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From Burden-Sharing Justice to Harm-Avoidance Justice: Reimagining the EU's Approach to Climate Justice

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Abstract: With the climate crisis set to become the defining issue of our generation, it appears vital to reimagine the ethical principles that underpin the EU's climate action policy. The concerted political action necessary to limit the harmful effects of climate change will have high mitigation, adaptation, and compensation costs. The question of how that cost should be distributed is a question of global redistributive justice, which has led to the development of an entire sub-field of moral-political philosophy – climate justice. I will show how an ethical framework of equal relative sacrifice measured in terms of human well-being can become the new foundation for effective climate-change justice that realistically considers the scope and potential existential threat of climate change and expends energy seeking to avoid further harm rather than assigning responsibility. The EU can no longer afford to have a less than 'all hands on deck' approach towards climate change. Ethics should not stand in the way of effective climate action but support it. This begs the inter-related questions: What is the moral and normative motivation for a switch to harm-avoidance justice? Can the Ability to Pay Principle (ATP) or Polluter Pays Principle (PPP) fulfil the imperatives set out by a harm-avoidance justice framework? This paper explores which principles of burden-sharing justice translate into harm-avoidance justice and normatively evaluates the two principles ATP and PPP in view of such a switch.

Keywords: Climate justice, climate change, European Green Deal, Polluter Pays, Ability to Pay

Introduction

With the climate crisis set to become the defining issue of our generation, it appears vital to reimagine the ethical principles that underpin the EU's climate action policy. Climate change can be likened to a modern-day tragedy of the commons, where it is in each country's immediate

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self-interest to act against the long-term common good by releasing high levels of greenhouse gases.[2] Anthropogenic greenhouse gases prove to be a key player in inducing climate change.[3] One of the main reasons for this tragedy of the commons would be the high emission cost of economic growth necessary to create wealth in most modern societies.[4] Just like in Lloyd's pamphlet, actors are collectively depleting a common good (the amount of acceptable emissions) for increased marginal individual benefit rather than stewarding it for a larger total and collective benefit (avoiding further climate-change-related harm).[5] The scope of this tragedy risks affecting the livelihood of more people than Lloyd's cow-herder example could anticipate.[6] As such, the concerted political action necessary to limit the harmful effects of climate change will have high mitigation, adaptation, and compensation costs.[7] The question of how that cost should be distributed is of global redistributive justice, which has led to the development of an entire subfield of moral-political philosophy – climate justice.

Thus far, the European Union has championed a burden-sharing justice approach to climate justice in its international relations.[8] Think notably of the Paris Agreement. Simon Caney explains that for theories of climate change justice to be deemed valid, their implementation needs to enable effective climate action.[9] This 'sustainability condition' signifies that if the environmental cost of implementing a climate change justice theory is too high, it should be discarded.[10] As such, I will show how an ethical framework of equal relative sacrifice measured in terms of human well-being can become the new foundation for effective climate-change justice that realistically considers the scope and potential existential threat of climate change and expends energy seeking to avoid further harm rather than assigning responsibility.

The EU can no longer afford to have a less than 'all hands on deck' approach towards climate change. Ethics should not stand in the way of effective climate action but support it. This begs the inter-related questions: What is the moral and normative motivation for a switch to harm-avoidance justice? Can the Ability to Pay Principle (ATP) or Polluter Pays Principle (PPP) fulfil the imperatives set out by a harm-avoidance justice framework?

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[2] Anil Agarwal and Sunil Narain, *Global Warming in an Unequal World: A Case of Environmental Colonialism* (New Delhi: Centre for Science and Environment, 1991), 13.
[3] Robert Watson et al., "Summary for policymakers", in *Climate change 2001: Synthesis Report: Contribution of Working Groups I, II and III to the third Assessment Report of the Intergovernmental Panel on Climate Change*, ed. Robert Watson and the Core Writing Team (Cambridge: Cambridge University Press, 2001), 5.
[4] He Hu, Xiao-Hong Zhang, and Li-Li Lin, "The Interactions Between China's Economic Growth, Energy Production and Consumption and The Related Air Emissions During 2000–2011", *Ecological Indicators* 46 (2014): 38-51.
[5] William Forster Lloyd, *Two Lectures on the Checks to Population* (Oxford: Oxford University, 1833): 45-48.
[6] Nigel Arnell, "Climate Change and Water Resources: A Global Perspective", in *Avoiding Dangerous Climate Change*, ed. Hans Joachim Schellnhuber, Wolfgang Cramer and Nebojsa Nakicenovic (Cambridge: Cambridge University Press, 2006), 167.
[7] Simon Caney, "Climate Change and the Duties of the Advantaged", *Critical Review of International Social and Political Philosophy* 13, no. 1 (2010): 203-228; Carl Knight, "What is Grandfathering?", *Environmental Politics* 22, no. 3 (2013): 423.
[8] Paris Agreement to the United Nations Framework Convention on Climate Change, 16-1104.
[9] Simon Caney, "Just Emissions", *Philosophy & Public Affairs* 40, no. 4 (2012): 293.
[10] *Ibid.*

