International Theory (2019), **11**, 160–181
doi:10.1017/S1752971918000271

International Theory

ARTICLE

An extension of Rawls's theory of justice for climate change

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(Received 28 October 2017; revised 18 October 2018; accepted 5 December 2018; first published online 17 January 2019)

Abstract

In this paper, I argue that a new principle of background justice should be added to Rawls's Law of Peoples because climate change is an international and intergenerational problem that can destabilize the Society of Peoples and the well-ordered peoples therein. I start with explaining the nature of my project and Rawls's conception of stability. I argue that climate change poses a realistic threat to the stability of climate-vulnerable liberal peoples and as a result undermines international peace and security. Despite the uncertainties due to the complexity of the climate system and about the resilience of liberal societies, liberal peoples' fundamental interests in just basic institutions and national security call for the adoption of a precautionary principle. Rawls's own principles are, I argue, inadequate to solve the stability problem from climate change. Still, his framework provides the theoretical resources to develop a new extension. I propose a new Rawlsian principle of international, intergenerational justice that guarantees the environmental background conditions under which well-ordered peoples can sustain their basic structure over generations and sketch the principle's institutional implementation. I conclude with the theoretical and practical significance of this extension of Rawls's theory.

Keywords: climate change; Rawls; the Law of Peoples; stability; climate security; background justice

In this paper, I argue that a new principle of background justice should be added to Rawls's Law of Peoples[1] because climate change is an international and intergenerational problem that can destabilize the Society of Peoples and the well-ordered peoples therein. The paper proceeds as follows: I start with explaining the nature of my project and Rawls's conception of stability (first section). I argue that climate change poses a realistic threat to the stability of climate-vulnerable liberal

[1]John Rawls. 1999. *The Law of Peoples*. Cambridge, MA: Harvard University Presshereafter LP) §4. I will cite Rawls's works in the text or footnotes by page or section numbers following abbreviated titles, as follows: TJ: *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971/1999). PL: *Political Liberalism*, expanded edition (New York: Columbia University Press, 2005) JF: *Justice as Fairness: A Restatement*, ed. Erin Kelly (Cambridge, MA: Harvard University Press, 2001).

peoples and as a result undermines international peace and security. Despite the uncertainties due to the complexity of the climate system and about the resilience of liberal societies, liberal peoples' fundamental interests in just basic institutions and national security call for the adoption of a precautionary principle (second section). Rawls's own principles are, I argue, inadequate to solve the stability problem from climate change (third section). Still, his framework provides the theoretical resources to develop a new extension. I propose a new Rawlsian principle of international, intergenerational justice that guarantees the environmental background conditions under which well-ordered peoples can sustain their basic structure over generations and sketch the principle's institutional implementation (fourth section). I conclude with the theoretical and practical significance of this extension of Rawls's theory (fifth section).

Why extend Rawls's theory for climate change?

The need for normative theorizing on climate change

Climate change is one of the biggest risks confronting humanity.[2] Why are we failing to deal with the problem? The gradual, probabilistic nature of climate change subjects us to error and doubt about its existence and cause. The inconvenience and costs of changing lifestyles and industrial structures make us reluctant to do the right thing. Some politicians and special interests exploit and exacerbate our cognitive and volitional weaknesses for their own gain. While these are presumably part of the story as to why we fail to take necessary measures,[3] another factor that may be playing a role is the surprising lack of consensus in normative theory about climate change. Even if we somehow agree on the empirical facts of climate change and have the willingness to do what is right, it remains unclear whether we should immediately take substantial measures against climate change. We need more normative theorizing on climate change. Let me explain.

It seems fair to say that the utilitarian approach, broadly understood, has been quite influential – one might say, dominant – in discussions on climate change policy. However, this front-running theory is fraught with severe indeterminacy or disagreement problems. The principle of utility itself – acts so as to bring about the best outcome or maximize aggregate utility – is too abstract and indeterminate to guide our actions and policies.[4] Its straightforward practical application, cost-benefit analysis, reveals only that there is no consensus about how to apply utilitarianism to climate change. There is no plausible utilitarian account of intergenerational justice, which manifests itself in the deep and intractable

[2]World Economic Forum. 2018. *The Global Risks Report 2018*. 11–14. Accessed 13 October 2018. http://www3.weforum.org/docs/WEF_GRR18_Report.pdf.

[3]For an explanation of the obstacles to taking action about climate change, see Dale Jamieson. 2014. *Reason in a Dark Time: Why the Struggle Against Climate Change Failed and What It Means for Our Future,* Ch. 3. Oxford: Oxford University Press.

[4]Thomas Schelling. 1983. "Climate Change: Implications for Welfare and Policy." In *Changing Climate: Report of the Carbon Dioxide Assessment Committee*, 453–454. Washington, DC: National Academy Press; John Broome. 1992. *Counting the Cost of Global Warming*, 18–19. Cambridge, UK: The White Horse Press; James Lenman. 2000. "Consequentialism and cluelessness." *Philosophy & Public Affairs* 29(4):342–70; Stephen Gardiner. 2011 *A Perfect Moral Storm: The Ethical Tragedy of Climate Change*, Chs. 7,8. Oxford: Oxford University Press

disagreement about the social discount rate.[5] The ongoing dispute over the discount rate, due to its compounding effects, leads climate economists to reach radically divergent conclusions about what the optimal climate policy is.[6] No less confusing is the application of utilitarianism to international justice.[7] The problem is the following: Utilitarianism's strict impartiality is unacceptably demanding between nations and over generations, but the attempts to make the obligations reasonably undemanding lack a utilitarian rationale and degenerate into intractable disagreement.[8]

Then where should we look to find an alternative theory that provides principled guidance for climate policy? While utilitarianism fails to deliver reliable results and sends us mixed messages, many scholars have tried to apply it to climate change for a reason. Climate change raises issues of international and intergenerational justice and, as I argue below, calls for institutional (as well as individual) responses. In order for a normative political theory to address climate change, it has to cover international and intergenerational relationships and

[5]In fact, utilitarianism or its classic version has a straightforward answer to what our intergenerational obligation is. The principle of utility requires us to give the same weight to the welfare of future generations as to our own welfare and maximize total welfare; see Henry Sidgwick, *The Methods of Ethics*, 7th edition (Indianapolis: Hackett, 1907, 415–416). The problem is, as Rawls pointed out, that utilitarianism makes our obligations to future people prohibitively demanding (TJ, 286–287/253). If we postulate, as many economists do, a high marginal productivity of capital and the continuation of future generations, utilitarianism requires us not to consume but to invest almost all the resources at our disposal for the benefit of future people. Even if we take the diminishing marginal utility of wealth into account, intergenerational impartiality arguably requires us to save more than 2/3 of our income for the sake of future generations; see Kenneth Arrow. 1999. "Discounting, Morality, and Gaming." In Discounting and Intergenerational Equity, edited by P. Portney and J. Weyant, 14–16. Washington, DC: Resources for the Future.

