Climate Change, Potential Catastrophes and the Rights of Present and Future Generations

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Abstract

Climate change is one of the most challenging environmental problems of our time. In this paper, I analyse some of the ethical issues raised by climate change, especially the human rights that are threatened by the impacts of global warming and the problem of partial compliance or non-compliance to moral duties. I also assess some ethical implications of potentially catastrophic phenomena driven by this ecological issue and recommend specific solutions by briefly developing institutional reforms to current climate policies. My point is to explain, by using a normative approach based on sound empirical findings, in what sense climate change can be seen as a philosophical problem that should worry ethicists and political theorists, and what can be done to avert the massive violation of the rights of present and future victims of climate change. I focus specifically on solutions in terms of mitigation (and therefore set aside adaptation and compensation) and try to explain why incentives can play an important role to reduce global greenhouse gas emissions.

Keywords: Climate change, human rights, realism, motivation, incentives.

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In order to successfully tackle climate change, a balance between four main objectives must be found: justice, or fairness; environmental effectiveness, or maximizing the effects of climate policies; political realism, or institutional feasibility; and economic efficiency, or minimizing the costs of climate policies. Since these aims may (and often do) conflict with each other, reconciling them is a difficult task: an environmentally effective solution reducing quickly and drastically greenhouse gas emissions such as a very high carbon tax may conflict with social justice by harming the poor, for low-income people suffer the most from increases in the price of energy; likewise, an economically efficient and politically realistic solution such as institutional offsetting through the Clean Development Mechanism[1] can sacrifice environmental effectiveness and fairness in the name of cost effectiveness.

Here I wish to focus mainly on the relation between two objectives: fairness, by asking how to understand and reduce specific climate injustices; and realism, by developing institutional reforms that are possible to carry out in fact. If the first objective is the most important one, it is also crucial to make sure that fair solutions to climate change can be implemented in the non-ideal circumstances of the real world, especially in situations of partial compliance or non-compliance to moral duties.

I begin by explaining why an approach of climate justice based on universally accepted human rights is normatively convincing as well as politically realistic; then, I show how impacts of global warming threaten some human rights of members of present and future generations, even if we use conservative projections; I finally ask what kind of climate policy could prevent the violation of these human rights. To ensure that future generations will enjoy an open future rather than suffer from the catastrophic impacts of an abrupt climate change, I believe that an approach trying to combine fairness and realism represents an important contribution.

I. Why Human Rights?

The ultimate objective of the United Nation Framework Convention on Climate Change (UNFCCC), the foundational international climate treaty that was written in 1992 and entered into force in 1994, is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system", its 194 Parties being "*determined* to protect the climate system for present and future generations."[2] To know how to avoid a "dangerous anthropogenic interference with the climate system", we need a normative as well as an empirical analysis. If the Intergovernmental Panel on Climate Change (IPCC) gathers every five to six years accurate empirical findings, human rights are a convincing moral approach.

In order to develop a realistic position, I will focus only on human rights that already exist in international law, rather than on new environmental human rights; I will also refer exclusively to negative righty, because they are philosophically and politically less controversial than positive rights. For instance, even minimalists such as David Miller acknowledge that negative human rights generate duties towards distant strangers[3]. Such rights can be described as "the internationally recognized minimal standard of our age"[4]: by showing how climate change threatens them, one can find an uncontroversial position. My aim is not to develop a theory of justice, but rather to present an approach of climate justice

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1 To know more about offsetting, the following paper is a useful introduction: Keith Hyams and Tina Fawcett, "The ethics of carbon offsetting," *WIREs Climate Change* 4:2 (2013), pp. 91-98.

2 UN 1992, *United Nations Framework Convention on Climate Change*, online at: http://unfccc.int/resource/docs/convkp/conveng.pdf (accessed 2013-07-19).

3 David Miller, *National Responsibility and Global Justice* (Oxford: Oxford University Press, 2007).

4 Thomas Pogge, *World Poverty and Human Rights: Cosmopolitan Responsibilities and Reforms*, second edition (Cambridge : Polity Press, 2008 (2002)), at p. 25.

based on human rights: the point is not to find pure principles of justice but only to prevent specific climate injustices[5].