This paper explores which principles of burden-sharing justice translate into harm-avoidance justice and normatively evaluates the two principles ATP and PPP in view of such a switch. The fundamental question remains that of identifying who should pay for the costs of climate change.

The political impetus created by the European Green Deal has in many ways been strengthened by the critical juncture engendered by the COVID-19 pandemic. Influential political figures ranging from Emmanuel Macron to Ursula von der Leyen take the COVID-19 pandemic as an opportunity to push further climate action more forcefully. Rather than building back the old, they are building a new and greener world.[11] This has taken shape democratically under the guise of the European Climate Pact, which invites citizens to offer their input on climate issues.[12] The heightened awareness of climate change issues in the general population offers the necessary political opportunity to understand climate change as the existential threat that it truly is.[13] In such a context, new political imaginaries of climate justice can emerge.

1. Climate Justice: Paradigms and Principles

In climate justice, two overarching paradigms of redistributive justice contend for space: burden-sharing justice and harm-avoidance justice.[14] In Caney's words, burden-sharing justice is about:

> *"focusing on how the burden of combating the problem should be shared fairly among the duty-bearers. An agent's responsibility, then, is to do her fair share."*[15]

In political discourse and key policy documents, burden-sharing justice has taken the centre stage. An example of this would be the Paris Agreement, with Nationally Determined Contributions, and its focus on historical responsibility.[16] This explains why Caney associates classical principles of climate justice with burden-sharing justice. Two central principles of climate ethics recur in the literature: ATP, according to which those with the highest capacity to pay should pay a larger share, and PPP, according to which those who caused climate change should pay for its mitigation.[17] Caney views both ATP and PPP as principles of burden-sharing justice.[18] However, according to Caney, there is a second form of climate justice – harm-avoidance justice:

[11] European Commission, "Communication : The European Green Deal", 2019; Environnement Magazine avec AFP, "Relance : Le Gouvernement Annonce des Investissements pour la Transition Écologique", *Environnement Magazine*, 1 July 2020, https://www.environnement-magazine.fr/politiques/article/2020/07/15/129656/relance-gouvernement-annonce-des-investissements-pour-transition-ecologique.
[12] European Commission, "European Climate Pact", 2019.
[13] Eurobarometer, *Special Eurobarometer 490 on Climate Change, 2019*.
[14] Simon Caney, "Two Kinds of Climate Justice: Avoiding Harm and Sharing Burdens", *Journal of Political Philosophy* 22, no. 2 (2014): 125.
[15] *Ibid.*
[16] Paris Agreement, *op. cit.*
[17] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, p. 204.
[18] Caney, "Two Kinds of Climate Justice", *op. cit.*, pp. 125-126.

> *"takes as its starting point the imperative to prevent climate change, and […] works back from this to deduce who should do what. Its focus is primarily on ensuring that the catastrophe is averted (or at least minimised within reason). This perspective is concerned with the potential victims—those whose entitlements are threatened—and it ascribes responsibilities to others to uphold these entitlements."*[19]

While Caney indicates that ATP and PPP are of the remit of burden-sharing justice, we can argue that ATP could also function as a guiding principle of harm-avoidance justice.

There is one primary reason for moving away from burden-sharing justice in favour of harm-avoidance justice. Burden-sharing justice does not guarantee the success of climate action. It has often led the developing world to adopt free-riding behaviours counter-productive to global climate-change mitigation measures, therefore, threatening future generations' entitlements in the name of having a lesser historical responsibility. During the Copenhagen Summit, the failure of the Kyoto Protocol was attributed to the failure to encompass the fastest developing economies.[20] This led to resistance against explicitly enshrining PPP in subsequent agreements by the Obama administration.[21]