[6]It is not only that different economists suggest different numbers. They find no common ground on how to resolve the discrepancy, which reflects their fundamental normative disagreement. See Nicholas Stern. 2007. *The Economics of Climate Change: The Stern Review*, Ch. 2. Cambridge, UK: Cambridge University Press; William Nordhaus. 2008. *A Question of Balance: Weighing the Options on Global Warming Policies*, Ch. 9. New Haven: Yale University Press; Martin Weitzman. 2007. "A review of the Stern Review on the Economics of Climate Change." *Journal of Economic Literature* 45(3):703–724; John Broome. 2012. *Climate Matters: Ethics in a Warming World*, Chs.6,8. New York: W.W. Norton. This lends support to Rawls's suspicion that discounting the welfare of future generations is merely an *ad hoc* device to avoid the excessively high savings rate implied by utilitarianism (TJ 1971/1999, 297–298/262).

[7]As in the case of intergenerational obligation, classical utilitarianism implies that we should give the same weight to the welfare of foreigners as to the welfare of our compatriots. This requirement to maximize global welfare is, of course, too demanding to realistic. Utilitarians often end up with a halfway house between what their theory implies and what they think is normatively acceptable or politically feasible. For example, Posner and Weisbach suggest 'International Paretianism', according to which each country is ethically obliged to ratify the optimal climate treaty that maximizes intergenerational global welfare if the ratification does not make them worse off than the status quo; see their *Climate Change Justice* (Princeton, NJ: Princeton University Press, 2010, 178–183). It is hard to find a theoretical rationale for the status quo standard. It is not surprising that International Paretianism does not stop the disagreement in the utilitarian camp; see, for example, Mathias Frisch. 2012. "Climate Change Justice." *Philosophy and Public Affairs* 40(3):225–253, 249–252 and Dale Jamieson. 2013. "Climate Change, Consequentialism, and the Road Ahead," *Chicago Journal of International Law* 13(2):439–468, 454–457.

[8]Another structural problem is that cost–benefit analysis, as it is currently practiced, hinders ethical analysis by mixing up various reasons and burying them under a few deceptively technical variables. For a similarly critical assessment of the utilitarian approach to climate change, see Ulrich Hampicke. 2011. "Climate change economics and discounted utilitarianism." *Ecological Economics* 72:45–52.

provide principles for social institutions. Utilitarianism is a fully general theory, in the sense that it applies equally to all subjects. The principle of utility applies not only domestically but also internationally and intergenerationally. It applies to social institutions as well as to individuals' actions (PL 2005, 13, 260).

If we look for a normative political theory that is broad enough to address international and intergenerational obligations and cover social institutions, Rawls's theory seems worth considering. While Rawls's theory of justice is not fully general (i.e. different principles apply to different kinds of subjects), its scope is comparable to that of utilitarianism. Rawls developed systematic principles that should regulate social institutions, and his overall theory includes principles of international and intergenerational justice that align with his principles of domestic justice. The breadth and systematicity of Rawls's theory makes it worthwhile to examine it for normative guidance on climate change policy. While there may be other theories whose application or extension to climate change would be worth considering, Rawls's theory is the one that I take up for examination in this paper.

Ideal, interpretive extension and Rawls's conception of stability

There have been theoretical attempts to extend/adapt Rawls for climate change. For example, McKinnon takes 'a Rawlsian approach to climate change justice' and argues, in my view correctly, that 'climate change threatens to destroy the external circumstances' that are necessary to 'erect and/or maintain the institutions of a just basic structure'. However, she takes her principles to belong to *non-ideal theory*. They address problems which have arisen (or will arise) in virtue of our failure to comply with the principles of justice, and their goal is to move us closer to a well-ordered state in which the non-ideal principles would presumably no longer be necessary.[9] By contrast, I intend my international, intergenerational principle to be a part of or an addition to Rawls's *ideal theory*. It addresses the stability problem from climate change that arises even if the basic structure of society fully conforms to Rawls's own principles of justice and most of us act on the principles and support the basic institutions that realize them. It is meant to be one of the principles of justice that permanently regulate Rawls's ideal world.

Moreover, McKinnon does not intend her theory to be an interpretation of Rawls. She freely picks and chooses, among the elements of Rawls's theory, only what she thinks are illuminating, and adds new values and ideals only if they are consistent with Rawls's conception of justice.[10] By contrast, I intend to preserve the structure of Rawls's theory as much as possible. I make the minimum revision or addition to Rawls's architectonics that is necessary to prevent climate change from destabilizing Rawls's ideal state in which his principles of justice and their political values are fully realized. My project is meant to be interpretive.

It is not unprecedented that the problem of stability has led to a revision of Rawls's ideal theory. All the important differences between *A Theory of Justice* and *Political Liberalism*, Rawls says, are consequences of removing the inconsistency between his account of the stability of a well-ordered society in *A Theory of Justice* and its own principles (PL 2005, xv–xviii). A conception of justice must

[9]Catriona McKinnon. 2012. *Climate Change and Future Justice: Precaution, Compensation, and Triage*, 45–46. New York: RoutledgeShe argues, for example, for the principle of compensation for the harms of climate change in the name of corrective justice (Ch.4)

[10]McKinnon 2012, p.14.

https://doi.org/10.1017/S1752971918000271 Published online by Cambridge University Press

be stable, in the sense that once a society is well ordered by that conception, the well-ordered society would overcome disturbances and continue to be well ordered in perpetuity. A liberal society is not only *in equilibrium* in the sense that its well-ordered state persists indefinitely over time when no external forces impinge upon it, but also *resilient* in the sense that whenever disturbances cause a departure from the well-ordered state, the departure calls into play forces within the system that tend to bring it back to the well-ordered equilibrium (TJ 1971/1999, 456–457/399–400). In particular, the liberal society is stable *for the right reasons*; that is, the conception of justice justly (re)generates support for its principles and the basic institutions that realize the principles (LP 1999, 12–13 [footnote 2], 45). Given the principles of moral psychology and the normal conditions of human life, those who grow up under a just basic structure acquire an effective sense of justice and a reasoned and informed allegiance to the basic institutions (TJ 1971/1999, 454–455/398).

What Rawls was not fully aware of in *A Theory of Justice* is that the fact of reasonable pluralism poses a problem of stability to his justice as fairness is part of a comprehensive moral doctrine. Due to the burdens of judgment, a plurality of reasonable yet incompatible comprehensive doctrines is the normal outcome of the exercise of human reason in a liberal democratic society (PL 2005, 54–58). Without the oppressive use of state power, a society in which all or most citizens affirm the comprehensive moral doctrine that Rawls's justice as fairness is part of or derivable from (or any comprehensive moral doctrine for that matter) cannot long endure (PL 2005, 37–38). Only when recast as a *political* conception of justice can Rawls's justice as fairness gain the support of an overlapping consensus among different comprehensive doctrines and endure from one generation to the next as a liberal conception (PL 2005, 133ff.). A stable liberal society encourages citizens to cultivate political virtues and shapes, if not determines, their aims and interests in such a way that their sense of justice is strong enough to resist the normal tendencies to injustice (PL 2005, 142–143).

