harm has to be greater in non-identity cases than in the standard case, the arguments of this paper go through as long as causing the existence of worse off people rather than better off people is something that an institution ought to prevent.

change we need to explore how Harm Prevention (Personal) extends to the collective level.

3.2. *Harm Prevention (Collective)*

Harm Prevention (Personal) may not apply to climate change at the moment. In fact, according to the inefficacy argument, no average individual is doing any harm (that is, making a difference with respect to the badness of climate change) with their emissions. If no one is doing any harm, Harm Prevention (Initial) does not imply any institution ought to impose burdens on anyone.

This is why we need:

> *Harm Prevention (Collective)*. An institution ought to impose a burden *on each member of a set of people* at least if (1) this efficiently prevents this *set of people* from causing *as a collective* some harms on *each member of a much larger set of people* and (2) *each of these* harms is much greater than *each burden*.

Theories who accept Harm Prevention (Personal) should adopt Harm Prevention (Collective). Prominent moral and political theories may focus on the personal principle but not the collective principle because the examination of collectively caused harms is a relatively recent development. Let us examine the two key modifications from Harm Prevention (Personal) to Harm Prevention (Collective). The first is that the principle concerns sets of people rather than individuals. I take it to be straightforward that there is no loss of plausibility in this modification. If an institution can prevent harm by imposing on an assaulter the burden of not being able to assault, an institution can prevent harm by imposing on a group of assaulters the burden of not being able to assault *any other* person.

The second modification is more complex to unpack. It is that the principle applies even if harm is done as a collective rather than on an individual basis. This means that, in cases where no individual is doing harm as an individual, an institution still ought to intervene if individuals are harming as a collective.

This is crucial for climate change: if the inefficacy argument is true, climate change harm is done only as a collective, and not at the individual level.

The plausibility of this second modification is less obvious. This is because, when an institution imposes burdens on individuals in Harm Prevention (Personal), the institution is simply enforcing individual compliance with their moral duties (*mala in se*). By contrast, Harm Prevention (Collective) allows an institution to impose burdens on individuals even in cases where there is no individual duty to enforce (*mala prohibita*). Some may complain that this does not seem a legitimate imposition.

I, however, expect most people to agree that the modification is legitimate. Consider a case where all the nutrition of a village comes from the products of a specific field, but if enough people walk through the field, the field will be destroyed and become sterile. Restricting the freedom of movement of each community member in such a way that they cannot walk on the field appears perfectly justified, at least if the institution has the option to restrict access only either for everyone or for no one (for example because selective restrictions would be unfair or overcomplicated).

This is true even if there may be no individual duty not to walk on the field. In fact, the argument from inefficacy applies to this case analogously to how it applies to climate change: it would conclude that there is no individual duty not to walk on the field. The disruption of the field is caused as a collective: no single individual can effectively prevent the disruption of the field by not walking on it, thus, on the argument from inefficacy, there is no individual duty not to walk. And no person who walks on the field makes a negative difference to the field, so the argument from inefficacy implies there is no individual duty not to walk. The restriction of freedom still appears legitimate.

Or, consider the real case of passive smoking. Enough of it can seriously damage a bystander, but no single cigarette will harm the bystander. This means that, again, smokers damage others as a group, but no smoker has an individual duty not to smoke in public places, as no single smoker can harm others. However, it seems entirely reasonable to have at least some areas where smokers cannot enter, so that no one suffers passive smoking in these areas. This is what Harm Prevention (Collective) recommends.

Of course, it is easier to justify imposing burdens on individuals if these people have duties to bear these burdens. And, some philosophers do believe that individuals have duties as part of a collective, or when individual actions are part of a relevant causal chain, even when none of their individual acts makes a negative difference.[26] Nevertheless, an institution can certainly impose burdens even if there were no such duties, if this prevents individuals from causing sufficiently great harm, as in the case of the field-walkers and the smokers in the previous examples, or in climate change.

Harm Prevention (Personal) and Harm Prevention (Collective) both say that the prevented harm should be much greater than the imposed burden. This is straightforward to understand in Harm Prevention (Personal), where the burden *of who makes the harm* should be smaller than the harm *of who suffers the harm*. In Harm Prevention (Collective), things are not always as clear. We cannot say that each person should bear a burden proportional to the harm they cause, if they are not causing any harm.

Consider again the case where all the nutrition of a village comes from a field, and if enough people walk on the field, the field is destroyed and the village starves. No walker, individually, is doing any harm. So if the individual burden has to be smaller than the individually caused harm, no walker should bear any burden:

[26] J. Nefsky, *op. cit.*

this would make Harm Prevention (Collective) impossible to apply to this case.

