

# Ethics of the Environment

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**ABSTRACT:** Globalization leveraged pressure on contemporary society. Today's most pressing social dilemmas regarding climate change demand for inclusive solutions that marry the idea of sustainable growth with environmental economics. Understanding the bounds of environmental limits to avoid ethical downfalls beyond the control of singular nation states infringing on intergenerational equity – the fairness to provide an at least as favorable standard of living to future generations as enjoyed today – has become a blatant demand. In a history of turning to natural law as a human-imbued moral compass for solving societal downfalls on a global scale in times of crises; the paper covers the ethical justification for environmental economics. Climate change demands for intergenerational equity in the 21<sup>st</sup> century and climate justice attention around the globe, while the gains and losses of a warming globe are distributed unequally. Only ethical foundations and imperatives will help to provide the groundwork on climate justice within a society, around the world and over time. Ethics of the environment derived from a human natural drive towards intergenerational fairness back climate justice based governance and private sector solutions.

**KEYWORDS:** Climate Bonds, Climate Change, Climate Justice, Climatorial Imperative, Economics of the Environment, Ethics, Environmental Justice, Environmental Governance, Heidegger, Kant, Public Policy, Rawls, Sustainability, Teaching

## Introduction

The idea of intergenerational equity is as old as humankind. Intergenerational equity arises from the elderly wanting their offspring to prosper in at least as favorable conditions as experienced. Naturally, parents do not want their child to grow up worse than they did themselves and the elderly morally feel for future childrens' well-being. All major religions promote intergenerational equity. The natural behavioral law of intergenerational equity was lived for centuries and transpired in the social compound as practiced in ancient, traditional customs ever since. Intergenerational equality is grounded on a human-imbued wish for fairness, as there is an ethical preference for fair welfare distribution among different generations.

Acknowledging intergenerational equity as a natural behavioral law may serve as a legal basis for the codification of human rights of intergenerational equity. A pro-active overcompliance with contemporary sustainability legislation may stem from a broader social contract within society to incorporate novel responsibilities and embrace discretionary activities that contribute to societal welfare and the well-being of future generations. Globalization increasing internationalization of public and private concerns creates a need for an international outlook of intergenerational equity in order to solve global common goods predicaments and draw inferences on the harmonization of intergenerational justice on a global scale in the age of climate change in the 21<sup>st</sup> century.

A warming earth under climate change is putting pressure on future generations. Climate justice accounts for the most challenging global governance goal. In the current climate change mitigation and adaptation efforts, high- and low-income households but also developed and underdeveloped countries as well as various overlapping generations are affected differently. International climate change mitigation and adaptation regimes and differences in the climate change gains and losses distribution around the globe.

Behavioral aspects of intergenerational conscientiousness and environmental ethics are comprised of ethical foundations that nudge people into social responsibility and future-oriented decision. Ethical roots in climate justice are based on underlying a natural behavioral law of intergenerational fairness. Rational choice theory may be grounded on assumptions that are limited to explain choices in extremes and under constraints of novel human experiences and changed environmental conditions (Chichilnisky-Heal 2014).

Ethical imperatives to protect disadvantaged current world inhabitants and future generations from climate injustice are derivable from Immanuel Kant's categorical imperative, John Rawls' veil of ignorance and Martin Heidegger's future-oriented decision making. Based on insights on the current endeavor to finance climate change mitigation and adaptation around the globe, a 3-dimensional climate justice approach can be grounded in ethical imperatives to share the burden of climate change fair within society. Deriving respective policy recommendations for the wider climate change community is aimed at ensuring to share the burden but also the benefits of climate change within society, between countries and over time in an equitable and fair way.

In a macro-economic model integrating world temperatures and Gross Domestic Product (GDP) temperature peak conditions, Puauschunder (2020) showed that economic gains and losses of a warming globe are captured to be distributed unequal around the world. Mapping Climate Justice proposes a 3-dimensional climate justice approach to share economics benefits and the burden of climate change right, just and fair within a society (1), around the globe (2) and over time (3). (1) Climate justice within a country pays tribute to the fact that low- and high-income households carry the same burden proportional to their dispensable income (Puauschunder 2017c). (2) Based on Immanuel Kant's (1783/1993) categorical imperative and John Rawl's (1971) veil of ignorance, the ethical climatorial imperative demands for an equalization of the gains of climate change around the globe for all actors involved in order to offset for losses incurred due to climate change (Puauschunder 2017b, c). Fair climate change change burden sharing between countries ensures those countries benefiting more from climate change also bear a higher responsibility regarding climate change mitigation and adaptation efforts. (3) Climate justice over time is proposed in an innovative bonds climate change burden sharing strategy (Orlov, Rovenskaya, Puauschunder & Semmler 2018; Puauschunder 2016a).