Political liberalism responds to the stability problem caused by the centrifugal force of the fact of reasonable pluralism. Climate change, I believe, poses another stability problem Rawls did not anticipate. One may well ask, 'How do the natural disasters caused by climate change prevent an otherwise well-functioning liberal society from generating ongoing support for its principles and institutions?' The next section answers that question and shows that Rawls's theory of justice needs another revision.

How climate change destabilizes liberal societies and the society of peoples

A dismal scenario

Suppose that, at the end of the 21st century, Rawls's realistic utopia is realized: each domestic society has established internally just or decent institutions and honors the Law of Peoples. The problem is that these well-ordered people's energy use (which has been as dependent on fossil fuel as in the early 21st century) and land use (e.g. deforestation) have significantly increased the concentration of greenhouse gases (GHGs) in the Earth's atmosphere. As a result, the global mean surface temperature has increased by about 3.7°C and the global mean sea level has risen by 63 cm,

relative to the corresponding average in the 1986–2005 period.[11] Due to changes in the global hydrological cycle, extreme weather events (e.g. floods, droughts, and tropical cyclones) have become more intense, more frequent, and longer lasting.

Imagine an idealized liberal people named 'Indisia' in this Society of well-ordered Peoples. Many regions of Indisia are adversely affected by the global changes in temperature, sea level, and weather conditions. Due to severe droughts and heat waves, dry areas suffer from freshwater shortages for irrigation, resulting in a drop in crop productivity and the loss of agricultural land to desertification; forests are damaged by such disturbances as wildfires, insect and pathogen outbreaks, and storms. Rising ocean temperature and ocean acidification reduce the productivity of coastal fisheries. Moreover, in densely populated mega-deltas, millions of people are forced to relocate by increased coastal erosion and flooding.

Until climate change started to adversely affect their environment, Indisians had been using critical environmental resources (e.g. freshwater, cropland, forests, and fisheries) in such a prudent way that these resources had been replenished over time by natural processes. Due to the climate-related stresses, these renewable resources are depleted faster than they are renewed (e.g. aquifer salinization, soil erosion, deforestation by overharvesting of trees, and destruction of fisheries by overfishing). The scarcity of critical environmental resources causes Indisia's national economy to shrink by a large percentage, since its major industries (i.e. agriculture, fisheries, and forestry) are heavily dependent on climate-sensitive resources. While the shrunken economy reduces Indisia's tax base, the negative impacts of climate change increase the costs of providing public infrastructure (e.g. water, electricity, and transportation). Damaged infrastructure and declining industries further aggravate the depletion and degradation of environmental resources.

Before the climate-change-induced depression, Indisia's wealth and material base were barely enough to sustain its just basic structure (Rawls's assumption is that great wealth is not necessary to maintain just institutions and the levels of wealth among well-ordered peoples need not be the same [LP 1999, 107]). Climate change decreases the government's revenue sources to such a degree that it can no longer sustain the institutions that are required to guarantee the fair value of political liberties. The society cannot provide all citizens with adequate education and all-purpose material means (i.e. income and wealth) necessary for them to make intelligent and effective use of their political liberties. The government cannot bear the cost of organizing and carrying out the political process in fair and informed ways (e.g. public financing of political campaigns, election expenditures, and non-partisan news media). The knowledge and information upon which social and economic policies can be formed and intelligently assessed by citizens are not publicly available (PL 2005, lv–lviii). Politicians become dependent on private donors who pay for their campaign expenditures, and propaganda financed by special interests crowds out reasonable policy discussion. Climate-induced epidemics and widespread unemployment are also inimical to productive political deliberation.

[11]These estimates are taken from a Representative Concentration Pathway (RCP) of the Intergovernmental Panel on Climate Change report. See IPCC, *Climate Change 2014: Synthesis Report*, https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf, 57–64 (last accessed on 14 July 2018). They are model-based projections of global mean surface warming and sea level rise in 2081–2100, on the assumption that the total radiative forcing (RF) reaches 8.5 W/m^2 in 2100 on a rising trajectory (RCP8.5).

https://doi.org/10.1017/S1752971918000271 Published online by Cambridge University Press

Since the fair value of political liberties is not realized, the internal political dynamics come to favor the ruling class. Those with greater wealth and position exert undue influence on the political process and undermine the basic institutions that preserve the background conditions of social and economic justice. The basic structure fails to prevent socioeconomic inequalities from becoming excessive (TJ 1971/1999, 277–279/245–247; JF 2001, §14–15). Powerful groups shift resource distribution in their favor by manipulating socioeconomic policies. Weaker groups are structurally deprived of access to scarce environmental resources. This phenomenon, which Homer-Dixon calls 'resource capture', not only exacerbates the poverty of weaker groups but also aggravates the capture of the political process by the rich and powerful.[12] Not only does the excessive inequality deprive the poor and powerless of their ability to take intelligent and effective advantage of political liberties, but the failure of political institutions also drains their motivation to participate in political processes and leads them to become cynical about politics and retreat into private life. Indisia gets trapped in a vicious circle of the unequal worth of political liberties, the decline of the institutions of background justice (= unfair social and economic policies), and the inequality between the wealthy and the poor.[13]

When the political, economic gap between the dominant group and the marginalized group is so wide that the society is no longer (perceived as) a fair scheme of cooperation among free and equal persons, citizens lose their self-respect and sense of justice. They 'become resentful, cynical, and apathetic' (PL 2005, 363) and get swayed by destabilizing attitudes such as social envy and spite, a will to dominate, or a tendency to submit (TJ 1971/1999, §80,81). Indisians do not act willingly to give one another justice and uphold Indisia's basic institutions any more. The erosion of social cohesion and state legitimacy further constrains the society's capacity to adapt to the negative effects of climate change.[14] In sum, even if a liberal society starts with an equilibrium state in which it manages to provide its citizens with the requisite primary goods to enable and motivate them to sustain a just basic structure, climate-change-induced natural disasters may arouse destabilizing forces, which have been contained by well-functioning basic institutions, and move it away from the just equilibrium.

In fact, it is not only those liberal peoples whose national economy is dependent on climate-sensitive resources and barely sufficient to maintain a just basic structure that are susceptible to destabilization by climate change.

[12]For real-life examples of resource capture, see Homer-Dixon, Thomas. 1999. *Environment, Scarcity, and Violence*, 74–77. Princeton, NJ: Princeton University Press.My Indisia scenario is indebted to his model of how environmental scarcity and its social effects (e.g. migration, social segmentation, and weakening of the state) lead to violent conflicts.