Climate change can be and is being constructed as an existential threat.[22] And for a good reason. From the UNFCCC's baseline, we can understand that climate change broadly refers to the negative consequences of anthropogenic greenhouse gas emissions, which (alongside other factors) cause historically unprecedented levels of global warming.[23] The shift in global mean temperatures and consequent Arctic ice cap melting lead to a rise in the global mean sea level. However, although they are the two major aggregate indicators of climate change, the impact of climate change does not limit itself to a change in temperature and sea level.[24] Just a couple of years ago, bushfires half the size of Belgium wreaked havoc on the east coast of Australia.[25] The record for the hottest day is being broken day after day.[26] Across the Pacific, the United States of America has suffered through extreme hurricanes in the past two decades.[27] The increase in extreme

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[19] *Ibid.*
[20] Bo Yan et al. "The EU's Engagement with China in Global Climate Governance", in *Multilateralism in the 21st Century: Europe's Quest for Effectiveness*, ed. Caroline Bouchard, John Peterson and Nathalie Tocci (London: Routledge, 2013).
[21] *Ibid.*
[22] Environnement Magazine avec AFP, "Relance", *op. cit.*
[23] UNFCCC, *Framework Convention on Climate Change*, 1992; Catrinus J Jepma and Mohan Munasinghe, *Climate Change Policy* (Cambridge: Cambridge University Press, 1998): 27; World Meteorological Organisation, "The State and the Variations of Greenhouse Gases in the Atmosphere", 2019.
[24] Jepma and Munasinghe, *op. cit.*, pp. 27-33.
[25] Nick Evershed, Andy Ball and Naaman Zhou, "How Big Are the Fires Burning on the East Coast of Australia? Interactive Map", *The Guardian*, 24 January 2020, https://www.theguardian.com/australia-news/datablog/ng-interactive/2019/dec/07/how-big-are-the-fires-burning-on-the-east-coast-of-australia-interactive-map.
[26] Graham Readfearn, "Australia Records its Hottest Day Ever – One Day After Previous Record", *The Guardian*, 19 December 2019, https://www.theguardian.com/australia-news/2019/dec/19/419c-australia-records-hottest-ever-day-one-day-after-previous-record.
[27] Robert Muir-Wood, *The Cure for Catastrophe: How We Can Stop Manufacturing Natural Disasters* (London: One World Publications, 2016): 235-237.

weather conditions and its implications are largely imputable to anthropogenic climate change.[28] These examples powerfully illustrate the repercussions of climate change. However, its systemic consequences are sometimes more insidious.[29] The eco-systems and natural habitats that humankind rely on (for the production and consumption of vital goods and services) risk gradual damage and destruction that would only become noticeable once tipping points have been reached (by that stage, the damage is irreversible).[30] Climate change poses the risk of compromising humanity's fresh-water resources and jeopardising food safety.[31] This could lead to the collapse of human civilisation as we know it and possible mass extinction.[32] So far, according to Dr Duffy, senior climate advisor to the U.S. government during the Obama administration, the world emission rates are almost exactly following those present in the simulation model RCP 8.5 designed as a worst-case scenario.[33]

If the expected catastrophic harms of climate change come to pass, considerations of justice will become secondary. Distribution of costs only matters if there is a future in which to distribute those costs. A precedent for prioritising survival over ethics can be found across realist and neorealist theories of IR.[34] Yet, here thanks to harm-avoidance justice, we can reconcile the imperative for survival with a form of justice. Any theoretical framework of climate justice that guides political action and fails to be outcome-oriented could lead to catastrophic harm. Harm-avoidance justice is outcome-oriented and should be the privileged avenue for critical reflection in climate ethics. A simple example can serve as a premise for our subsequent discussion. If the hull of a ship gets pierced, figuring out who pierced the ship and making them responsible for fixing it matters less than making sure the ship does not sink. Therefore, because of the high existential stakes involved in responding to climate change, the normative principles that underpin policy responses must be up to par.[35] This justifies reimagining climate justice according to harm-avoidance justice. This does not mean shutting and ignoring the moral validity of frameworks of burden-sharing justice. It means relegating burden-sharing justice to a secondary position and only accepting its principles insofar as they enable us to avoid catastrophic harm in line with harm-avoidance justice.