Future wealth of nations depends on climate flexibility in terms of the range of temperature variation of a country. In a changing climate, temperature range spread is portrayed as a future asset for production flexibility and international trade of commodities implying comparative advantages of countries. Climate-related degrees of freedom imply an unprecedentedly described future climate wealth of nations in a globally warming world. Theoretical macro-economic modelling re-integrated temperature (T) into growth theory to be backtested on commodity prices. Public policy implementation strategies for environmental justice now and for future generations were given in Puauschunder (2020).

### **Climate models underline the unequal climate change impact**

**Mapping Climate Justice** proposes a 3-dimensional environmental justice approach to share economic benefits and the burden of climate change right, just and fair around the globe. Scientific data is backed by ethical imperatives. Gross Domestic Product (GDP) gains and losses of a warming globe are captured to be distributed unequal around the world. The ethical climatorial imperative demands for an equalization of the gains of climate change around the globe in order to offset losses incurred due to climate change (Kant 1783/1993; Puauschunder 2017b, c; Rawls 1971).

First, climate justice within a country should pay tribute to the fact that low- and high-income households carry the same burden proportional to their disposable income, for instance, enabled through a progressive carbon taxation, consumption tax to curb harmful

behavior and/or corporate inheritance tax to reap benefits of past wealth accumulation that may have caused climate change (Puaschunder 2017c).

Secondly, fair climate change burden sharing between countries ensures those countries benefiting more from a warmer environment also bear a higher responsibility regarding climate change mitigation and adaptation efforts (Puaschunder 2019a, b).

Thirdly, climate justice over time is proposed in an innovative climate change burden sharing bonds strategy, which distributes the benefits and burdens of a warming earth Pareto-optimal among generations (Puaschunder 2016a).

All these recommendations are aimed at sharing the burden but also the benefits of climate change within society in an economically efficient, legally equitable and practically feasible way now and also between generations.

**Future Climate Wealth of Nations** is derived from climate flexibility defined as the range of temperature variation of a country. In a changing climate, temperature range flexibility is portrayed as a future asset for production flexibility and international trade of commodities leading to comparative advantages of countries.

A broad spectrum of climate zones has never been defined as asset and comparative edge in free trade. But future climate change will require territories being more flexible in terms of changing economic production possibilities on a warming globe. The more climate variation a nation state possesses, this novel project argues, the more degrees of freedom a country has in terms of GDP production capabilities in a changing climate.

*Modeling and empirical validation:* These preliminary insights aid in answering what commodity prices, financial flows and trade patterns we can expect given predictions the earth will become hotter. Climate variation based on cyclical changes or climate zones will become subject to scrutiny for associations with climate-based advantages and risks. Economic modeling, cross-sectional world country comparisons, time series and panel regressions will scrutinize temperature data in relation to production in order to derive inferences for future Climate Wealth of Nations.

Already now, the degree of climate flexibility is found to be related to human migration inflows. The previously defined climate change winner and loser index is blended with the novel insights on climate flexibility, leading to an unprecedented outlook on future Climate Wealth of Nations in a climate changing world (Puaschunder 2020).

### **Ethical imperatives backing the case for climate justice**

Based on the optimal temperatures for the agriculture, industry and service sectors productivity as well as climate projections of the year 2100 under the business as usual path per country, climate winners and losers around the world from now on until the year 2100 were revealed (Puaschunder 2020). Overall and simply seen from a narrow-minded GDP perspective, the world will macroeconomically benefit more from climate change until 2100 than lose. Winning and losing from a warming earth is significantly positively correlated with the Paris COP 21 emissions country percentage of Greenhouse Gas (GHG) for ratification.

As with all international obstacles weak incentives for compliance and non-ratification or adherence to universal international legally binding instruments, hinders a concerted action plan and follow-through (Chichilnisky-Heal 2014). In order to overcome generality and ineffectiveness, ethical imperatives and humane natural behavioral laws may aid in the establishment of global guidelines that can lead actors involved in a global-scale transition including member states representatives, observer states and market actors such as suppliers, transit states, and consumers of energy who must prioritize energy security (Chichilnisky-Heal 2014).