[13]I believe that the fair value of political liberties is a weak link where the stability of Rawls's liberal society can be put to the test. This vulnerability might be the reason why political liberties are singled out for special treatment in a fully adequate scheme of equal basic liberties: the first principle of justice includes a proviso that the equal political liberties, and *only* these liberties, are to be guaranteed their fair value (PL 2005, VIII.§7; JF, §45–46).

[14]Homer-Dixon, *Environment, Scarcity, and Violence*, 96–103. Jon Barnett and Neil Adger also emphasize that the state's capacity to adapt to climate change is itself at risk from climate change; see their "Climate Change, Human Security, and Violent Conflict," *Political Geography* 26 (2007): 639–655, 646–651.

Given Indisia's severely degraded environment, its limited adaptive capacity, and disadvantaged Indisians' reduced loyalty to the state and fellow citizens, it seems likely that many of Indisia's mega-delta residents who depend on agriculture or fisheries for their livelihood would fail to find a place to relocate in Indisia and cross international borders. Unlike voluntary migrants from well-ordered societies, these climate refugees have especially urgent reason to migrate. It would be not only inhumane but also irresponsible to deny the desperate environmental migrants entry, even if liberal peoples normally have a right to limit immigration to protect their political culture and constitutional principles (LP 1999, 39 [footnote 48]). A large-scale influx of environmental refugees increases the risk of political disruption and violent conflict in host countries.[15]

Moreover, climate change would undermine Indisians' allegiance to the Law of Peoples as well as to their principles of domestic justice. Unlike inevitable natural disasters such as tsunamis or volcanic eruptions, climate-change-induced disasters are a result of intentional human activities. It is reasonable to think that some preventive and/or remedial measures should be taken in the name of international justice, regardless of whether Indisia has already established internally just institutions. Indisians would find it unfair that negative effects of climate change are unilaterally transferred from GHG emitting countries to those countries whose geographical characteristics happen to make them vulnerable to climate change. Even though they cannot point the finger at a specific country, it would be natural for Indisians to nurse a grievance against all the GHG emitting countries and the international order.

Indisia's disordered political structure and culture allow the oligarchy that has captured Indisia's political process to (mis)lead its citizens to give vent to their political frustration by finding fault with other countries. The ruling class can induce the discontented citizens to support, or at least allow, aggressive foreign policies (e.g. intervening (covertly) in neighboring countries or even waging a war against them), even when these acts of international aggression actually serve not the interests of the citizenry as a whole but their own interests. The displaced and marginalized climate refugee population might become a breeding ground for international terrorism. Even if other countries somehow manage to keep Indisia at bay, the emergence of a dangerous burdened society makes international peace degenerate into a mere *modus vivendi*.[16] International peace is no longer firmly based on all peoples' allegiances to the Law of Peoples, that is, the world is not stable for the right reasons (LP 1999, 45).

To sum up, when climate change destabilizes vulnerable peoples, the absence of a well-ordered regime makes them potentially aggressive and prone to produce

[15]See, for example, McLeman, Robert and Barry Smit. 2006. "Migration as an adaptation to climate change." *Climate Change* 76:31–53; Reuveny, Rafael. 2007. "Climate Change-Induced Migration and Violent Conflict." *Political Geography* 26:656–673. I offer an explanation why masses of immigrants, especially from nonliberal societies, cause disruption to the host country's political culture and pose a threat to its stability for the right reasons in Kim, Hyunseop "A Stability Interpretation of Rawls's *The Law of Peoples*," *Political Theory* 43.4 (2015): 473–499, 488.

[16]The liberal democratic institutions required for internal stability for the right reasons, which Indisia no longer has, are also what Rawls thinks make a society less likely to engage in international war. Rawls admits that unless each of the constitutional democratic societies satisfies these institutional requirements, the peace among them is not secure (LP, §5.3–5.4, especially 49–50).

masses of emigrants. The internal political structure and culture of each and every people is the only mechanism that guarantees lasting international peace and order in the Society of Peoples where there is no world government (LP 1999, 48).[17] The bottom line is that negative impacts of climate change threaten the stability of all well-ordered peoples in the Society of Peoples.[18]

Uncertainties in climate change and Rawlsian precaution for stability

Isn't the scenario of Indisia, one might object, unreasonably alarmist? There seems to be broad scientific consensus that, under the business-as-usual scenario, anthropogenic GHG emissions will cause global warming, sea level rise and increased extreme weather events, leading to severe, widespread and irreversible impacts globally. As a result, some countries will suffer from various negative impacts such as food and water shortages, increased diseases and injury, and forced relocation of populations.[19] However, I admit, it is not certain whether environmental stresses from climate change would make some liberal people(s) fall into a burdened state and pose a threat to international security.

This uncertainty is partly due to the complexity of the climate system. Our understanding of the dynamics of carbon cycle remains incomplete, which creates uncertainty in the stabilization level of atmospheric CO_2 concentration for a given trajectory of anthropogenic CO_2 emissions. The climate sensitivity, the equilibrium global average surface warming following a doubling of CO_2 concentration, is also uncertain. Even if we can assume that the maximum global-mean temperature increase as a result of CO_2 emissions is linearly proportional to the total cumulative CO_2 emissions, the remaining carbon budget for a given temperature target is open to debate.[20] How the global average temperature change translates into disruptions in weather patterns is also subject to considerable uncertainty, especially at the regional level. Moreover, non-linear feedback mechanisms might bring about an abrupt climate change with rapid and disruptive effects.[21]

[17]In my 'A Stability Interpretation of Rawls's *The Law of Peoples*', I explain Rawls's idea of democratic peace and its stability in the Society of Peoples, which I call the 'explanatory nationalism with respect to the causes of international war/peace', in more detail (481–482).

[18]Historical climatology adds plausibility to this dismal scenario by providing actual cases in which climatic instability combines with maladaptive policies to bring about social disintegration and political crisis. For example, Geoffrey Parker demonstrates that global cooling and extreme weather events in the 17th century (the Little Ice Age) resulted in crop failures and food shortages that led to forced migrations, wars, and rebellions around Europe and Asia (the General Crisis); Parker, *Global Crisis: War, Climate Change & Catastrophe in the Seventeenth Century* (New Haven: Yale University Press, 2013). It is worth noting that climate-induced political instabilities were mediated by the spread among the public of grievances and radical ideas that undermined the perceived legitimacy of and allegiance to the government (Part IV, 507–585).

[19]IPCC, *Climate Change 2014: Synthesis Report*, 77–78.

[20]Millar, Richard, Jan Fuglestvedt, Pierre Friedlingstein, Joeri Rogelj, Michael Grubb, Damon Matthews, Ragnhild Skeie, Piers Forster, David Frame, and Myles Allen 2017. "Emission Budgets and Pathways Consistent with Limiting Warming to 1.5oC." *Nature Geoscience* 10:741–747; Glen Peters. 2018. "Beyond Carbon Budgets." *Nature Geoscience* 11:378–390

[21]For example, we still cannot exclude the possibility that the Atlantic Meridional Overturning Circulation might collapse in the future. For AMOC and other potentially abrupt changes, see IPCC, *Climate Change 2013: The Physical Science Basis*, 1114–1119.