This explains why we should only keep those principles of burden-sharing justice that can translate into harm-avoidance justice. ATP doubles as a harm-avoidance justice principle, while PPP does not. In this framework, ATP can provide a sound moral and instrumental argument if it strives towards equal relative sacrifice. On the other hand, PPP appears relegated to a secondary

[28] *Ibid.*
[29] *Ibid.*
[30] Jepma and Munasinghe, *op. cit.*, p. 61; Muir-Wood, *op. cit.*, p. 240.
[31] Arnell, *op. cit.*, pp. 167-175; Jepma and Munasinghe, *op. cit.*, pp. 45-46.
[32] Caney, "Just Emissions", *op. cit.*, p. 255.
[33] Bob Berwyn, "The Worst-Case Scenario for Global Warming Tracks Closely with Actual Emissions", *Inside Climate News*, 3 August 2020, https://insideclimatenews.org/news/03082020/climate-change-scenarios-emissions/.
[34] Louiza Odysseos, "Dangerous Ontologies: The Ethos of Survival and Ethical Theorizing in International Relations", *Review of International Studies* 28, no. 2 (2002): 403-405.
[35] William J. Ripple et al., "World Scientists' Warning to Humanity: A Second Notice", *Bioscience* 67, no. 12 (2017): 1026–1028.

moral principle that stands the test of reason only if its result overlaps with that of ATP. It fails to meet the instrumental test of the 'human extinction' hypotheses, the key in making it a harm-avoidance justice principle.

2. Ability to Pay and Equal Relative Sacrifice

I will normatively evaluate ATP and devise a formulation in line with the dual constraint of harm-avoidance justice and global poverty. It can be argued that poor countries should bear a lesser share of climate change only in absolute terms and only insofar as the ATP strives towards the outcome of 'equal sacrifice' in relative terms. If we are speaking in absolute terms, it seems unreasonable to ask poor countries to bear an equal share of the costs of climate change. As Caney states, "eradicating great poverty is an ethical concern of paramount importance".[36] Burdening a country like Mozambique (415USD GDP per capita) with an equal absolute cost (whatever the amount) as France (38,476USD GDP per capita) would have the immoral effect, hindering its attempts to eradicate poverty.[37] Further, if this negative impact on poverty were to be minimised or cancelled, the effective funds levied to combat climate change would end up being nil or very low. This can be broadly understood as levelling down the problem, usually associated with egalitarianism.[38] In absolute terms, then, of course, poor countries should bear a lesser share of the costs of climate change. The main reason is the value attached to human rights.[39] For many decision-makers, fighting climate change has the objective of protecting populations and minimising harm, if the policies used to fight it become an attempt on the integrity of people's human rights to food, shelter, water and an overall minimal standard of living, it becomes immoral and counterproductive to pursue them.[40] This would be the sufficientarian argument, which stresses "the maintenance of an absolute minimal standard below which justice has not been met".[41] A more demanding version of the same argument can be put forward by referring to prioritarian values, which seek to maximise the overall well-being (with extra-weight attributed to the well-being of less well-off individuals) rather than accept a bare minimum.[42] Therefore, because of the immorality of increasing poverty (that leads to unacceptably low levels of well-being), ATP must justify that poor countries bear a lesser burden in absolute terms.[43]

[36] Simon Caney, "Justice and the Distribution of Greenhouse Gas Emissions", *Journal of Global Ethics* 5, no. 2 (2009): 128.
[37] World Bank Group, "GDP per capita", 2019.
[38] Derek Parfit, "Equality or priority?" in *The Ideal of Equality*, ed. Matthew Clayton and Andrew Williams (London: Palgrave, 2000), 102.
[39] Simon Caney, "Human Rights Responsibilities, and Climate Change", in *Global Basic Rights*, ed. Charles R. Beitz and Robert E. Goodin (Oxford: Oxford University Press, 2009), 227-228.
[40] Simon Caney, "Climate Change, Human Rights and Moral Thresholds", in *Climate Change and Human Rights*, ed. Stephen Humphreys (Cambridge: Cambridge University Press, 2009), 11-13.
[41] Megan Kime, "Theories of Global Justice: Relational and Non-Relational Approaches" (PhD Dissertation, University of Sheffield, 2009), 17.
[42] Edward A. Page, "Distributing the Burdens of Climate Change", *Environmental Politics* 17, no. 4 (2008): 565.
[43] Henry Shue, "Global Environment and International Inequality", *International Affairs* 75, no. 3 (1999): 543.

However, this claim can be further qualified in relative terms. It could still hold that poor countries should bear an equal burden in relative terms. Based on the inherent justice of equality, some suggest that the cost should be proportionally equal (for example, 10% of GDP for every country).[44] Shue demonstrates that, while at first, flat rates seem fair, "they do so largely because they look at only the first part of the story and ignore how things turn out in the end."[45] A cost equal to a tenth of income might not threaten well-being in wealthy countries but will certainly plunge some median economies into poverty and ravage poor economies, causing misery and death. The ultimate costs associated with the 10% of GDP will be far higher in a poor country than in a wealthy one.[46] This also applies as a general rule for any flat rate.[47] However, this is not to say that poor countries should bear a lesser burden in relative terms, only that proportionality is the wrong measure of this burden, as its outcome does not pass the 'poverty' argument. For equality to be appealing, it must be an equality of outcome in the subjective cost of respective efforts. Few would condone placing an equal burden on two individuals with differing strengths.