There are very different theories of human rights, such as legal, political and moral approaches. Like Simon Caney and Derek Bell, I use here a moral theory of human rights, where these rights are characterized by four main elements:

- They are based on our common humanity and are therefore independent of the country in which persons are born, the place where they live or the actions they have performed;
- They represent a moral threshold below which no one should not fall, the most basic moral standards to which persons are entitled;
- They generate obligations on all persons to respect these basic minimum standards: everyone has a duty not to violate or contribute to the violation of human rights;
- They take priority over other moral values, such as promoting happiness.

In short, "human rights specify minimum moral threshold to which all individuals are entitled, simply by virtue of their humanity, and which override all other moral values."[6]

II. How are Human Rights Threatened by Climate Change?

Policymakers, whether citizens or politicians, tend to worry about the short and (at best) middle term consequences of the policies they choose and design. This is not a hypothesis concerning human nature; it is a fact that represents one of the best explanations of the deplorable state of climate policies. Moral considerations matter; but to make sure that they matter enough, they must somehow be connected to people's interests. This statement refers to the metaethical problem of motivation: there is a psychological gap between the acceptance of a rule and acting in accordance with it. Moral norms cannot by themselves compel conformity: all they do is prescribe a certain course of action. In order to make someone act accordingly, they often have to rely on further factors. As Dieter Birnbacher puts it, "having moral reasons for an action and being motivated to carry it out are distinct items, so that a psychological mechanism independent of the acceptance of the moral rule is needed to explain action in conformity with it."[7] This is why we must not only refer to moral motives to combat climate change: we must also rely, as I will try to show below, on quasi-moral and non-moral factors. Otherwise, the problem of motivation remains unaddressed.

One good starting point to explain why human rights are jeopardized by climate change is the 2007-2008 Human Development Report, which reads: "climate change is already starting to affect some of the poorest and most vulnerable communities around the world." According

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5 *Ibid.*, at p. 25: "[h]uman rights thus furnish a necessary, not a sufficient, condition of social justice: that some institutional design realizes human rights insofar as is reasonably possible may not guarantee that it is just. Only the converse is asserted: an institutional design is unjust if it fails to realize human rights insofar as is reasonably possible."

6 Simon Caney, "Climate Change, Human Rights, and Moral Thresholds," *Human Rights and Climate Change*, edited by Stephen Humphreys (Cambridge: Cambridge University Press, 2010), pp. 69-90, at p. 73. As Simon Caney emphasises a former paper on the topic, his approach is inspired by Pogge's political philosophy: "[m]y strategy here is much influenced by the work of Thomas Pogge." (Simon Caney, "Human Rights, Responsibilities and Climate Change," *Global Basic Rights*, edited by Charles Beitz and Robert Goodin (Oxford: Oxford University Press, 2009), pp. 227-247, at p. 234). See also Derek Bell, "Does anthropogenic climate change violate human rights?," *Critical Review of International Social and Political Philosophy* 14:2 (2011), pp. 99–124, and Derek Bell, "Climate change and human rights," *WIREs Climate Change* 4:3 (2013), pp. 159-170.

7 Dieter Birnbacher, "What Motivates Us to Care for the (Distant) Future?," *Intergenerational Justice*, edited by Axel Gosseries and Lukas H. Meyer (Oxford: Oxford University Press, 2009), pp. 273-300, at pp. 273-274.

to the United Nations Development Program (UNDP), if global greenhouse gas emissions keep on increasing, "climate change will undermine international efforts to combat poverty", for instance by "hampering efforts to deliver the MDGs [Millennium Development Goals] promise." For this reason, our contribution to this environmental problem represents "a systematic violation of the human rights of the world's poor and future generations and a step back from universal values". In other words, "[t]he real choice facing political leaders and people today is between universal human values, on the one side, and participating in the widespread and systematic violation of human rights on the other."[8]

The UNDP refers to a plurality of human rights. As Stephen Humphreys details, "climate change will undermine – indeed, is already undermining – the realization of a broad range of internationally protected human rights: rights to health and even life; rights to food, water, shelter and property; rights associated with livehood and culture; with migration and resettlement; and with personal security in the event of a conflict."[9] Three of these rights, that I will interpret as negative rights, are quite uncontroversial in political and philosophical debates: the rights to subsistence, to health and to life.

An "Optimistic" Scenario

I will now analyse how climate change threatens these rights by using a conservative approach: the predictions of the 2007 IPCC Report[10]. This report is conservative for numerous reasons, the main one being that most of recent scientific publications on the future impacts of global warming are much more pessimistic. The reason for this is that the IPCC uses only a gradual model of the rising of global temperature, without developing a scenario assessing what would happen in the event of an abrupt warming. One additional reason to use this report is that it is the most authoritative scientific source for multidisciplinary debates on climate change, and thus represents a common starting point for policymakers and philosophers.