Another source of uncertainty is about how resilient liberal societies are. How easily the failure to ensure the fair value of political liberties undermines the institutions of background justice and aggravates socioeconomic inequalities is a question in political sociology (TJ 1971/1999, 224–227/197–199). How strongly citizens' sense of justice and their allegiance to basic institutions withstand the failure of political institutions is a question in moral–political psychology. Rawls does not undertake detailed investigations into these questions, so he leaves the resiliency of a liberal society indeterminate to that extent. What adds to this indeterminacy is the multiple realizability of a liberal political conception of justice. A political conception of justice does not fully determine how to design the basic institutions to realize its principles. Which set of institutions best realizes its principles and ideals depend on the society's historical circumstances and its traditions of political thought and practice (JF 2001, §41–42). Nor is it easy to ascertain how resilient the Society of Peoples is (i.e. how likely it is for a climate-destabilized people to withdraw its allegiance to the Law of Peoples and undermine the stability for the right reasons of the Society of Peoples).

However, these two kinds of uncertainties – the natural scientific uncertainties about the severity of the negative effects of climate change and the social scientific uncertainties about the resilience of liberal societies and the Society of Peoples – do not stop us from revising Rawls's theory in response to climate change. What makes the revision necessary is not that the negative impacts of climate-change-induced natural disasters are certain to exceed the resilience of some liberal society's just basic structure and the democratic peace of the Society of Peoples, but only that the likelihood of climate-change-induced destabilization is above a certain threshold such that it is a realistic (as opposed to merely imaginable) possibility. Let me explain.

Rawls argued that it is rational for the parties in the original position to be guided by the maximin rule and choose his two principles of justice over the principle of average utility. The principle of utility may sometimes allow, or even require, the restriction or denial of some citizens' basic rights and liberties for the sake of greater economic and social benefits for others. This possible outcome of the utility principle as the sole principle of justice is unacceptable and intolerable, because basic rights and liberties are their fundamental interests as free and equal citizens (TJ 1971/1999, §82; JF 2001, §32). A well-ordered society regulated by Rawls's two principles of justice secures for all citizens their basic rights and liberties and an adequate share of income and wealth that enables them to effectively exercise and enjoy those freedoms. A utilitarian society might provide them with more material means to satisfy their desires, but the citizens care relatively little for this potential gain. What is no less important for them than the economic gain is the political culture of mutual respect and cooperation the public endorsement and realization of the two principles fosters and the desirable effects of that culture on their self-respect and political virtues (TJ 1971/1999, §29; JF 2001, §33). When these two conditions – the restriction or denial of basic rights and liberties is unacceptably bad, and the possible gain of the utility principle above what is guaranteed by the two principles is not significant – obtain and the parties have no reliable basis for estimating the probability of how likely basic rights and liberties are to be restricted or denied under the principle of average utility, it is sensible to guard against the unacceptably bad possibility (JF 2001, §28, 29.1).

For structurally similar reasons, I believe, it serves the fundamental interests of liberal peoples to secure their stability from climate change, instead of running the risk of letting climate change destabilize their just basic structure and/or the Society of Peoples they belong to. The fundamental interests of a liberal people consist in the protection of its territory, the security and safety of its citizens, and the preservation of its political institutions; it also seeks to assure reasonable justice for all its citizens (LP 1999, 29, 34). So maintaining a just basic structure and the international order that guarantees its territorial security and political independence has priority over other interests (e.g. increasing economic wealth more than is necessary to maintain just basic institutions) (cf. TJ 1971/1999, 379/333). Destabilization of just basic institutions and the Society of Peoples by climate change is unacceptably bad and must be avoided at almost all costs.

How much would it cost to eliminate Indisia-like scenarios? Limiting the increase in global average surface temperature to 2°C over the pre-industrial average has often been regarded as necessary to prevent dangerous anthropogenic interference with the climate system. Several studies suggest that this target is achievable at the cost of less than a few percentage of global gross domestic product.[22] While achieving the 2°C target cannot simply be equated with what it takes to ensure that climate change does not destabilize well-ordered peoples and the Society of Peoples, it seems reasonable to assume that the potential gain by doing without precautionary measures against climate change is non-essential economic growth or greater wealth than is necessary to preserve just institutions in each society.[23] In other words, the possibility of climate-change-induced destabilization can be eliminated without threatening or undermining any liberal people's basic structure if the costs are fairly distributed among peoples.

Furthermore, adopting a precautionary principle for climate change has considerable expressive value. Endorsing the precautionary principle publicly demonstrates the resolution of all liberal peoples to respect the basic structure of other peoples, especially that of climate-vulnerable countries. All the more so, because implementing the principle incurs considerable, if manageable, costs and thus pays more than lip service to the political independence and autonomy of other peoples. This collective recognition of the political equality of all peoples will help to reinforce the political climate of mutual respect among peoples. Not only is this political atmosphere of mutual respect conducive to the maintenance of international peace and security, but it also has positive effects on each people's self-respect of themselves as a people; for this *amour-propre* of a people, one of its fundamental interests, depends on 'receiving from other peoples a proper respect

[22]IPCC, *Climate Change 2014: Synthesis Report*, 24 (the aggregate economic costs of mitigation for stabilization at 430–480 ppm CO_2-eq, a mitigation scenario that is likely to limit warming to below 2°C through the 21st century, is estimated to be a reduction of global gross domestic product (GDP) by about 4.8% in 2100, relative to consumption in baseline scenarios that grows 3–9 times over the century = a reduction in annual GDP growth rate by about 0.14%). Stern, *The Economics of Climate Change*, ch.10 (the expected annual cost for stabilization at around 500–550 ppm CO_2-eq is $1 \pm 3\%$ of GDP by 2050).

[23]For example, Nicholas Stern says, 'An annual cost rising to 1% of GDP by 2050 poses little threat to standards of living, given that economic output in the OECD countries is likely to rise in real terms by over 200% by then, and in developing regions as a whole by 400% or more' (*The Economics of Climate Change*, 267). Even those who are opposed to immediate, drastic mitigation agree that it is affordable. See, for example, Lomborg, Bjørn 2001. *The Skeptical Environmentalist: Measuring the Real State of the World*, 323. Cambridge, UK: Cambridge University Press.

and recognition of their equality'. Moreover, since liberal peoples are reasonable, they are fully prepared to grant the same proper respect and recognition to other peoples as equals (LP 1999, 34–35). In a sense, it is not against their fundamental interest to give other reasonable peoples due respect by honoring the precautionary principle even when they might profit by violating it (LP 1999, 25, 29). Hence liberal peoples care very little, if at all, for the potential gain above what can be guaranteed by adopting the precautionary principle for climate change.