An intuitive solution to this problem is to say that the burden an institution can impose on people should be proportional to one's share of harm to be prevented. That is: if a thousand walkers are about to destroy the field by walking on it, and the harm to be prevented is starvation, an institution ought to impose a burden on each the walkers proportional to a thousandth of how bad it is to starve.[27]

This is promising, but too simplistic, as it has counterintuitive results even for this basic case concerning the field-walkers. If the number of walkers were to increase, each person's share of the damage would *de*crease, but the damage would be equally bad. This means that, if enough walkers gather to walk the field (say, in the order of millions), an institution could impose on each walker only a negligible burden – indeed so negligible, that it is insufficient to forbid walks in the field. Again, this would make Harm Prevention (Collective) useless to the field-walker's case.

To avoid this, I suggest that Harm Prevention (Collective) should be interpreted as follows. When harm is caused as a collective, there is some number of contributions from the members of the collective that is sufficient to cause that harm (it may be vague what this number is). Beyond this number, further contributions to the harm either cause a greater total harm, or cause no additional harm. I propose that an institution ought to impose on an individual member a burden smaller than the individual's share of the number of contributions sufficient to cause the total harm in

[27] This may appear similar to what is sometimes called the "Share of the Total View", according to which each ought to produce the greatest share of the total benefit. The Share of the Total View has serious problems (See D. Parfit, *op. cit*. pp. 67-70). However, that is a theory about what one has to do, while my theory is about how to proportionally distribute burdens on harmful agents. Additionally, as it will be apparent below, I offer a solution based on a sufficiency threshold, which may avoid some of the problems that Parfit points out if my way to distribute burdens were to be transformed into a theory about what one ought to do. I do not, however, aim to defend this claim in this paper.

question. For example, let us assume that the field is destroyed if around 700 people walk on it: independently of how many walkers there are, an institution ought to impose on each walker less than around a 700th of the total harm generated by starving the village.

For a general principle such as Harm Prevention (Collective), this suggestive idea can be enough. For a more comprehensive application to more specific problems, such as climate change, this principle needs to be specified to deal with important complexities. Indeed, there are debates as to whether the burden on contemporary members should vary according to several things, such as the past emissions of their country, their income, or their colonial history. This paper does not aim to settle these important matters: I ask the reader to fill in the details according to their preferred views on distributive justice.

This concludes our examination of the extension of Harm Prevention (Personal) to collectives. Harm Prevention (Collective) is plausible, but our principle is not ready to be applied to climate change yet. As currently formulated, it may permit institutions to impose excessive burdens on individuals. In the next section, we'll consider how to restrict the principle to avoid permitting the imposition of excessive burdens. In the rest of the paper, we'll show that the principle still allows institutions to demand a lot from individuals even if it is highly restricted.

3.3. *Harm Prevention, and demandingness*

The principle needs one last modification, as it is not currently clear when the principle applies. Ought an institution to impose a burden *any time* it can prevent a set of people to do harm as a collective? This may make the burdens imposed by the institution too demanding for the institution members.

Philosophers have pointed out which aspects of a person's life morality cannot ask an individual to sacrifice without being

overly demanding. A core criticism against consequentialist theories is that they allow morality to get in the way of one's core projects, relationships, and bodily integrity.[28] Let us call the intrinsic inviolability of personal projects, relationships, and bodily integrity the *inviolability constraint*.

The boundaries of the inviolability constraint are blurry. There is certainly a difference between a core project, such as one's career in philosophy, from projects that are not central in one's life, such as going on a holiday once per year. And, there is a difference between a core relationship, such as a spousal relationship, and more peripheral relationships such as those between mere acquaintances. While I am not aware of any consensus on the exact boundaries between these categories, I will assume that such boundaries exist, and that only *core* projects and relationships are what morality and institutions cannot get in the way of without being too demanding.

Bodily integrity is not clearly defined either. On one hand, there seems to be consensus that, if we can save a child from drowning by just getting wet, we ought to do it. Of course, getting unexpectedly wet can give you a cold or a fever. Getting a fever to save a life seems ok. A greater violation of body integrity, such as losing a limb to save a life, is considered admirable, but beyond the call of duty. So there are *some* sacrifices to bodily integrity that are allowed, such as catching a cold or a fever, and some that are not, such as losing a limb. Let us call this latter kind of bodily integrity "core body integrity".

[28] B. Williams, J.J.C. Smart, *Utilitarianism: For and Against*, Cambridge University Press, Cambridge 1974; S. Scheffler, *The Rejection of Consequentialism: A Philosophical Investigation of the Considerations Underlying Rival Moral Conceptions*, Oxford University Press, Oxford 1994; S. Kagan, *Does Consequentialism Demand Too Much? Recent Work on the Limits of Obligation*, in «Philosophy & Public Affairs», vol. 13, n. 3, 1984, pp. 239–254; J. Lichtenberg, *Negative Duties, Positive Duties, and the "New Harms"*, in «Ethics», vol. 120, n. 3, 2010, pp. 557–578.