First, let us take the right to subsistence. It can be minimally defined as the right not to be deprived of one's means of subsistence by other people's actions. Two impacts of global warming that will hit agriculture badly are sea-level rise and extreme meteorological events. Because of such (and many other) effects, by 2020, in some African countries, agricultural production will be diminished up to 50%, thereby exacerbating poverty in the poorest regions of the world; by 2050, crop yields could decrease up to 30% in central and south Asia; and finally, by 2100, mean yields for some crops in northern India could be reduced by up to 70%.

One country in which a massive violation of this right will occur if political inertia remains is Bangladesh: some lands will be lost to the sea, some will be flooded when there are storms, and even lands that remains dry will be damaged. All of this will cripple agricultural output, increase hunger and starvation, and push the country further into poverty: rising sea will flood large tracts of land, interfering with existing infrastructure and food production, "possibly creating the largest humanitarian crisis the world has ever faced."[11] But small island nations such as the Maldives face an even worse fate: they may entirely disappear beneath the

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8 UNDP 2007, *Human Development Report 2007/2008: Fighting Climate Change: Human Solidarity in a Divided World* (New York: United Nations Development Programme Publications), online at: http://hdr.undp.org/en/media/HDR_20072008_Summary_English.pdf (accessed 2013-07-19).

9 Stephen Humphreys, "Introduction: human rights and climate change," *Human Rights and Climate Change*, edited by Humphreys, pp. 1-33, at p. 1.

10 IPCC 2007, "Summary for Policymakers," *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by M. L. Parry *et al.* (Cambridge: Cambridge University Press), pp. 7-22.

11 Andrew Guzman, *Overheated: The Human Cost of Climate Change* (Oxford: Oxford University Press, 2013), at p. 12.

waves, which will cause massive migration, with entire populations becoming not only climate migrants, but also climate exiles[12].

The second negative internationally recognized human right threatened by climate change is the one to health. It can be defined as the right not to have one's health seriously threatened by other people's actions. Climate change will affect the health status of millions of people during the century by: increasing malnutrition and consequent disorders; increasing disease and injury due to heatwaves, floods, storms, fires and droughts; increasing frequency of cardio-respiratory diseases; and by altering the spatial distribution of some infectious diseases.

Let us take two existing diseases: malaria and dengue fever. If global temperatures increase by 2 to 3°C, malaria will present a risk to an additional 3 to 5% of the world's population, that is, around 200 million *additional* people. Concerning dengue fever, if the temperatures increase by 2.5°C, then 2.5 *billion* additional people will be at risk. Climate change will also increase the risk of a global health crisis by pushing always more people in cities and refugee camps with unsanitary spaces, precisely the conditions suitable to the outbreak and the spread of a global epidemic[13]. Therefore, climate change will reinforce and amplify current as well as future socio-economic disparities, leaving the disadvantaged with greater health burdens: it will greatly exacerbate global health inequities among current generations and establish profound intergenerational inequities[14].

The last human right I would like to mention is the one to life. It can be defined as the right not to be arbitrarily deprived of one's life. Multiple effects of climate change threaten it. For example, because of an increasing frequency of severe weather events such as tornados, hurricanes, storm surges and floods, millions of people will loose their lives during the 21st century. About 40% of world population lives in coastal regions: many of these regions will become more and more dangerous to live in[15]. Another impact is the increasing frequency of droughts: by 2020, between 75 and 250 million people are projected to be exposed to increased water stress only in Africa; and by 2050, more than an additional billion of people will be concerned by this problem in Asian regions.

Billions of people rely on mountain glaciers to serve as massive water-storage facilities. These natural storage systems are melting, creating flooding during the rainy season and drought during the dry season. If climate change impacts are already observed in the Maldives and Bangladesh because of sea-level rise, we also see them in Bolivia because of melting glaciers. Half of humanity may be hit, mostly in Asia, with diminishing agricultural production and more people getting sick and starving to death[16].