Given the relative weight of possible risks and benefits, it is presumably in the interest of liberal peoples to adopt a precautionary principle that ensures that climate change does not destabilize their basic structure and the international order, even if no specific probability can be assigned to the possibility of climate-change-induced destabilization. Indeed, the climate-change-induced destabilization seems to exceed the 'threshold likelihood' that makes it a realistic possibility.[24] A number of philosophers have argued that taking precautionary measures against a threat of catastrophic harm is not paranoid but properly cautious, when its likelihood is above a minimal threshold; that is, (1) the mechanism by which the threat would be realized is well understood and (2) the conditions for the functioning of the mechanism are accumulating.[25] Apparently, the possibility of climate-change-induced destabilization is above this 'anti-paranoia' threshold: while its precise probability cannot be calculated, (1) numerous scientific studies have illuminated the mechanisms leading from GHG emissions to climate changes and to weather-related disasters and, as I have described above, we have a basic theoretical understanding of how climate-change-induced natural disasters might destabilize some liberal people(s) and pose a threat to international peace. (2) It is observed that anthropogenic GHG emissions have increased, atmosphere and ocean have warmed, sea level has risen, and many extreme weather events have changed.[26] Some scholars argue that anthropogenic climatic change was a contributory factor in political unrests, via drought, crop failure, and migration.[27] Admittedly, it remains controversial how significant the contribution of climatic change was and there is room for more systematic research on the subject.[28] More important, the social and political conditions that affect adaptive capacity and

[24]Without the requirement of a certain threshold of likelihood, the precautionary principle can end up being paralyzing. See Sunstein, Cass. 2007. *Worst-case Scenarios*, 123–133. Cambridge, MA: Harvard University Press.

[25]Shue, Henry, "Deadly delays, saving opportunities: creating a more dangerous world?," reprinted in his *Climate Justice*, 263–286, at 264–269. Oxford: Oxford University Press, 2014 and Hartzell-Nichols, Lauren. 2017. *A Climate of Risk: Precautionary Principles, Catastrophes and Climate Change*, 50–51. New York: Routledge. Stephen Gardiner also appears to think that when these conditions are met, the threat is realistic/credible and the threshold that warrants precautionary measures is exceeded. Stephen Gardiner 2006. "A Core Precautionary Principle." The Journal of Political Philosophy 14(1):33–60, footnote 62

[26]IPCC, *Climate Change 2014: Synthesis Report*, 40–53.

[27]Gleick, Peter. 2014. "Water, drought, climate change, and conflict in Syria." *Weather, Climate and Society* 6:331–340; Kelley, Colin, Shahrzad Mohtadi, Mark Cane, Richard Seager, and Yochanan Kushnir 2015. "Climate change in the fertile crescent and implications of the recent Syrian drought." *Proceedings of the National Academy of Sciences* 112:3241–3246; von Uexkull, Nina, Mihai Croicu, Hanne Fjelde, and Halvard Buhaug 2016. "Civil conflict sensitivity to growing-season drought." *Proceedings of the National Academy of Sciences* 113:12391–12396

[28]Selby Jan, Omar Dahi, Christiane Fröhlich, and Mike Hulme 2017. "Climate change and the Syrian civil war revisited." *Political Geography* 60:232–244

vulnerability to extreme weather events should be assessed by reference not to our actual world but to Rawls's ideal world. However, we seem to have more than enough evidence to infer that the conditions favorable for the functioning of relevant mechanisms would be accumulating.

To sum up, citizens in a liberal society do not let the protection of their basic liberties depend on 'uncertain and speculative actuarial calculations' by the utility principle. Instead, they secure the basic liberties by embedding their priority over aggregate welfare in the public, political conception of justice (TJ 1971/1999, 160–161/138–139). Similarly, liberal peoples do not put their fundamental interests at risk on the chance that their basic structures would withstand the challenges of climate change. The overriding importance of preserving just basic institutions and international peace does not allow them to gamble with their fundamental interests as free and equal peoples for the sake of greater wealth. Eliminating the possibility of climate-change-induced destabilization is well worth the cost, especially in light of its positive effects on international political climate and the self-respect of well-ordered peoples.

Restatement

Let me briefly restate the main idea of this section as an international original position argument. In the second-level original position, the representatives of liberal peoples do not know the relative strength of the people whose fundamental interests they represent, the size of their territory and population, the extent of their natural resources, or the level of their economic development (LP 1999, 32–33). But they do know the general geographical fact that since the Earth's atmosphere knows no boundaries, the national borders do not prevent one people's GHG emissions from having negative effects on other peoples. So the parties shall be concerned about the possibility that the peoples they represent might suffer the plight of Indisia: their national economy turns out to be dependent on climate-sensitive resources and barely sufficient to maintain a just basic structure, so their liberal basic institutions are specifically vulnerable to climate change. Another worry is that the peoples they represent may be susceptible to acts of international aggression and emigration from other people(s) burdened by climate change. Thus, the parties may well wonder whether Rawls's eight principles of the Law of Peoples are sufficient to safeguard their just basic structure against the negative effects of climate change, an external threat that, unlike traditional war, Rawls did not seem to anticipate.

Why Rawls's own principles are not adequate to solve the stability problem from climate change?

One might object that I am underestimating the theoretical resources in Rawls's system. The objection is that if Rawls's own principles are properly (re)interpreted and abided by, well-ordered peoples in the Society of Peoples will be resilient enough to withstand climate change. The Indisia scenario is, so the objection goes, a misdescription of Rawls's realistic utopia. Let me examine some (re)interpretations that purport to stabilize Rawls's current system. It will be shown that they conflict with other parts of his theory (Compare: a society united on a single comprehensive doctrine might be able to maintain stability by the oppressive use of

https://doi.org/10.1017/S1752971918000271 Published online by Cambridge University Press

state power, but the oppression is in conflict with the basic rights and liberties of citizens). This critical examination will give us hints about what kind of principle should be added to stabilize Rawls's ideal state in a way that is consistent with his theory as a whole.

Just savings principle

According to Rawls's original just savings principle, once just basic institutions are established, each generation has only to maintain the existing stock of capital and pass it onto their successor. One might suggest that we reinterpret Rawls's principle of domestic intergenerational justice in such a way that early generations should continue to increase the stock of real capital as a precaution against accidents that might befall their descendants. As for climate change, the idea is that earlier generations of Indisia should have saved more in order to enable their future generations to overcome its negative effects and preserve a just basic structure. For example, at the possible prospect of sea level rise, they should have built seawalls around mega-delta regions in advance. They should also have restructured industries so that the national economy is less dependent on climate-sensitive resources.