We have now a description of the inviolability constraint: it is that morality cannot get in the way of one's life project, core relationships and core body integrity. Our final principle is Harm Prevention (Final), or simply:

> *Harm Prevention*. An institution ought to impose a burden on a set of people at least if this efficiently and successfully prevents this set of people from causing as a collective a harm much greater than the burden on a much larger set of people. *The institution must always respect the inviolability constraint.*

At first glance this may seem like a reasonable constraint: who would want an institution to get in the way of one's projects, relationships, and bodily integrity? However, I expect most people will find this constraint extremely strong - indeed implausibly strong, unless one is libertarians.

There are two ways in which this constraint is extremely strong. The first is that some projects and relationships simply ought to be prevented. In fact, if an institution is always forbidden to get in the way of project or relationships or projects, a Harm Prevention principle cannot be applied even in paradigmatic cases where institution intervention is justified.

Suppose one's personal project is to physically assault minorities. Or that assaulting minorities is an activity that makes this person's relationship with their partner more meaningful as they keep bonding over doing it together. Or that this person needs to stay physically active to avoid a serious worsening of a heart condition, and assaulting minorities is the only physical activity this person is motivated enough to do to stay active. Surely an institution ought to restrict this person's freedom to physically assault minorities, even if this gets in the way of this person's project, relationship, and bodily integrity. The inviolability constraint is extremely restrictive (perhaps implausibly so) for a principle establishing when an institution can impose a burden on its members.

The second ways in which this principle is extreme is that it is an absolutist principle. Suppose that an institution member is about to assault and predictably murder another, and the only way for the police to intervene in time has the side effect of having an innocent bystander losing balance, which will predictably cause the bystander to break an arm. If we accept the Inviolability Constraint, an institution would forbid this intervention. However, it seems that preventing the harm of the assault should justify a bystander's broken arm.

I am assuming such strong constraint for two reasons. One reason is that it may be useful to have this constraint as a pragmatic safeguard against an abuse of the Harm Prevention principle. It may be good to err on the side of more restriction on institutions rather than less restriction of institutions in order to avoid an excess of impositions.

However, for the purposes of this paper, there is also a dialectical reason to endorse the Inviolability Constraint. In fact, I want to show that, no matter how strong of a (non-libertarian) constraint one may want to put on how much burden an institution can impose on one individual, institutions ought to impose great burdens on contemporary people to fight climate change. The Inviolability Constraint is a very strong constraint, and I argue that, even endorsing such a strong constraint, institutions ought to impose great burdens on contemporary people to fight climate change.

Indeed in the next section I show that, for any (non-libertarian) constraint one may want to put on how much burden an institution can impose on one individual, climate change requires institutions to impose on their members *everything up to that constraint*. If the burdens that institution ought to impose on climate change are very great even with extremely strong constraints on institutions, then institutions ought to impose on contemporary people burdens that are at least as great to fight climate change.

4. *Climate change*

4.1. *Climate scenarios in five centuries*

In this section I argue that, if Harm Prevention is true, fighting climate change requires institutions to impose great burdens on present people to prevent them from causing much greater burdens to future people. I do so by relying on empirical evidence from the last IPCC report and some recent studies on the long term consequences of contemporary emissions.

If global warming does not remain within 1.5º C from the pre-industrial era within the end of the century—a target so unlikely that no political institution pledges for it anymore—emissions of this century will keep increasingly warming the climate for more than a millennium. The consequences of this warming will be disastrous for many people who are currently alive today. Climate change is an important cause of terrible wildfires in Australia and California, devastating floods in South Asia, droughts of unprecedented length in East Africa, and many more events that are harmful to contemporary people.[29] There are of course obligations to prevent harms of this kind.

However, these obligations cannot be easily captured by that principle. In fact, it is not clear how much the suffering of contemporary people will decrease by imposing small burdens to other contemporary people. It is not clear, say, how different present people's life would be if the temperature at the end of the century were of 2.2ºC above pre-industrial level rather than 2ºC. Surely, some life will be better, but it is unclear how many lives, and how much better. Thus, for the purposes of this paper, we set aside climate obligations to contemporary people.