The ability to pay can still be an argument for equally shared costs (in relative terms) if understood in the light of David Miller's 'equality of sacrifice' principle.[48] Moreover, by understanding the 'ability to pay' argument in this way, the most prominent moral criticism that it faces dissolves. One can no longer claim the ATP is morally unfair because it promotes unequal treatment. Unlike Miller, I am not suggesting that equal sacrifice means an equal reduction in per capita emissions.[49] In fine, the measure of policy effectiveness should be human well-being. The set amount of per capita emissions can entail very different levels of well-being depending on the carbon efficiency of a country's energy system. By stretching Miller's concept beyond what he means, we end up with the fairest version of ability to pay – each country bears equal costs, in the sense that populations should sacrifice as much of living standards as they can afford to combat climate change. An endemically poor country would not be asked to bear any cost since its population has not reached a minimum living standard from which it could sacrifice.[50] However, beyond that, each country, poor or rich, would sacrifice the same.

Of course, policy instruments would need to be devised to calculate how climate-change-related sacrifice or cost could be made to have differentially similar impacts on poor, median and wealthy countries' respective populations. Progressive rates operate along with the same rationale and appear to be a promising way to achieve equal sacrifice. In the words of Henry Shue, "the great strength of progressive rates, by contrast, is that they tend to accommodate final outcomes".[51] There is no reason why this final outcome should not be equality of sacrifice. In absolute terms, this would distribute the share of the costs more heavily on wealthy countries and

[44] *Ibid.*, p. 537.
[45] *Ibid.*
[46] *Ibid.*, p. 538.
[47] *Ibid.*
[48] Miller, David, *Global Justice and Climate Change: How Should Responsibilities Be Distributed? The Tanner Lectures on Human Values* (Beijing: Tsinghua University, 2008), 125.
[49] *Ibid.*
[50] *Ibid.*
[51] Shue, "Global Environment and International Inequality," *op. cit.*, p. 528.

yet, in relative terms, would uphold the value of equality. Equality of sacrifice should be measured in terms of well-being in a prioritarian fashion rather than according to purely economic measures while also bearing a bare minimum threshold in mind.[52] This way, poor countries could be required to shoulder a share of the costs when it does not directly conflict with the eradication of human misery (taken as what is below the bare minimum).[53] For instance, Mauritius can be considered a poor nation (it is below the median GDP per capita), and yet ranks high on the HDI.[54] It can, therefore, be envisioned that bearing an equal share of climate-change-related costs (related to the principle of equal sacrifice, hence relative), depending on internal distributive policies, will not necessarily decrease the well-being of its population to an unjustifiable extent. Decreased well-being is expected in all countries considering the high costs of mitigation, adaptation and compensation and the radical economic U-turn entailed by climate change. At the moment, the logic of infinite growth inherent to modern capitalism drives a consistent increase in global emissions, and the world is now at 163.5% of 1990 rates.[55] However, as stated by Sinnott-Armstrong and Howarth, stabilising atmospheric concentrations of carbon dioxide to acceptable levels would require permanent emission reductions of roughly 60-80%.[56] This is not a reduction in the average increase of emissions (which enables continued economic growth), but a reduction of total emissions. Therefore, it is not 'the nations with the most resources' that should bear a higher cost but 'the nations with excess capacity' that can afford to do so without impacting levels of well-being to an unjustifiable extent.[57]

A further ethical counter needs to be addressed. One might ask why equality is a morally desirable outcome in the first place. The most important criticism on this front would be that it appears unfair to make someone pay for a problem they did not cause.[58] For instance, it is possible to imagine a wealthy country with low emissions, especially once the transition to renewable energies has been achieved successfully. However, even without such an empirical case, it appears unfair to tax Norway, which ranks 5th in terms of the ratio of GDP to carbon dioxide emissions, on the same terms as the United States, which ranks 80th on the same scale.[59] Surely, we should put some stock in a country's responsibility and differentiated contribution to the problem of climate change. However, as the next section will outline, this is not as evident as it might first appear. Simon Caney proposes the following example "if someone sitting next to you at a table suddenly becomes seriously ill and you're well placed to help, then we tend to think that you should do so."[60] Moreover, referring back to the tragedy of the commons, it can be argued that equal entitlement to a resource (the planet) or collective ownership (implicit in