These different drivers of human rights violation do not operate in isolation: most of them are interrelated. For example, heat and droughts are often linked, along with fires and water shortages. Floods precipitate disease outbreaks such as cholera and other diarrheal disease, damage infrastructures and disrupt food and water security. Many regions will be exposed to multiple impacts and thus multiple human rights violations[17]. More generally, the impacts of climate change "will interact with wider social, economic and ecological processes that shape

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12 Sujatha Byravan and Sudhir C. Rajan, "The Ethical Implications of Sea-Level Rise Due to Climate Change," *Ethics & Public Affairs* 24:3 (2010), pp. 239-260.

13 Guzman, *Overheated: The Human Costs of Climate Change*, ch. 6: "Climate Change is Bad for your Health".

14 Elizabeth G. Hanna, "Health hazards," *The Oxford Handbook of Climate Change and Society*, edited by John S. Dryzek *et al.* (Oxford: Oxford University Press, 2011), pp. 217-231.

15 Neil Adger and Sophie Nicholson-Cole, "Ethical dimensions of adaptating to climate change-imposed risks," *The Ethics of Global Climate Change*, edited by Denis G. Arnold (Cambridge: Cambridge University Press, 2011), pp. 255-271.

16 Guzman, *Overheated*, pp. 104-118.

17 Hanna, "Health hazards", at p. 225.

opportunities of human development."[18] In other words, climate change will magnify existing risks by exacerbating world poverty, the most important cause of human rights violation.

In What Sense are Human Rights "violated" by Climate Change?

Before going further, an important question of definition arises: in what sense can we say that specific human rights of the global poor and future generations are violated by the impacts of global warming? The problem here is that it is very hard to assess who is responsible for and who is suffering from the harms resulting from the effects of global warming. Indeed, it is very complex to know (1) who, between individuals, corporations, States and international organizations, is the main responsible for historic and current emissions; and (2) who is a victim of a harmful consequence of climate change rather than of another social or environmental problem. As Dale Jamieson puts it, "climate change is not a matter of a clearly identifiable individual acting intentionally so as to inflict an identifiable harm on another identifiable individual, closely related in time and space."[19]

For this reason, nobody has an *individual* responsibility for climate change-induced human rights: in this case, there is no such thing as an individual action that wrongs persons, a specific, culpable action that hurts people. However, many have a *collective* responsibility for imposing to countless other people the harmful consequences of their actions: even if each isolated agent's actions are not harmful, they are part of a causal chain that predictably causes climate change. Limiting our conception of human rights violations to discrete actions that in isolation inflict a severe harm on a specific victim would be a mistake. Following Elizabeth Ashford, we can say that "if the cumulative result of the behavior of a vast number of agents is the infliction of an extremely severe harm on a vast number of victims, and if the harm is foreseeable an unreasonably imposed, it may constitute a human rights violation even if no agent's action, considered in insolation, inflicts a severe harm on anyone."[20]

A useful distinction here is the one between standard and systematic human rights violations. If standard human rights violations represent discrete harmful actions or omissions perpetrated by specific agents against specific victims that take place over a specific period of time, systematic human rights violations result form the interaction of the activities of a vast number of agents via their membership of global and domestic social institutions. Such harms "can only be seen by looking at the ongoing effects that systematically result from the normal behavior of millions of agents via their participation in social institutions and more."[21] Systematic human rights violations result from the everyday behavior or millions of agents and for this reason these agents can share liability for systematic human rights violations even if they are not blameworthy for specific victims' harms[22].

A Pessimistic (but not Less Realistic) Scenario

So far I have focused on one sort of interest: the fundamental interests of present and future victims of climate change. Following the interest theory of rights, one can say that climate change threatens human rights because it jeopardizes people's interests in subsistence,

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18 UNDP, *Human Development Report 2007/2008*, pp. 18-19.

19 Dale Jamieson, "The Nature of the Problem," *The Oxford Handbook of Climate Change and Society*, edited by John S. Dryzek *et al.*, pp. 38-54, at p. 44.

20 Elizabeth Ashford, "Severe Poverty as a Systematic Human Rights Violation," *Cosmopolitanism Versus Non-Cosmopolitanism: Critiques, Defenses, Reconceptualizations*, edited by Gillian Brock (Oxford: Oxford University Press, 2013), pp. 129-155, at p. 136.

21 *Ibid.*, at p. 140.