I agree that if Indisia were chronically vulnerable to non-anthropogenic natural disasters (e.g. earthquakes, volcanic eruptions), overcoming the disadvantageous geographical condition and establishing/maintaining a just basic structure would have to be taken into account by the just savings principle. In Rawls's view, each people can and should take care of its own purely natural disadvantages (e.g. the scarcity of natural resources; LP 1999, 116–117). However, the problem of climate change is not purely natural but international. When a country experiences the negative effects of climate change, it is primarily due to the activities of other countries. Requiring Indisians to adjust their savings rate in view of climate-change-induced environmental degradation is tantamount to allowing other peoples to externalize the costs of their GHG emissions over the territorial boundaries. According to Rawls's Law of Peoples, each people has the responsibility for maintaining their territory and its environmental integrity and bears the loss for not doing so. Even though territorial boundaries are historically arbitrary, this institution of territorial rights is justifiable for the reason that making each society internalize the costs of their activities within the territory they occupy protects the land and its natural resources. Otherwise, a tragedy of the commons is likely to occur at the international level (LP 1999, 8, 38–39). Allowing other peoples to reap the benefits of burning fossil fuels and dump the costs on Indisia makes the Earth's atmosphere vulnerable to an international tragedy of the commons. It is hardly congruent with the role of national boundaries in the Society of Peoples. The lesson, climate change calls for a principle of international, as opposed to domestic, justice.

The duty of assistance

As with the just savings principle, the duty of assistance is a principle of *transition*. Rawls's expectation is that once a society establishes a just or decent basic structure and becomes a full member of the Society of Peoples, the society will from then on be able to manage its affairs on its own terms. So the duty of assistance has a cutoff point: once the target of helping a burdened society become well ordered is

reached, the duty ceases to hold. This limited aim of assistance ensures the political autonomy or right to self-determination of free and equal peoples in the Society of Peoples (LP 1999, 111, 118). However, the correct interpretation of the duty of assistance is, one might suggest, not that liberal peoples are to close their eyes to a burdened society when it needs help just for the reason that it used to be well ordered. The suggestion is that when climate change makes a well-ordered people fall into a burdened state, the duty of assistance requires other liberal peoples to help it restore well orderedness. Again, I agree that if non-anthropogenic natural disasters were to undermine a well-ordered people's basic structure, international aid would have to be provided by the duty of assistance.

However, I doubt that the problem of climate change can and should be taken care of by this (extended) duty of assistance for the following reason: since the duty of assistance has the limited goal of rescuing individual societies from a burdened state, this intragenerational principle alone does not guarantee the long-term stability of the Society of Peoples. Note that the causes and effects of climate change are intergenerational. Carbon dioxide, once emitted, continues to contribute to global warming for many generations.[29] Some of the mechanisms set in motion by GHG emissions take generations to take full effect.[30] When a society suffers from climate change, it is primarily the cumulative effects of what antecedent generations did. Imagine that faced with the adverse effects of climate change, well-ordered peoples in each generation focus only on making sure that their contemporaries are not burdened. While they spend the extra resources at their disposal (= more than what is necessary to maintain their own basic institutions) bailing out their contemporaries in trouble, they continue to emit GHGs without using the energy for capital accumulation; that is, each well-ordered people wastes away the fossil fuel energy and bequeath its successor (as is required by the just savings principle) only the minimum capital barely enough to maintain just basic institutions. If this short-sighted climate policy continues for generations, there might come a time when the remaining well-ordered peoples cannot bring all the burdened societies in the world back to well orderedness.[31] The lesson, an intergenerational principle of justice is necessary to ensure the long-term stability of the Society of Peoples and the well-ordered peoples therein.

[29]IPCC, *Climate Change 2013: The Physical Science Basis*, 470–473 (Box 6.1) and 544–545. Accessed 14 July 2018. http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. See also Archer, David, Michael Eby, Victor Brovkin, Andy Ridgwell, Long Cao, Uwe Mikolajewicz, Ken Caldeira, Katsumi Matsumoto, Guy Munhoven, Alvaro Montenegro, and Kathy Tokos 2009. "Atmospheric Lifetime of Fossil Fuel Carbon Dioxide." *Annual Review of Earth and Planetary Sciences* 37:117–134; Joos, Fortunat, R. Roth, J. Fuglestvedt, G. Peters, I. Enting, W. von Bloh, V. Brovkin, E. Burke, M. Eby, N. Edwards, T. Friedrich, T. Frolicher, P. Halloran, P. Holden, C. Jones, T. Kleinen, F. Mackenzie, K. Matsumoto, M. Meinshausen, G. Plattner, A. Reisinger, J. Segschneider, G. Shaffer, M. Steinacher, K. Strassmann, K. Tanaka, A. Timmermann, and A. Weaver 2013. "Carbon dioxide and climate impulse response functions for the computation of greenhouse gas metrics: a multi-model analysis." *Atmospheric Chemistry and Physics* 13(5):2793–2825

[30]For example, the sea level rise due to ocean thermal expansion has much longer time scales – several centuries and even millennia – than the surface warming, because of the time required to transport heat into the deep ocean. See IPCC, *Climate Change 2013: The Physical Science Basis*, 100 and §13.5.4.

[31]Gardiner, Stephen. 2011. "Rawls and Climate Change: Does Rawlsian Political Philosophy Pass the Global Test?," *Critical Review of International Social and Political Philosophy* 14(2):125–151, 143–144

Voluntary cooperation

The principles of the Law of Peoples (in particular, the second and third principles regarding international treaties and agreements) make room for various forms of international cooperative organizations (LP 1999, 37). In the Society of Peoples, peoples are expected to set up a cooperative organization that regulates free international trade by a fair background framework and a cooperative banking system from which they can borrow money (LP 1999, §4.5). One might object that such a cooperative organization will be enough to address the problem of climate change.

In the Society of Peoples, a free international trading system and a central bank are mainly a matter of mutual advantage. Their malfunction does not threaten the stability of liberal peoples (Rawls's assumption is that each society is in principle capable of becoming well-ordered only with the resources within their territory [LP 1999, 108]). Therefore, liberal peoples are 'free to make use of' these cooperative organizations 'on their own initiative' (LP 1999, 43). Suppose a liberal people refuses, for some reason, to join the multilateral trade regime such that its participation would benefit every member country. Non-participation may well be imprudent or irrationally isolationist, but it will not be a ground for condemnation or sanctions under the Law of Peoples.

The problem of climate change is different. Its magnitude is, I have argued, such that if left unaddressed, the negative impacts dangerously threaten the basic structure of climate-vulnerable peoples and possibly undermine the stability for the right reasons of the Society of Peoples. Suppose a country, while producing a large proportion of global GHG emissions, refuses to take any part in a reasonable climate treaty and as a result thwarts the internationally coordinated efforts to address climate change. The unreasonable refusal threatens the fundamental interests of climate-vulnerable peoples by putting their basic institutions at risk and weakens the mutual respect in relations among well-ordered peoples. It is not merely a matter of economic benefit but also of justice among free and independent peoples and international peace. So the problem of climate change cannot be simply relegated to voluntary organizations but must be corrected by the basic structure of the Society of Peoples. The international institution in charge of addressing climate change should be authorized to issue condemnation or impose sanctions on uncooperative countries in the name of the Society of Peoples.