*Immanuel Kant:* Ethical justifications for attention to climate change aversion in light of the prospective economic gains are grounded in Immanuel Kant's (1783/1993) categorical imperative. The philosophical justification is grounded in the climatorial imperative – advocating for the need for fairness in the distribution of the global earth benefits among nations based on Kant's imperative (1788/2003) to only engage in actions one wants to experience being done to oneself. Passive neglect of action on climate mitigation is an active injustice to others (Chichilnisky 1996, Chichilnisky, Heal & Vercelli 1998; Puaschunder 2017b).

The climatorial imperative – advocating for the need for fairness in the distribution of the global earth benefits among nations based on Kant's imperative to only engage in actions one wants to experience themselves being done to oneself. While the method to measure the gains from climate change can certainly be refined in future studies, the following research is meant as very first preliminary step to open a gate to find climate mitigation incentives from a welfare redistribution perspective. Countries passive or agnostic about global warming mitigation that reap benefits from a warming earth should be obliged to finance international aid for those that are impacted negatively by climate change, e.g., climate refugees. In addition, building on common and international law, those countries that have better means of protection or conservation of the common climate should also face a greater responsibility to protect the earth (Puaschunder 2016b).

With reference to Immanuel Kant's Categorical Imperative proposing to 'not impose on other what you do not wish for yourself' and suggesting to 'treat others how you wish to be treated,' the climatorial imperative should fortify the common but differentiated responsibility to ensure a stable climate and share the benefits among the world to alleviate those parts of the world that have run out of favorable climate time already (Kant 1785/1993). Since the birth into a nation on earth is involuntary, by birth one owes to the population of the world a share of the windfall gains acquired simply by the fate of where one was born. As outlined by the correlation between GHG emissions and time to favorable climate extinction, birth in a climatorial prosperous region by fate naturally obliges to distribute some of the benefits due to the higher contribution to climate change onset and the unfair competitive advantage due to the unequally distributed time to climate extinction.

*John Rawls:* Society as a whole outlasts individual generations. Pareto optimality for society over time differs from the aggregated individual generations' preferences. As the sum of individual generations' preferences does not necessarily lead to societally favorable outcomes over time (Bürgeinmeier 1994; Klaassen & Opschoor 1991), discounting based on individual generations' preferences can lead to an unjust advantage of living generations determining future living conditions. Based on social contract ideas in the tradition of Thomas Hobbes, Jean-Jacques Rousseau and John Lock, John Rawls' (1971) idea of the veil of ignorance is a thought experiment first introduced in the 1970s as a principle to structure a free, equal and moral society. Principles of justice should thereby be chosen by parties free from consideration of their original position. Similar concepts have been argued in Adam Smith with an impartial spectator, who is not incentivized by market mechanisms. Especially in situations, when there are climate change winners and losers, John Rawls' veil of ignorance would suggest that one should not weight in whether being a climate beneficiary or being a climate loser, which would also reveal incentives to care or not care about a heating up earth. Since the climate change problem connects the world in a common stratosphere and a global ecosystem but also given existence of tipping points and irreversible lock-ins, the climate agenda has to be pursued by the entire world community. Based on the political insight of the Conferences of the Parties (COP) agreements in the United Nations Framework Conventions that all world leaders have to come together to ratify climate agreements, one realizes the importance of a widespread support of climate change mitigation and adaptation around the globe. In order to enact this grand scale effort, John Rawls' veil of ignorance can aid structuring society to agree on climate change mitigation and adaptation efforts concurrently

without the consideration of whether or not one is a climate change winner or loser and in what position one may find her- or himself in a warming temperature. This market incentive blindness clearly goes against utilitarian arguments of the rational agents always striving to maximize expected outcomes. The idea of a veil of ignorance over the economic gains of climate change pays homage to behavioral economics attempts to bring in ethics and social care into the standard utility function.

After having evaluated the overall problem of climate justice behind a veil of ignorance that led to conclusion to take action concertededly against a warming globe, knowledge about the actual gains and losses will help find a well-balanced redistribution system.

As for redistributing the gains of a warming globe in order to offset losses incurred by global warming, a climate change bonds-and-tax finance strategy is proposed to bear the burden of climate change in a right, just and fair way within society, around the globe and over time (Puaschunder 2017a, b, c).

In climate change winner countries weighted by GDP per capita, taxation should become the main climate stability financialization strategy. Foremost, the industries winning from a warming climate should be taxed. Regarding concrete climate taxation strategies, a carbon tax on top of the existing taxation should be used to reduce the burden of climate change and encourage economic growth through subsidies. Within a country, high- and low-income households should face the same burden of climate stabilization adjusted for their disposable income. Finding the optimum balance between consumption tax adjusted for disposable income through a progressive tax scheme will foster tax compliance in the sustainability domain.