[52] Page, *op. cit.*, p. 565.
[53] Henry Shue, "Subsistence Emissions and Luxury Emissions", *Law & Policy* 15, no. 1 (1993): 45.
[54] World Bank Group, "GDP per capita", 2019.
[55] Myron J. Gordon and Jeffrey S. Rosenthal, "Capitalism's Growth Imperative", *Cambridge Journal of Economics* 27, no. 1 (2003): 25-48; Jonathan T. Park, "Climate Change and Capitalism", *Consilience*, no. 14 (2015): 189-206.
[56] Walter Sinnott-Armstrong and Richard B. Howarth, *Perspectives on Climate Change: Science, Economics, Politics, Ethics (Advances in the Economics of Environmental Resource, V. 5)*, (JAI Press: Elsevier Science, 2005), xi.
[57] Page, *op. cit.*, p. 561.
[58] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, pp. 216-217.
[59] International Energy Agency, "CO2 Emissions from Fuel Combustion – Highlights", 2009.
[60] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, pp. 216-217.

cosmopolitan frameworks) comes with an equal responsibility to look after it.[61] Additionally, we might consider that many countries will feel the effects of climate change and, therefore, have a vested interest in mitigating climate change regardless of historical responsibility. This radical climate action is more pressing for the dire empirical circumstances, as described below.

3. ATP and the Sustainability Condition

An instrumental justification of why countries should bear an equal share of the costs of climate change (in relative terms according to the principle of equal sacrifice) will further this ethical point. Simon Caney explains that the normative starting point of any climate change justice theory requires that it "does not have environmental impacts that undercut its ability to realize its own principles".[62] In general terms, this 'sustainability condition' means that if a theory of distributive justice concerning climate change appears fair, but its application fails to prevent an avoidable level of harmful climate change, it can no longer be held valid.[63] I will show how ATP fulfils the sustainability condition, whereas PPP, discussed later, fails to do so. This will involve a discussion of empirical facts. To ensure that a principle of justice holds in the face of a climactic emergency it might be useful to consider worst-case scenarios. A principle of justice that still holds and remains faithful to the desired outcome in the worst empirical circumstances will also remain true in better cases, although the opposite is uncertain.

While most political philosophers seem to agree on the reality of the dangers associated with climate change, few seem to stress that it has the potential of marking the end of human civilisation if concerted, radical political action is not taken immediately.[64] So far, in the history of the earth, 90% of all species have gone extinct; humanity might not be the exception.[65] According to Daniel H. Rothman, human activity will have reached a critical threshold where "all scenarios for cumulative uptake at the century's end either exceed or are commensurate with the threshold for catastrophic change."[66] The currently underway sixth extinction (also known as the Anthropocene extinction) might very well annihilate humanity.[67] The work of McKibben and Wilcox further corroborate the likelihood of climate-related omnicide.[68] Even if this hypothesis were to be discarded as empirically invalid scaremongering, acting upon its assumption would avoid the lesser, known, disasters associated with climate change in the scientific consensus. Further, it is acting upon the assumption of the validity of the hypothesis of catastrophe that would prevent that very catastrophe and avoid human extinction. The stakes seem high enough to justify the

[61] Agarwal and Narain, *op. cit.*, p. 13.
[62] Caney, "Just Emissions*", op. cit.*, p. 293.
[63] *Ibid.*
[64] *Ibid.*, p. 255.
[65] Daniel Rothman, "Thresholds of Catastrophe in the Earth System", *Science Advances* 3, no. 9 (2017): 1.
[66] Rothman, *op. cit.*
[67] Ripple et al, *op. cit.*
[68] Bill McKibben, *Falter: Has the Human Game Begun to Play Itself Out?* (New York: Henry Holt and Co, 2019), 55; Richard Brian Wilcox, "The Ecology of Hope: Environmental Grassroots Activism in Japan" (PhD Dissertation, Union Institute & University, College of Graduate Studies, 2004), 55.

adoption of such an idea. This is the stance Stanford Professor J. P. Dupuy advocates in his book *For an Enlightened Doomsaying*. He explains that it might be the only way to break the current complacency of public opinion and through democratic processes transform fear into action.[69]

Using ATP would not only be fair but also the most efficient way of distributing the costs of climate change in a way that avoids harm. It does not only sidestep the impracticalities of finding causal historical liability (which PPP does) but allows for the best possible action, as it does not exempt poor countries from participating in the effort if they can do so.[70] A country, and its population, will care little for a medium- or long-term existential threat if it cannot ensure short-term survival.[71] In an existential threat crisis, it appears rational that what is most efficient should have priority over what is distributionally fair. Therefore, in response to people who hold that ATP is unfair because a country should not clean up another country's mess, it can be further argued that increasing the likelihood of survival trumps the imperative of burden-sharing justice.[72] David Miller also accepts that "an exception [to justice] might occur if it became clear that the world was rapidly approaching a crucial tipping point such that unless further cuts in gas emissions were made quickly, an environmental disaster would follow."[73] As I have argued previously, we cannot afford to act as though that point has not yet been reached.