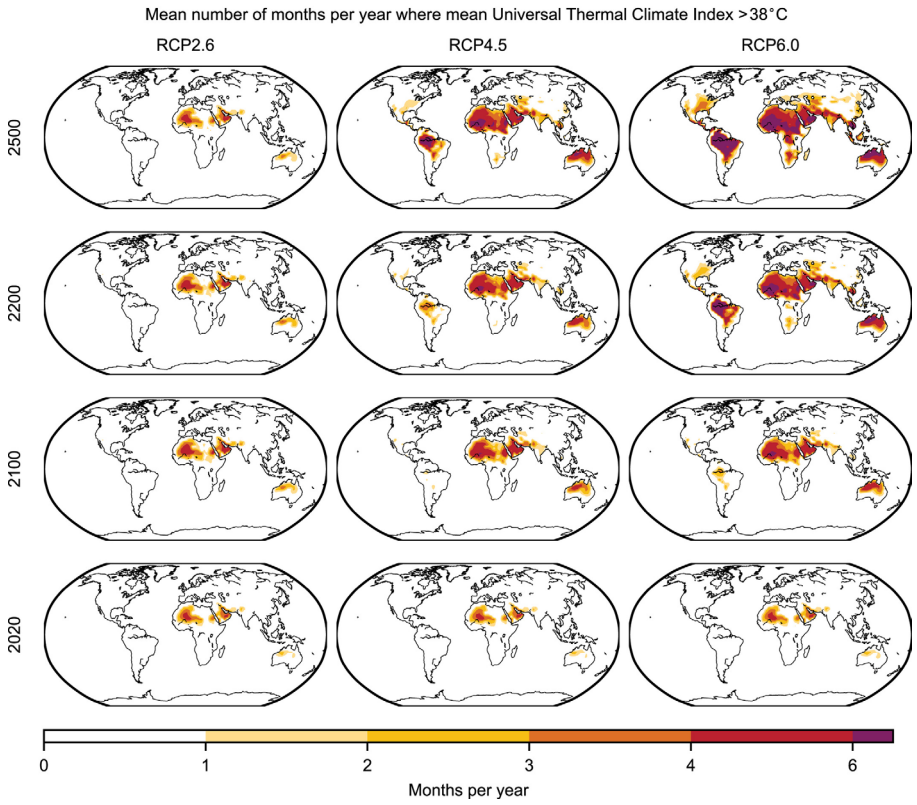
The applications of Harm Prevention to climate change become much clearer if we consider what happens in five centuries from now. In the remainder of the paper, I focus on harms happening between the 26th and the 36th century.

[29] IPCC, *op. cit.*

While the research on these centuries is particularly complex and at an early stage, the results are dramatic. In fact, with temperatures above 1.5ºC of global warming by the end of this century, people from the 26th to the 36th will face extreme living conditions.[30] For example, if global warming is around 2ºC by the end of this century, between 30% and 40% of the planet's land will be above 38ºC for over three months per year, while we are currently at less than 10%. This temperature is incompatible with human survival. In fact, above 35ºC, human bodies stop shedding heat to the environment, and start gaining from it. Thus, this temperature is deadly even for healthy, fit people, at least if experienced for more than six days in a row [31].

With a slight increase in global warming, things are much worse. If global warming were to be around 2.2ºC instead of 2ºC, around 50% of the planet's land would be above 38ºC for more than three months per year.[32] See the figure below, whose credits entirely belong to C. Lyon et al. [33], representing the difference between different scenarios. RCP 4.5 is a scenario where there are 2 degrees of global warming by the end of the century, RCP 6.0 is a scenario where there are 2.2 degrees of global warming by the end of the century.

[30] C. Lyon *et al.*, *Climate Change Research and Action Must Look beyond 2100*, in «Global Change Biology», vol. 28, n. 2, 2022, pp. 349–361.
[31] J. R. Buzan, M. Huber, *Moist Heat Stress on a Hotter Earth*, in «Annual Review of Earth and Planetary Sciences», vol. 48, n. 1, 2020, pp. 623–655; S.C. Sherwood, M. Huber, *An Adaptability Limit to Climate Change Due to Heat Stress*, in «Proceedings of the National Academy of Sciences», vol. 107, n. 21, 2010, pp. 9552–9555.
[32] C. Lyon *et al.*, *op. cit.*
[33] *Ibid.* figure 3. The figure is licenced under CC 4.0 https://creativecommons.org/licenses/by/4.0/ . I am grateful to Cristopher Lyon for his availability in sharing this figure.



Let us see what this means for an institution trying to apply Harm Prevention.

4.2. *The indirect demandingness of climate change*

Let me restate the final version of Harm Prevention, broken down in four conditions.

> *Harm Prevention*. An institution ought to impose a burden on a set of people at least if this (efficiency condition) efficiently (non-minority condition) prevents this set of people from causing as a collective some harms on a much larger set of people, and (proportionality condition) each of these harms is much greater than each burden. The institution must always respect (inviolability condition) the inviolability constraint.

In this section I argue that Harm Prevention implies that an institution ought to impose on its individuals a burden of the order of magnitude of eliminating heating, cooling, and lighting generated by fossil fuels. Members can still use temperature control and lighting generated by other sources (renewable energies, insulation, clothing, candles, and so on), or pay to offset these emissions, but this is still a greater imposition on

individuals than commonly appreciated. Indeed, this will be extremely burdensome for some people.