Governments in global warming loser countries weighted by GDP per capita should receive tax transfers in the present from the winning countries. The climate change loser countries should also borrow by loans or issuing of bonds to be paid back by future generations. Taxing future generations is justified as future generations avoid higher costs of climate change long-term damages and environmental irreversible lock-ins. Overall this tax-and-transfer mitigation policy thus appears as a Pareto-improving fair solution across the world and among different generations.

Tax-and-bonds transfers could be used to incentivize industry actors for choosing clean energy. The revenues raised from taxation and bonds would thereby be allocated to subsidize corporations choosing clean energy. This market incentive could shift the general race-to-the-bottom regarding price cutting behavior and choosing dirty, cheap energy to a race-to-the-top hunt for subsidies for going into clean energy and production.

Concluding, climate change winning countries are advised to use taxation of the gains in sectors to raise revenues to offset the losses incurred by climate change. Climate change losers should issue bonds to be paid back by taxing future generations. Climate justice within a country should also pay tribute to the fact that low- and high-income households share the same burden proportional to their dispensable income, for instance enabled through a progressive carbon taxation. Those who caused climate change could be regulated to bear a higher cost through carbon tax in combination with retroactive billing through a corporate inheritance tax to reap benefits from past wealth accumulation that contributed to global warming.

*Martin Heidegger:* The German philosopher Martin Heidegger was a proponent of the idea of individuals not only being future-oriented by nature (*man ist sich selbst immer voraus*) but also future-oriented in ethical endeavors. Future-oriented decision making is another skill that will help to enact climate action now for the sake of the preservation of future generations' living conditions. In the climate domain, intertemporal questions arise whether to invest in abatement today – in order to prevent negative effects of global warming – or to delay investment until more information on climate change is gained (Rovenskaya 2008). In general, resources are balanced across generations by social discounting to weight the well-

being of future generations relative to those alive today. Regarding climate justice, current generations are called upon to make sacrifices today for future generations to cut carbon emissions to avert global warming (Sachs 2014). Intergenerational balance is therefore accomplished through individual saving decisions of the present generation (Bauer 1957). Policies curbing preferences and taxes distributing welfare between the present and future generation may, however, decrease economic growth. But this climate change mitigation at the expense of lowered economic growth seems to pit the current generation against future ones. Costly climate change abatement prospects are thus hindering currently necessary action on climate change given a shrinking time window prior to reaching tipping points that make global warming irreversible (Oppenheimer, O'Neill, Webster & Agrawal 2011).

In the engagement of broad masses to contribute and give to future generations, future-oriented decision making is key. In the ample literature on discounting in the finance domain, the scarce resource time and future prospects have not been tested. Behavioral economics holds information about how to nudge people into considering future-oriented choices. Ptaschunder and Schwarz (2012) find that bundling two choices with two different timeframes and presenting the now concurrent with the future aids in making more intergenerationally harmonious choices. Ptaschunder (2020) found in a survey that the social, economic and environmental time use varies over mental temporal accounting compartments of a day, week, month, year and decade. Social time was defined as time spent with other people and engaging in social interaction, communication or activities with others. Economic time was meant as time spent using one's labor power and productive capacity, likely to earn money and be or prospectively be a productive part of the labor force. Environmental time was given as time spent outdoors in the open environment. While there are no gender differences to report; age groups and parenthood make a difference when it comes to time allocation perceptions in the social sphere and the environmental domain. Time allocation depends on the economic, social and environmental context. In the environmental frame, time use is reported as highest over all categories. Then follows time use perception of those subjects in economic mindsets. Lastly, in the social condition, time use is perceived to be the lowest, even lower than the neutral baseline condition. These results indicate that individuals tend to feel they make the most out of their time when spent in the natural environment in comparison to economic time use and social time spent. All results hold invaluable insights on incentives to nudge individuals into benevolent time use and use external cues to motivate positive change. Elucidating how contexts and experiencing critical life stages influence temporal activity allocation choices holds manifold implications to improve decisions on education, health, asset management, career paths and common goods preservation throughout life. The found differences of social, economic and environmental cues impacting on temporal discounting but not social, economic and environment monetary allocations demand for future investigations of the relation of mental temporal discounting and financial allocation preferences.