4. PPP and the Sustainability Condition

As briefly suggested above, it might be tempting to advance the 'contribution to problem' principle (treated analogously to PPP in this paper) as a reason why poor countries should bear a lesser share of the costs of climate change (or as an objection to the equal outcome rationale of ATP).[74] Indeed, wealthy (viz. developed) countries caused approximately "75% of total anthropogenic CO2 emissions from 1750 to 2005" and should be held accountable for the costs of fixing or preventing the harm they are or will perpetrate indirectly on present and future generations.[75] Edward Page uses this argument to justify that developed countries should bear the brunt of climate-change-related costs.[76] Moreover, Henry Shue emphatically advances that "all over the world parents teach their children to clean up their own mess", outlining the intuitive appeal of PPP to common sense.[77] However, it fails to withstand moral and practical scrutiny. PPP loses its intuitive appeal as soon as it no longer supports the claim that poor countries should bear a lesser share of the costs of climate change. The most characteristic example is Ukraine. Ukraine is part of the top 10 nations historically responsible for climate change per its cumulative emissions between 1850 and 2007, despite being ranked 84th in terms of wealth. It

[69] Jean-Pierre Dupuy, Pour un Catastrophisme Éclairé ; Quand L'impossible est Certain (Paris: Seuil, 2002), 3-5.
[70] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, p. 206.
[71] Shue, "Global Environment and international Inequality", *op. cit.*, p. 543.
[72] *Ibid.*, p. 545.
[73] Miller, *op. cit.*, p. 153.
[74] Page, *op. cit.*, p. 556-557.
[75] *Ibid.*, p. 558.
[76] *Ibid.*
[77] Shue, "Global Environment and International Inequality", *op. cit.*, p. 533.

might be countered that Ukraine, as a sovereign and independent political entity did not exist throughout that historical period, however, if anything, this only strengthens the point being made: if it appears unfair to calculate cumulative emissions by linking them to geographical territory, how does PPP stand a chance of being efficiently and convincingly applied? PPP has merits when it comes to preventing pollution and seeking compensation from registered companies who have a traceable history of polluting for profit but its application to the 'imagined communities' of nation-states appears less plausible.[78] It risks holding future generations accountable for the sins of their forefathers, so to speaks.

It is also possible to imagine a country's economy faltering to the point of falling below the poverty line despite being a historically important emitter.[79] It would be counter-productive, even downright immoral, to further burden such a country with the costs of climate change in terms of the fallout counted in well-being. If PPP only holds moral sway if it corroborates the idea that poor countries should bear a lesser share of the burden, then it stands as an excessively weak ethical argument that should be discarded entirely to successfully avoid harm. David Miller highlights that "we should be looking for principles of fairness that are independently valid, not just ones that give us the answers we were hoping to get in the first place", suggesting that the moral appeal of PPP might solely reside in the fact that it might overlap with a country's ability to pay.[80] This overlap, as shown by the example of Ukraine, is far from perfect. By *reductio ad absurdum* (the use of the case of an imaginary country that is poor yet a high emitter), it can be devised that PPP is invalid as a moral argument since it only appears moral insofar as its consequence overlaps with the moral argument of ATP. The idea that a country did not contribute as much to climate change appears normatively irrelevant to justify poor countries pay less. The truly moral argument remains a country's ability to pay. Here the Beneficiary Pays Principle (BPP) can briefly be cited as a principle that uses historical responsibility in a forward-looking way. Those that have benefitted from emissions could be made responsible for paying the costs of climate mitigation. Yet, this is appealing largely because it also overlaps with ATP with the added sense of retribution present in PPP.