22 It could also be shown that the global affluent are responsible for climate change-induced human rights violations because of their causal responsibility for global emissions, their ability to tackle the problem, and the fact that they benefit from historical emissions, but I leave this task aside here. I only wanted to show why it is correct to speak here of climate change-induced violations of human rights.

health and life. Those interests are weighty enough to impose obligations on others, which is the reason why they must be protected by rights. If this gives to policymakers a compelling moral reason to act, their own interests are not directly concerned: if the approach I have developed so far deals with the objective of justice, it is not yet realistic enough. To motivate the global affluent to act, we should ask not only why they have strong moral reasons based on global and intergenerational justice to tackle climate change, but also why it is in their own interest to do so.

We should therefore find factors that motivate people to comply with their moral duties. Especially in the case of intergenerational ethics, the acceptance of moral duties is insufficient to motivate action in conformity with these duties in cases where competing motivations exist. As Birnbacher emphasises, "[m]oral motives are usually too weak to effect appropriate action unless supported by quasi-moral and non-moral motives pointing in the same direction."[23] If moral motives refer to acts performed from consciousness or simply in virtue of the fact that they are duties, quasi-moral motivations are altruistic motives such as love, compassion, solidarity or generosity, and non-moral motives refer to the desire for self-respect, social recognition and personal interest promotion. To make sure that the global affluent are sufficiently motivated to act, we must therefore show if, and in what sense, specific quasi-moral and non-moral motives point in the same direction than moral duties.

One way to achieve this objective is to assess the effects of an abrupt warming. If the 2007 IPCC uses a gradual model of climate change, more and more scientists emphasise the possibility of an abrupt increase in global temperatures due to positive feedbacks in the climate cycle. For instance, the terrestrial and the oceanic systems may be transformed form carbon sinks to sources of greenhouse gases[24]. Catastrophic scenarios are so influent in climate sciences that even the 2012 IPCC Special Report mentions them: "[l]ow-probability, high-impact changes associated with the crossing of poorly understood climate thresholds cannot be excluded, given the transient and complex nature of the climate system. Assigning 'low confidence' for projections of a specific extreme neither implies nor excludes the possibility of changes in this extreme."[25]

If these catastrophic consequences would worsen the human rights violation of poor people and of distant future generations, they would also hit very badly affluent people and their children and grandchildren, wherever they live. Affluent people are directly concerned, because of their direct interests in economic growth, health security and political stability; even their own fundamental interests in subsistence and life may be jeopardized. In that sense, they have non-moral reasons, based on their personal interests, to fight global warming. But they also have quasi-moral reasons to do so, since their descendants may be forced to live in an even more dangerous world: as long as present people care for their children, they have a strong interest to tackle climate change.

Some catastrophic events will happen only in several centuries; but some may already happen before the beginning of the 22nd century. According to Andrew Guzman, "within my lifetime, or, if we are lucky, within the lifetime of my children, there will be acute water shortages affecting hundreds of millions, or perhaps billions, people."[26] Likewise, according

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23 Birnbacher, "What Motivates Us to Care for the (Distant) Future?", at p. 282

24 A good reference on this topic is: David Archer, *The Long Thaw: How Humans are Changing the next 100,000 Years of Earth's Climate* (Princeton: Princeton University Press, 2009).

25 IPCC 2012, "Summary for Policymakers," *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*, edited by C. B. Field *et al.* (Cambridge & New York: Cambridge University Press, 2012), pp. 3-22, at pp. 11-12.

26 Guzman, *Overheated*, p. 131

to James Hansen, "the best estimate I can make of when large sea level change will begin is during the lifetime of my grandchildren – or perhaps your children."[27]

Much more can be said about catastrophic scenarios, but the point is that they represent a powerful driver of political action: they are scientifically based and deal with the non-moral and quasi-moral motivations of affluent citizens throughout the world. They are not less realistic than the gradual model if we keep on increasing global emissions; they are just, as the IPCC puts it, "poorly understood", but it neither means that they are unlikely, nor that they will only happen in the distant future. As Henry Shue emphasises, "[t]hat something is uncertain in the technical sense, that is, has no calculable probability, in no way suggests that its objective probability, if known, would be small. There is a grand illusion here: if we cannot see what the probability is, it must be small. … This inference is totally groundless. If all we know is that the probability cannot be calculated, then we do not know anything about what it is; if we do now know anything about what it is, then we do not know whether it is small or large." [28]. And even if we discover later that the probabilities of a catastrophic climate change are low, then strong action to mitigate climate change remains crucial. As John Broome explains, "what is most likely to happen is not necessarily the most important consideration in making a decision. An unlikely possibility may be more important if its results will be extremely bad."[29]

III: How to Protect Climate Change-Threatened Human Rights?