I will reach this strong conclusion despite the extremely strong Inviolability Condition. For any weaker constraint, what an institution ought to impose for climate change is even more burdensome.

Before proceeding with this section, it is important to clarify that this paper aims not to suggest specific policies but instead to illustrate what burdens institutions can impose on individuals to lower carbon emissions. The exact policy depends on the institution: the prioritization of the climate crisis over other considerations is beyond the scope of this paper. I just aim to describe the magnitude of the burdens that an institution ought to impose on individuals because of climate change, absent other considerations.

4.2.1. *The Efficiency Condition*

In order to argue that an institution ought to impose on its individual members a burden of the order of magnitude of eliminating heating, cooling, and lighting generated by fossil fuels, I need to show that this imposition satisfies all four conditions of Harm Prevention. The first condition is that this policy has to be *efficient*. A policy is efficient only if an institution cannot impose a smaller burden to prevent the same magnitude of damage, and the same burden cannot be imposed to prevent a greater damage.

Whether this is true depends on what other policies are available to an institution. It may be, for example, that some institution has greater priorities over climate policies in this moment. This empirical matter is beyond the scope of this paper, since I do not aim examining any particular institution. I simply assume that climate policies are among the policies that can prevent more harm (which, given the considerations in section 4.1, is very

plausible). However, for my argument to be effective, I need to defend that preventing an average member from using heating, cooling, and lighting generated by fossil fuels can be an efficient climate policy at least in some scenarios, as there is no available smaller burden that would avoid that same harm.

It is undeniable that decreasing domestic emissions is not a priority if compared with other emissions. Industrial institutions, which include factories and multinationals, consume more than twice the emissions that private houses consume, the emissions of transportation are 160% of houses emissions, and the emissions of agriculture and forestry are slightly greater than transportation emissions.[34] Only slightly more than 10% of global yearly emissions come from energy consumption in private houses.[35] For matters of efficiency, institutions ought to target the emissions of energy in houses only after these more dangerous emitters have been targeted. Institutions such as industries and corporations, as well as exceptionally high-emitting individuals, are more responsible for climate change than the average member. If global warming stays significantly below two degrees before we reach net zero and we eliminate any other source of emissions, institutions may not ever need to limit yearly emissions in houses.

However, it is not realistic that global warming will stay significantly below two degrees before we reach net zero. As of 2020, the globe has warmed by 1.1ºC, and the infrastructures for which there is no plan of abatement yet are expected to generate enough emissions to increase globe temperature by at least two additional degrees before the end of the century.[36] To stay below two degrees of global warming, we need an unprecedented effort in

[34] H. Ritchie, *Sector by Sector: Where Do Global Greenhouse Gas Emissions Come From?*, in *OurWorldinData.org*, 2020, available at: https://ourworldindata.org/ghg-emissions-by-sector.
[35] *Ibid*.
[36] IPCC, *op. cit*. pp. 6, 24.

reducing carbon emissions before 2050.[37] It is unlikely that this effort to reduce global emissions can succeed without institutions massively decreasing some individual emissions in private houses. Thus, despite domestic emissions are one of the many kinds of emissions that need to decrease, it is necessary to decrease them: there is no available smaller burden that would avoid that same harm.

In this sense, decreasing domestic emissions is efficient, and satisfies the first condition of Harm Prevention. It is not the policy that would prevent more climate harm, nor should this policy be prioritized over decreasing industry emissions or dealing with greedy polluters. Nevertheless, even if we were successful in dealing with much greater emitters, the decrease in domestic emissions will prevent so much harm, it will remain an efficient policy.

4.2.2. *Inviolability Condition*

According to Harm Prevention, an institution can impose some burdens only if the harm they prevent is greater than the burdens. To understand whether eliminating heating (including water heating), cooling, and lighting generated by fossil fuels on contemporary people, or something equally burdensome, is justified, we need to understand how big of a burden it would be, and how much harm it would generate. In this subsection, I start examining how big of a burden it is. In particular, we need to ensure these burdens can be imposed in a way that respects the Inviolability Condition, that is, that the policy cannot get in the way of one's core projects, relationships, or body integrity.

Some emissions an average house produces are absolutely necessary for our core projects, relationships, and bodily integrity. If we weren't able to eat, or to have a decent level of hygiene, to work, or to reach out to loved ones, our projects and

[37] *Ibid.*, p. 24.

relationships would not continue. Whatever burden an institution can impose on members, it cannot get in the way of these aspects according to Harm Prevention.

Fossil fuels are the default way to access heating, cooling and lighting in most countries. And heating, cooling and lighting are crucial for people' physical integrity. Getting rid of fossil fuel heating, cooling, and lighting would prove very uncomfortable for many people in the world – uncomfortable, but not devastating for people's physical integrity.