Even if PPP were accepted as morally relevant, it can be argued that avoiding the likelihood of a worst-case scenario outlined in the previous section calls for a forward-looking principle rather than a backwards-looking one.[81] PPP remains stuck in the burden-sharing paradigm, whereas ATP, as we formulated it, emancipates itself and also serves the goal of harm-avoidance with its focus on human well-being. 73% of global emission growth can be assigned to developing and least-developed economies in 2004.[82] In 2008, China was responsible for two-thirds of the

[78] Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1991, Revised and extended ed.), 7.
[79] Duncan Clark, "Which Nations Are Most Responsible for Climate Change?", *The Guardian*, 21 April 2011, https://www.theguardian.com/environment/2011/apr/21/countries-responsible-climate-change; Anthony Shorrocks, James Davies and Rodrigo Lluberas, *Global Wealth Report 2021,* 102.
[80] Miller, *op. cit.*, p. 124.
[81] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, pp. 214-216.
[82] Michael R. Raupach et al., "Global and Regional Drivers of Accelerating CO2 Emissions", *Proceedings of the National Academy of Sciences* 104, no. 24 (2007): 10288.

increase in global emissions, although its "cumulative and current per capita emissions [were] still a fraction of the cumulative and per capita emissions of North Americans and Europeans."[83] In the light of this, putting aside ATP, PPP would require that the historically responsible nations would pay costs that also need to compensate for the projected emissions of developing countries that cannot yet be held liable for their future climate impact. Considering the developing world's emissions will rise exponentially and surpass those of the current developed world for obvious demographic reasons, this might not be a realistic demand.[84] This could cause developed countries to sacrifice levels of well-being to an unjustifiable extent while the poor countries that have the capacity for change remain exempt from significant participation in fighting climate change because of cumulatively low emissions. Poor countries will continue increasing emissions on the basis that they are not yet responsible for a large share of net emissions and are entitled to the same levels of development as wealthy nations. PPP fails to meet the 'sustainability condition', as it would allow run-away climate change from emerging economies, even where this does not necessarily promote human well-being. GDP has long been targeted as disconnected from human well-being, hence the advent of the Human Development Index. Of course, this is not a wholesale rejection of PPP. PPP plays a key role in domestic landscapes when it comes to bringing polluting companies and individuals to heel or amend their long-term behaviour. However, when it comes to international justice, PPP appears misguided. This is even more relevant when considering that not all the citizens of nation-state imagined communities feel a sense of filial obligation for the highly polluting companies held by their predecessors and responsible for their respective country's high cumulative emissions. In brief, PPP cannot double as a harm-avoidance justice principle.

Conclusion

In brief, the formulation of ATP given in this paper can double as a harm-avoidance justice principle while still respecting the morality of burden-sharing justice. ATP gives a sound moral basis by refusing trade-offs between climate harm and other harm. If implemented it would not worsen the well-being of badly-off populations in favour of climate action but construct climate action as motivated by protecting the population's well-being. PPP, on the other hand, could overburden certain countries and yet, fail to result in effective climate action. A good illustration of this is that of a sinking ship. Imagine a vessel with a crew of twenty and twenty buckets. If a sailor pierces the hull of the ship, and the ship is filling with water at a pace faster than one man can scoop out, it would seem irrational to argue that the sailor who pierced it should fix it alone. If we do, we can be sure the ship will sink. Intuitively, everyone should do as much as they physically can, with the caveat of maintaining a minimal level of well-being. If someone on the boat has two broken arms or lacks a bucket, no one would blame them for failing to help.

[83] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, p. 126.
[84] *Ibid.*

This paper has argued along prioritarian and sufficientarian lines that poor countries should bear a lesser share of the costs of climate change in absolute terms. However, it is possible to also accept an ability to pay argument along egalitarian lines, meaning that poor countries should equally sacrifice in terms of the relative cuts to well-being entailed by the lifestyle changes required by climate policies. ATP proves to be an argument that withstands ethical scrutiny and simultaneously rises to the challenge of a likely worst-case scenario. Many questions such as how far hybrid models, a beneficiary pays, or grandfathering approach could be considered acceptable and desirable for harm-avoidance justice remain unanswered.[85] Significant research would also be needed to improve well-being measures and quantify equal relative sacrifice across complex domestic socio-economic locales. This falls outside the scope of this paper, which considered paradigms of climate justice and its principles on an international scale. PPP has been criticised in terms of international climate justice. However, it remains of seminal importance in domestic political landscapes, where companies and individuals need to be held accountable for their actions. Finally, the European Green Deal's political driving force, made all the more salient by the critical juncture created by the COVID-19 pandemic, has created the space for more radical climate action to take place. This paper has demonstrated the need for these imaginaries to construct climate change as an existential threat and reverse-engineer principles of climate justice to ensure they meet the sustainability condition.

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[85] Caney, "Climate Change and the Duties of the Advantaged", *op. cit.*, p. 219; Shue, "Global Environment and International Inequality", *op. cit.*, pp. 536-537; Page, *op. cit.*, p. 562; Knight, *op. cit.*, p. 410.

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