So far I have asked how we can understand specific climate injustices; now I ask how we can try to prevent most of them by institutional reforms. The question is not anymore: "how to justify the existence of duties towards present and future victims of climate change", but: "how to ensure that these duties will be fulfilled before widespread human rights violations happen?" To make sure that political recommendations are realistic, or that institutional reforms are feasible, the urgent problem is less to deal with the non-identity argument or the notions of "responsibility" and "capacity" to combat climate change, like many philosophical debates on climate change do, than to address the different meanings of the notion of "interest". Here again, the point is to make sure that the problem of motivation, crucial for political action, is not set aside.

The Interests of the Global Affluent to Tackle Climate Change

Climate change is a tragedy of the commons: the atmosphere is a carbon sink everybody can freely use, transmitting the costs of its overuse to others. The specificity of the climate tragedy is that it is global and intergenerational: not only affluent living people have a strong *individual* interest not to mitigate their emissions, since the environmental costs of their behaviour is payed by the global poor; they also have a *collective* interest not to tackle climate change, since its burdens will be also borne by subsequent generations[30]. This commonly used model is correct, but, I think, incomplete. It only deals with one very narrow kind of interest: the perceived interests of the global affluent. Rich consumers and producers indeed have a short-term interest to increase their emissions to minimize their costs or maximize their

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27 James E. Hansen, *Storms of my Grandchildren: The Truth about the Coming Climate Catastrophe and our Last Chance to Save Humanity* (London: Bloomsbury, 2009), p. 256

28 Henry Shue, "Deadly Delays, Saving Opportunities: Creating a More Dangerous World?," *Climate Ethics: Essential Readings*, edited by Stephen M. Gardiner *et al.* (Oxford: Oxford University Press, 2010), pp. 163-177, at p. 148.

29 John Broome, *Climate Matters: Ethics in a Warming World* (New York & London: W. W. Norton & Company, 2012), p.120.

30 Stephen M. Gardiner, *A Perfect Moral Storm: The Ethical Tragedy of Climate Change* (Oxford: Oxford University Press, 2011), pp. 24-38, 108-123.

benefits: burning fossil fuels enables them to use cheap energy, food production and transportation systems, and so on.

But if we add to the picture the middle-term interests of wealthy people and their indirect interests in the well-being of their descendants, we get a more accurate idea of the behaviour it would be rational for them to adopt. If catastrophic impacts of climate change were to happen this century, these interests would be seriously threatened. But to motivate them to act, using pessimistic projections is not necessary: even in conservative scenarios, some of their interests such as their economic security are threatened, with diminished importations, exportations and international financial transactions as the economy of other countries collapse under the severe impacts of climate change. Likewise, their health security can be seriously jeopardized by the creation and the spread of a global epidemic. In a globalized world, no country is protected from the impacts of climate change[31].

With this picture in mind, much can be done to make the global affluent change their habits. Since these habits are mostly shaped by institutions, we ought to begin by reforming them in order to change people's behaviours. As Ashford writes, "[t]he harms are produced by the operations of social institutions, which structure the behavior of millions of agents, and can only be ended by reform of those social institutions"[32].

First, we can implement an educational system based on enlightened self-interest ethics to make people understand that it is in their own interest to tackle climate change. As consumers, they would choose less carbon-intensive products; as citizens, they would choose more environmentally friendly politicians and policies. As Guzman puts it, "I am convinced that the most important barrier to a sensible and determined response to climate change is a lack of public understanding about the ways in which our lives and the lives of children will be affected."[33] Or, as Hansen writes, "[c]itizens with a special interest – in their loved ones – need to become familiar with the science, exercise their democratic rights, and pay attention to politicians' decisions."[34]

This solution bets on the intelligence of citizens, rather than on their virtue or morality. Its advantage is that it is a liberal form of education, not based on perfectionism; its disadvantage is that it is too slow to deal with this urgent problem in time. Before it can have any effect, widespread human rights violation generated by climate change will happen.

To complement this first solution, a second one would be to "nudge" people to mitigate, instead of waiting for them to do so voluntarily. We can use market mechanisms such as carbon taxes and cap-and-trade systems to incentivize people to reduce their emissions, so that their short-term or perceived interests become identical to their middle-term and indirect interests. If people take too much time to understand that they have strong interests and compelling moral duties to mitigate, we can still reform existing institutions so that it becomes in their perceived interest to do so.