In fact, fossil fuels are not necessary for one's bodily integrity. People needed to deal with darkness and temperature control much earlier than fossil fuel were available, and many effective methods have been found. For example, one can put more clothes on to stay warm, have more frequent showers to stay cool, and use candles for lighting. In temperate countries, for sufficiently healthy people, these methods may be sufficient to preserve core body integrity.

However, reverting to such traditional methods will be uncomfortable even in temperate countries. Even the healthiest people living in the most temperate climates will be more prone to a cold or flu in the winter by simply switching the heating off. Furthermore, for more vulnerable people, the option of switching fossil fuel temperature regulation off can put their health significantly at peril: they need to recur to other options as well.

There are two other options to traditional methods. One is to offset the environmental harm.[38] That is to say, who cannot afford

[38] This has not to be confused with a carbon tax. While there is consensus among economists that the carbon tax successfully disincentivizes emissions of fossil fuels, there is great disagreement as to whether it compensates for environmental harm, since this harm is extremely hard to quantify. One point of disagreement is how much should we discount the damage of emissions over time. The tax typically has with a 2% discount rate for each year, which is too strong to plausibly capture the value of future harms. A 2% discount rate means that preventing a harm today is equivalent to prevent twenty thousand equivalent harms in the 26th century, and eight trillion equivalent harms in the 36th century. One would need a strong philosophical argument to defend that

to switch fossil fuel heating off can pay either someone else to decrease emissions by an equivalent magnitude, or to repair for the environmental damage. The other option is to insulate houses and access renewable energies. The extent to which either is expensive changes across different countries and different houses, but we can safely assume that, at least in some cases, this will be quite expensive, either in terms of direct cost or in terms of taxation.[39] It is likely to mean, for example some visit to the restaurant less, some vacation less, and other sacrifices to one's everyday life that is not plausibly included in one's core project.

To summarise, an institution can eliminate heating (including water heating), cooling, and lighting generated by fossil fuels on contemporary people, without getting in the way of people's core projects, relationships, and bodily integrity. However, eliminating this consumption to fossil fuels will be burdensome still. This can happen in two ways. One is to give up on heating, which is likely to cause many people to get some minor sickness, such as a cold or a flu. The other is to pay a lot in offsetting the emissions, insulating, or implementing renewable resources. While none of this will get in the way of people's core bodily integrity, project, or relationship, it is likely to be a significant imposition on people's lives.

Indeed, according to Harm Prevention, it may even branch out to invade *any* aspect of people's life that is not their core bodily integrity, project, or relationship. If one decides to endure the cold in the winter and the heat in the summer, health issues can get in the way of most of the good things in life. The

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the people who will suffer the most from climate change should be worth so little compared to us, and as we have seen in section 2, there is no argument for a social discount rate.

[39] I leave open whether, if a less affluent institution cannot afford insulation or implementation of renewable energies, a more affluent institution ought to step in and pay, especially if the more affluent institution is more responsible for climate change. These issues about compensation across states are beyond the scope of this paper.

Inviolability Constraint reduces how much a person can be asked to endure cold and warmth, but all that is not protected by the constraint can be imposed.

Equivalently, as long as the economic cost imposed on an individual is sufficiently high, this individual will need to spend their time working and their all their income to pay for to reduce emissions. This ensures that all aspects of one's people's life can be affected by this policy. Of course, the Inviolability Constraints reduces how much an institution can ask to an individual, but paying for emissions from house consumption of fossil fuels can reach the point of sacrificing any aspect of one's person life that is not protected by such constraint.

If institutions ought to impose on present people to sacrifice any aspect of their life that is not protected by the Inviolability Constraint, then climate change more demanding than commonly appreciate, albeit not over-demanding in the sense intended by moral philosophers.

To conclude, there is a measure that would bring contemporary emissions down 10% that, despite respecting the Inviolability Condition, imposes a sizable burden on some present people, either in terms of discomfort or in economic terms. Indeed the burden can be so sizable, it may invade *any* aspect of people's life that is not their core bodily integrity, project, or relationship.

4.2.3. *Non-Minority Condition and Proportionality Condition*

We have seen that there is an institution that lowers emissions by 10% by imposing great burdens on present people, even as large as to invade *any* aspect of people's life that is not protect by the inviolability constraint. If this burden leads to prevent a much greater harm to future people, Harm Prevention recommends institutions to impose it. In this section, I show that the prevented harm would indeed be much greater.

In order to do so, I will look at the different climate scenarios introduced in section 4.1. Of course, an accurate prediction of how to obtain these scenarios and what will happen in them is the work of a scientist rather than a philosopher, and it is beyond the scope of this paper. I can, however, make some simplifying assumptions on the scientifical data we have available. While these simplifications do not lead to accurate predictions, they indicate how we should act if scientific truth were sufficiently close to these simplifying assumptions.