## References

- Bauer, Peter Tama. 1957. *Economic analysis and policy in underdeveloped countries*. Chapel Hill: Duke University Press.
- Bürgenmeier, Beat. 1994. "Environmental policy: Beyond the economic dimension." In B. Bürgenmeier (Ed). *Economy, Environment, and Technology: A Socio-Economic Approach*, pp. 166-175. New York: Armonk Sharpe.
- Chichilnisky, Graciela. 1996. *Development and global finance: The case for an international bank for environmental settlements*. New York: United Nations Development Programme, Office of Development Studies.
- Chichilnisky, Graciela, Geoffrey Heal & Alessandro Vercelli. 1998. *Sustainability: Dynamics and uncertainty*. Dordrecht: Kluwer.
- Chichilnisky-Heal, Natasha. 2014. How to solve the pipeline problem: The SCO as institutional bridge-builder in the Eurasian energy sector, Retrieved at [https://politicalscience.yale.edu/sites/default/files/ncheal\\_-\\_002.pdf](https://politicalscience.yale.edu/sites/default/files/ncheal_-_002.pdf).
- Chichilnisky-Heal, Natasha. Retrieved at [https://politicalscience.yale.edu/sites/default/files/ncheal\\_-\\_004.pdf](https://politicalscience.yale.edu/sites/default/files/ncheal_-_004.pdf).

- Kant, Immanuel. 1783/1993. *Grounding for the metaphysics of morals*. Cambridge: Hackett.
- Kant, Immanuel. 1788/2003. *Critique of practical reasons*. Cambridge, UK: Cambridge University Press.
- Klaassen, Ger A.J. & Johannes B. Opschoor. 1991. "Economics of sustainability or the sustainability of economics: Different paradigms." *Ecological Economics* 4: 93-115.
- Oppenheimer, Michael, Brian C. O'Neill, Mort Webster & Shardul Agrawal. 2011. "Climate change: The limits of consensus." *Science* 317 (5844): 1505-1506,
- Orlov, Sergey, Elena Rovenskaya, Julia Margarete Puaschunder & Willi Semmler. 2018. *Green bonds, transition to a low-carbon economy, and intergenerational fairness: Evidence from an extended DICE model*. International Institute for Applied Systems Analysis Working Paper WP-18-001, IIASA, Laxenburg, Austria, European Union.
- Puaschunder, Julia Margarete. 2016. "Intergenerational climate change burden sharing: An economics of climate stability research agenda proposal." *Global Journal of Management and Business Research: Economics and Commerce* 16(3): 31-38.
- Puaschunder, Julia Margarete. 2016b. "Mapping Climate Justice." *Proceedings of the 2016 Young Scientists Summer Program Conference*, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.
- Puaschunder, Julia Margarete. 2017a. "Climate in the 21<sup>st</sup> century: A macroeconomic model of fair global warming benefits distribution to grant climate justice around the world and over time." *Proceedings of the 8th International RAIS Conference on Social Sciences and Humanities* organized by Research Association for Interdisciplinary Studies (RAIS) at Georgetown University, Washington, D.C., United States, March 26-27, pp. 205-243.
- Puaschunder, Julia Margarete. 2017b. "Mapping Climate in the 21st Century." *Development* 59(3): 211-216.
- Puaschunder, Julia Margarete. 2017c. "The climatorial imperative." *Agriculture Research and Technology* 7(4): 1-2.
- Puaschunder, Julia Margarete. 2019a. *Corporate and Financial Intergenerational Leadership*. Lady Stephenson, Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Puaschunder, Julia Margarete. 2019b. *Intergenerational Equity: Corporate and Financial Leadership*. Cheltenham, UK & Northampton, MA: Edward Elgar.
- Puaschunder, Julia Margarete. 2020. *Governance and Climate Justice: Global South and Developing Nations*. New York, New York: Palgrave Macmillan. Cham, Switzerland: Springer Nature.
- Puaschunder, Julia Margarete & Gary Schwarz. 2016. "The future is now: How joint decision making curbs hyperbolic discounting but blurs social responsibility in the intergenerational equity public policy domain." *International Conference on Thinking: Cognitive, Linguistic & Psychological Sciences*, Brown University, Providence, Rhode Island, USA, August 6, 2016.
- Rawls, John. 1971. *A theory of justice*. Cambridge, MA: Harvard University Press.
- Rovenskaya, Elena. 2008. *Optimal economic growth under stochastic environmental impact: Sensitivity analysis*. Laxenburg, Austria: International Institute for Applied Systems Analysis Interim Report, January 2008.
- Sachs, Jeffrey D. 2014. "Climate change and intergenerational well-being." In L. Bernard & W. Semmler (Eds.), *The Oxford Handbook of the Macroeconomics of Global Warming* (pp. 248-259). Oxford: Oxford University Press.