This solution is not paternalistic for two reasons. First, it does not force people: it only gives them price-incentives to mitigate. If they decide to keep on increasing their emissions, they are free to do it, but they will pay for their unsustainable behaviours. Second, this policy is not only based on affluent citizens' interests; it is also based on poor and future people's human rights, and therefore represents a realization of the no-harm principle.

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31 Jody Freeman and Andrew Guzman, "Climate change and U.S. Interests," *Environmental Law Reporter* 41:8 (2011), pp. 10695-10711.

32 Ashford, "Severe Poverty as a Systematic Human Rights Violation", at p. 142.

33 Guzman, *Overheated*, p. 2.

34 Hansen, *Storms of my Grandchildren*, p. xi

The Interest of Developed Countries' Representatives to Tackle Climate Change

The problem with these policies is that they are not yet realistic enough: if they can motivate affluent citizens to combat global warming, we still need to know why politicians would decide to implement strong climate policies. In other words: how to motivate the motivators?

One solution here would be to strengthen cooperation between the countries at the international level. We should focus on the next global climate agreement and wonder how previous treaties must be reformed to enhance collaboration. One way to do so would be to make some concessions to US negotiators: we can leave behind the politically controversial[35] notions of climate debt and historical responsibility that will never get the majority at the Senate and show that even if we do so, developed Parties must still bear most of the climate burdens. For instance, Paul Baer has operationalized the polluter pays and the ability to pay principles and shown that, even if we take 1990 as the starting date to measure responsibility and capacity, the US must pay for 29.4% of climatic costs, whereas China must pay only for 5.1%, about six times less[36]. In total, without taking into account historical emissions, developed countries have to pay for more than 70% of climatic costs.

Lots of other ideas have been recently developed, such as adding new Parties to the Annex I countries[37] or changing multilateralism into some form of minilateralism[38]. The point is to try to change the strategy of developed Parties from "you go first" to "we go first and you follow".

In any event, one unavoidable pragmatic constraint is that to be feasible, the next climate agreement will have to maintain a sufficient degree of compatibility with deeply embedded institutions of the climate regime: this is why a global cap-and-trade system is a promising solution. As currently implemented, this market mechanism is often environmentally inefficient, or unfair, or both: this is why we must wonder how best to reform systems such as the European Trading Scheme. We could make rich countries pay for their carbon permits, while poor countries would receive them for free; we could also use some of the money raised by the auctioning of permits to compensate the increase in energy prices for low-income households and finance the research, development and deployment of technologies creating energy by using renewable natural resources. The growing literature on this topic can be used to make the next climate treaty fairer and more efficient[39].

The Interest of the Poor to Participate in Climate Negotiations

If we want the next climate treaty to be fair, we need to take procedural or participative justice into account. Here the solution is to promote fairer political participation at the

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35 Jonathan Pickering and Christian Barry, "On the concept of climate debt: its moral and political value," *Critical Review of International Social and Political Philosophy*, 15:5 (2012), pp. 667-685.

36 Paul Baer, "The greenhouse development right framework for global burden sharing: reflection on principles and prospects," *WIREs Climate Change* 4:1 (2013), pp. 61-71.

37 Jonathan Pickering *et al.*, "« If Equity's In, We're Out »: Scope for Fairness in the Next Global Climate Agreement," *Ethics & International Affairs* 26:4 (2012), pp. 423-443.

38 Robyn Eckersley, "Moving Forward in the Climate Negotiations: Multilateralism or Minilateralism?," *Global Environmental Politics*, 12:2 (2012), pp. 24-42.

39 Simon Caney and Edward Page have made important philosophical contributions to this topic: Simon Caney, "Markets, Morality and Climate Change: What, if Anything, is Wrong with Emissions Trading?," *New Political Economy* 15:2 (2010), pp.197-224; Simon Caney and Cameron Hepburn, "Carbon Trading: Unethical, Unjust and Ineffective?," *Royal Institute of Philosophy Supplement* 69 (October 2011), pp. 201-234; Edward A. Page, "Cosmopolitanism, climate change, and greenhouse emissions trading," *International Theory* 3:1 (2011), pp. 37-69; Edward A. Page, "Cashing in on climate change: political theory and global emissions trading," *Critical Review of International and Political Philosophy* 14:2 (2011), pp. 259-279; Edward A. Page, "The hidden costs of carbon commodification: Emissions trading, political legitimacy and procedural justice," *Democratization* 19:5 (2012), pp. 932-950.