The main simplifying assumption I make is that, if institutions were to reduce 10% of the yearly global emissions in the remainder of the century, which is the reduction from individual emissions we are looking at, we are very likely to be successful in sparing people of the 26th to 36th century at least an increase of 0.2ºC. I make this assumption by relying on scientific predictions and on a simplification. The (conservative!) scientific predictions indicate that humanity is currently on track of reaching 2.7ºC of global warming by the end of the century,[40] which are likely to result in an even greater global warming in five centuries. The simplification is that, despite being aware that the correlation between carbon emissions and global warming is not always linear, I assume that decreasing emissions by 10% will lead to around 10% decrease in global warming. This simplification is needed to keep matters tractable.

So let us assume that, if institutions were to reduce 10% of the yearly global emissions in the remainder of the century, which is the reduction from individual emissions we are looking at, we are very likely to be successful in sparing people of the 26th to 36th century at least an increase of 0.2ºC. For simplicity, suppose that this were the difference between 2 ºC and 2.2 ºC of global warming for now. This difference of 0.2ºC would be the difference between future people having an area equal to roughly 10% of the

[40] IPCC, *op. cit.* p. 13.

planet surface (that's roughly as big as one time the United States and a half) that is compatible with human survival, or not having it, with all the problems associated to it. As we will see in the next section, at higher temperatures the loss will likely be even bigger (we have no scientific predictions about scenarios between 1.5 and 2 degrees in the 26th to 36th century).

The problems associated to this loss of land to the heat are not only that humans cannot inhabit these lands more than they can currently inhabit the Sahara desert. The problems are also that this large surface of the world will be incapable to grow crops. This will cause food shortages, which may cause people will need to move out of this area, which will cause immigration problems if not even conflicts. Finally, this surface will be uninhabitable to animals, which will reduce biodiversity: the reduction of biodiversity which has various devastating effects all over the globe, for example by increasing the risk of pandemics and making crops more vulnerable to pests worldwide.[41]

And these are the damages relative to land loss to heat alone. An increase from 2 ºC to 2.2 ºC is sure to lead to land being lost to the sea, an increase in extreme climate events, an increase in needs of water, and all the other terrible consequences of climate change.

These harms to future people would be enormous. The loss of basic resources, such as water and food, and the dangers of war and the troubles of immigration are harms incomparably greater than the burden of not being able to access to fossil fuel domestic temperature control. These harms to future people are greater even than the burden of significant restrictions on all aspect of present people's life beyond core bodily integrity, project, or relationship. This is because this 0.2 ºC increase of climate change is likely to significantly disrupt *future* people's core integrity, project, or relationship, *and* to disrupt all aspect of

[41] C. Lyon *et al.*, *op. cit.*

present people's life that are not protected by the inviolability constraint. Harm Prevention recommends imposing this burden on present people to benefit future people, if potentially harmed future people were sufficiently more than burdened present people. Indeed, people suffering future harm are likely to be many more than burdened present people. There are around 8 billion present people. Assuming that people living in each century from the 26th to the 36th will be at least half of the people living now, there will be at least 40 billion people living these centuries. Thus, there are enough potentially harmed future more than burdened present people to satisfy what I called the "non-minority condition", according to which the burdened people must not be more than the potentially harmed people. Thus, Harm Prevention prescribes an institution to impose on present people burdens equivalent to preventing them from using fossil fuels for heating (including water heating), air conditioning, and lighting to fight climate change. Since Harm Prevention recognizes strong constraints on institutions, every plausible alternative principle of what an institution ought to impose on its members to fight climate change will countenance imposing burdens that are at least this great.

As Meyer and Pölzler argue, ensuring intergenerational justice involves meeting basic needs and maintaining a fair distribution of resources across generations.[42] This perspective supports the idea that imposing burdens on present populations is ethically justified when it prevents far greater harm to future generations. While this paper focuses on the relationship between current generations and future generations under the "non-minority condition," it is worth noting that similar ethical considerations apply to relationships between ethnic groups, particularly in the context of environmental racism. Environmental racism refers to

[42] L.H. Meyer, T. Pölzler, *Basic Needs and Sufficiency: The Foundations of Intergenerational Justice*, in S. M. Gardiner (eds.), *The Oxford Handbook of Intergenerational Ethics*, Oxford University Press, Oxford 2022.

the disproportionate exposure of marginalized ethnic communities to environmental hazards and climate-related harms. These dynamics underscore the importance of equitable climate policies that address both intergenerational justice and intragenerational disparities.[43]

5. *Indirect demandingness and inefficacy*

We have seen that, according to Harm Prevention, institutions ought to impose a lot on individuals to fight climate change. We have seen that this is true even assuming extremely burdensome limits as to how much an institution can impose on people. In this section we see how this successfully tackles the argument from inefficacy.