international level. We do not need to open a debate on global democracy; we only need to wonder how to make existing international climate negotiations more democratic. If a global climate change agreement is to be both fair and effective, it must strengthen its democratic commitments and resist to the antidemocratic trends that currently characterize international negotiations. As Paul Hunt and Rajat Khosla put it, "[e]ven though those living in poverty are disproportionately affected by the adverse effects of global warming, they are invariably excluded from relevant policy discussions. … States have a human rights responsibility to take measures that facilitate, in all relevant policy-making, the active and informed participation of those affected by climate change, including those living in poverty."[40]

One way to promote democratic climate negotiations would be to change the current regime from "one dollar, one vote" to "one person, one vote", with the power of decision depending on the percentage of world population represented by delegates. US's percentage of world population is 4.6%; China's is 19.6%. If, as a nation, China is today the main emitter, Americans emit on average four times more than Chinees do. More generally, developing and developed countries are each responsible for about 50% of global emissions; but while the former represent 80% of world population, the latter represent only 20%. Since those who are the least responsible for the problem are the poorest and the most numerous, delegates of developed countries must have a stronger influence in climate negotiations than US's special interests, which represent less than 0.1% of world population. If the EU, the AOSIS (Alliance of Small Island States) and the BASIC (Brazil, South Africa, India and China) had fair opportunities of participation in the designing of climate policies, if the 80% could have more influence than the 0.1% in climate negotiations, they would not any more be blocked by one country, or special interests in some developed countries.

Even if this institutional reform proposal is based on the interests of the poor, it is also compatible with the interests of the global affluent. If this reform would be bad for the superrich who are permanently lobbying US negotiators, it would be good for most of the world's population. As Joseph Stieglitz has shown, fairer international negotiations are not only good for the global poor, but also for most of the global rich[41].

Conclusion

Climate change is not just a problem for the future: it is already affecting humanity and the environment. It is too late to hold back global warming, but the longer we wait to respond to it the more difficult it will be to limit its most adverse impacts, and the more costly it will be to adapt. While the IPCC projected that many of the adverse effects of global warming would occur much later in the century, recent science tells us that they will occur much sooner – and in many cases may be happening already – and will likely be substantially more severe that the IPCC anticipated. If we want to avoid the most dramatic impacts of climate change, then action is needed now[42].

A human rights-based approach could guide this action. Identifying likely transgressions of human rights by the impacts of global warming could refocus attention on the human priorities that ought to drive policy: building human rights assessments into mitigation and adaptation scenarios would refine and improve policies, and provide criteria for their adoption or rejection[43]. Here I have only tried to explain in what sense specific human rights are

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40 Paul Hunt and Rajat Khosla, "Climate change and the right to the highest attainable standard of health," *Human Rights and Climate Change*, edited by Humphreys, pp. 238-256, at p. 251.

41 Joseph E. Stiglitz, *Making Globalization Work* (New York & London: W. W. Norton & Company, 2006).

42 Paul G. Harris, *What's Wrong with Climate Politics and how to Fix It* (Cambridge: Polity Press, 2013), pp. 3-16.

43 Stephen Humphreys, "Conceiving justice: articulating common causes in distinct regimes," *Human Rights and Climate Change*, edited by Humphreys, pp. 299-319, at p. 315.

violated by climate change, and how a few institutional reforms may reduce these climate injustices: but global warming causes many other forms of harms, and to combat it we should implement many other climate policies. I have therefore just begun to answer to two leading questions in climate ethics: “how to justify the existence of duties towards present and future victims of climate change”, and “how to ensure that these duties will be fulfilled before widespread and sever harms happen?”

To ensure that existing and future people won’t live in a dangerous world where systematic violations of human rights by climate change become unavoidable, strong climate policies must be adopted in the coming decades. To do so, developing moral reasons for action is an important task; but we also need to develop quasi-moral and non-moral reasons to guarantee that policymakers of the developed world will be motivated to sign and respect a binding climate treaty. This is why justice and political feasibility are compatible: for the next climate treaty to be adopted by developing Parties, principles of distributive and procedural justice will have to play an important role; but to guarantee that developed Parties will be also be inclined to sign it, an approach of climate justice dealing with the problem of motivation is essential.

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