On the argument from inefficacy, since a person's emissions cannot, or almost certainly will not, make a difference with respect to global warming, then a person does not have demands to decrease their emissions. This is because the individual has every reason to believe that there are enough actual other emitters for her action to have only a trivial impact.

To reply to this, an argument based on Harm Prevention cannot simply say that an institution may ask individuals what morality is not asking. In fact, who believes in the argument from inefficacy may argue that what is true for individuals may be true for institutions as well. They may argue that each institution has every reason to believe that not only are there sufficient potential institutions emitters, but that there are enough actual other emitters for the institution's action to have only a trivial impact.

However, the scale of emissions that an institution can influence works very differently than the scale that average people can influence. It may be the case that, if an action produces less

[43] For a review of this issue, see P. Mohai, D. Pellow, J.T. Roberts, *Environmental Justice*, in «Annual Review of Environment and Resources», vol. 34, n. 1, 2009, pp. 405–430.

than a certain amount of emissions, this action does not make any difference when it comes from climate change. However, for policies involving emissions above a certain threshold, not only every action makes a difference, but preventing any amount of emissions above such threshold prevents increasingly more harm. To see that, we need some empirical information.

In the last section, we have analysed how much damage would be prevented for future people if we were to decrease global warming in the 0.2 ºC. However, the examination has only focused only on the 0.2ºC that separate a global warming of 2ºC by the end of the century from a global warming of 2.2ºC by the end of the century. What happens if the change is between higher temperatures? For example, what happens if we are ensuring that the temperature will be 3ºC rather than 3.2ºC, or 4.3ºC rather than 4.5ºC?

Research about how climate will behave in the 26th to 36th century is at an early stage, and scientist have not focused on scenarios above 2.2 ºC of global warming by the end of the century as much. However, the 2023 IPCC report states very clearly that each additional increase of global warming is likely to significantly worsen the situation, for contemporary people as well as future people:

> Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming (*very high confidence*). Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage (*high confidence*)[44].

This means that, most likely, the damage created by any additional 0.2 ºC of global warming is greater the higher is the temperature. In other words, reducing global warming from 2.2 ºC to 2 ºC prevents less damage than reducing it from 3.2 ºC to 3 ºC, which prevents less damage than reducing it from 4.5 ºC to 4.3 ºC. And so on.

[44] IPCC, *op. cit.* p.15, emphasis in the original text.

Thus, an institution has stronger reasons to prevent pollution the more other institutions pollute, since the prevented harms are bigger. Preventing people from using fossil fuels in their house will prevent more harm if there are more emissions in the atmosphere rather than fewer. While of course some sufficiently small countries may still be ineffective, for most countries the argument from inefficacy cannot work.

We can then conclude that indirect demands to avoid *mala prohibita* behave in the opposite way as direct demand to avoid *mala in se* behave. Thus, even if the argument from inefficacy were to work for direct obligation against *mala in se*, individuals still have to great endure great burdens due to indirect obligations to fight climate change to avoid *mala prohibita*.

6. *Conclusion*

Institutions, encompassing both political entities and industrial actors, hold a pivotal role in addressing climate change through collective action. In this paper I showed that institutions ought to impose great burdens on their members to fight climate change. This is true even if the inefficacy argument is correct, and even if we assume strong limitations as to when an institution can impose burdens on its members.

To do so, I defended a principle of when an institution ought to impose burdens on its members, called Harm Prevention. It says that an institution ought to impose burdens on its members if this prevents them from causing a harm much greater than the burden. The principle, however, forbids the institution from imposing obstacles to individuals' projects, relationships. I show that this is a very strong limitation as to when institutions can impose burdens on their individuals.

Even with such strong limitations, institutions ought to impose on their individuals a lot to reduce emissions. For example, heating, water heating, air conditioning, and lighting produce roughly 10%

of global yearly emissions, but are not necessary for most people's projects or relationships. A 10% decrease in global emissions would prevent people from the 26th to the 36th century from losing 10% of the world surface to heat, with all connected loss in crops and biodiversity. Since the burden of losing temperature control and lighting all year around is lighter than the cost of losing to the heat such a large area, Harm Prevention prescribes to impose burdens of this magnitude.

The arguments of this paper do not imply that we ought to turn heating and air conditioning off unless our institution tells us to do so. However, we may have an obligation to ensure that our institutions comply with their duties. Our institutions are asking us much less emission reductions than turning the heating off. And, of course, our institutions aren't doing enough to decrease emissions from far more damaging sectors than house heating, such as industry production or airplane emissions. If members are responsible for the compliance of their institutions, they should ask much more from them, and ask greater impositions on themselves, too.

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