Rules of individual conduct

Rawls's principles for social institutions leave room for the moral principles that individuals should follow irrespective of their institutional relationships; for example, the natural duty not to harm others (TJ 1971/1999, 114–115/98–99). One might think that the no-harm principle requires individuals not to emit GHGs or to drastically reduce their GHG emissions. The GHGs that individuals knowingly emit, by way of a long, complicated causal chain, induce natural disasters that kill or seriously injure other individuals in distant lands and/or in the future. If the spatiotemporal distance and the causal complexity are morally irrelevant, the no-harm principle arguably allows individuals to emit, at most, what is necessary to

survive or satisfy their basic needs.[32] If individuals give up all of their non-subsistence emissions, climate change will presumably be eliminated or mitigated to such a degree that its negative effects do not pose a threat to the stability of liberal peoples. Then doesn't the no-harm principle or its alleged implication that individuals should reduce their emissions down to the subsistence level properly prevent climate change from eroding environmental background justice?

Unfortunately not. It would be overkill to require every individual to restrict their GHG emissions to the subsistence level. If all other individuals were to forego all of their non-subsistence emissions, it would not impair environmental background justice for a few individuals to exempt themselves from the abstinence and make themselves better off. Compare: Rawls regards the inheritance tax system as a paradigmatic basic institution that preserves economic background justice over time (PL 2005, 268). If individuals were to be required to bequeath their children only what is necessary for subsistence, this restriction on property rights would almost certainly prevent intergenerational transfer of wealth from undermining background justice. However, this requirement is unnecessarily demanding. It overshoots the target of preventing wealth inheritance from generating a hereditary class structure, impairing social mobility and equal opportunity, and undermining citizens' sense of justice.

The problem is that it is not practicable to ask individuals to adjust their own bequests in light of their effects on the maintenance of just background conditions. The consequences are so indirect, complex, and far in the future that it exceeds the capacity of individuals to comprehend and foresee the ramifications of their particular actions on the conditions of economic background justice. So the role of continually adjusting and compensating for the tendency of inheritances to erode economic background justice should be outsourced to the basic structure of society (PL 2005, 266–268).

No less information would be required for individuals to know the right level of emissions reduction to prevent climate change from eroding environmental background justice. It would be an excessive burden on an individual to figure out what the trajectory of global GHG emissions should be like over time in order to preserve the environmental background conditions of justice, let alone what his share is in the global emissions scheme. In addition to the geophysical and sociopsychological factors, we have identified above, he should take into account normative factors that affect his share of emissions permits. Not only does this multivariable equation impose a heavy burden of calculation on the individual, but its complexity is also an invitation to miscalculation in his favor (e.g. he would be tempted to overestimate his own energy needs). It is also tempting to think that his individual contribution does not make a perceptible or meaningful difference. Even if he somehow manages to get the calculation right, it would require an extraordinary willpower to fulfill his individual responsibility without the assurance that

[32]John Broome argues that the duty not to harm requires each of us not to emit GHGs without compensating the people who are harmed or offsetting our emissions; see his *Climate Matters*, Chs. 4 and 5. Martin Traxler argues that no one is morally required to make cuts to their subsistence emissions, even if the subsistence emissions inflict harm on others. As self-defense may excuse the commission of an injury and even a murder, so does the necessity for subsistence make our indispensable emissions and the resulting infliction of harm they cause excusable. See his "Fair chore division for climate change," *Social Theory and Practice* 28 (2002):101–134, 107–108. For the distinction between subsistence emissions and luxury emissions, see Shue, Henry. 1993. "Subsistence emissions and luxury emissions." *Law and Policy* 15:39–59

others will also do their part (more realistically, while it is almost certain that most of them will not).

This logic, applicable to other moral rules of natural duty, suggests that there are no feasible rules of conduct that it is sensible to impose on individuals to prevent the erosion of environmental background justice by climate change. These considerable, if not insurmountable, challenges count in favor of attributing the obligation of environmental background justice, at least initially, to institutions, rather than leaving it directly to individual responsibility. Then individuals do not have to do the complicated moral math on their own. There is little doubt that the collective obligation, if individuals do what trickles down to them from the institutional level, makes a difference. Nor does it take a heroic moral resolution on the part of individuals to do their share, because the institutions provide the assurance that others will also comply with the climate policy.[33] Indeed, this 'institutional division of labor' does a service to individual citizens: insofar as they fulfill their share of the institutionally determined obligation, they are then left free to continue with their way of life, secure in the knowledge that somewhere in the institutional structure (in this case, international and intergenerational institutions) the necessary measures are being taken to protect environmental background conditions of justice from climate change (PL 2005, 268–269).

A new principle of background justice

Climate change is the source of a problem of environmental background justice

Another way of putting the main ideas of the last two sections is that climate change raises a problem of environmental background justice in the following sense (cf. PL 2005, VII.§4): (1) the cumulative effects of GHG emissions erode the environmental background conditions in which liberal and decent societies can internally maintain just or decent basic institutions over time [section II] and (2) the rules of conduct for individuals [section III.D], the principles for domestic basic structures (including the just savings principle) [section III.A], and the principles of the Law of Peoples (as they stand) [section III.B] are ill-suited to prevent the erosion of environmental background justice. In other words, even if individuals abide by the moral rules that regulate their conduct and well-ordered peoples run their basic institutions in accordance with just or decent principles of domestic justice and honor the Law of Peoples in relation to other peoples, these full compliances are not sufficient to guarantee the preservation of environmental background justice. Even if the conditions under which these law-abiding activities are genuinely free and fair initially hold, GHG emissions that the moral, domestic, and intragenerational rules permit and the resultant 'natural' disasters may in the course of time affect the environmental situations of well-ordered peoples and the operation of their basic institutions, so that the just background conditions no longer obtain. Without basic institutions that preserve the environmental conditions necessary for background justice, the apparently innocuous activities that

[33]It is not expected that most citizens in a well-ordered society are in such command or control of themselves as to fulfill the requirements of right and justice with complete ease and grace (TJ 1971/1999, 478–479/419). A conception of justice is not stable if support for its principles and basic institutions can be (re)generated only with the help of such extraordinary self-command or heroic self-control.

comply with individual rules of conduct and Rawls's own principle of justice may cease to be fair.

A new Rawlsian principle of international, intergenerational justice

I submit that the following principle should be added to Rawls's Law of Peoples:

> *Peoples are not to impair the environmental background conditions of justice under which each liberal or decent people can maintain a just or decent basic structure over generations.*

Two comments are in order. First, obviously, this principle is applicable not only to climate change but also to other international, intergenerational environmental problems when their magnitude is such that uncontrolled human activities threaten to destabilize the basic structure of well-ordered peoples. Second, there has been a debate as to whether Rawls's liberal principles of justice for a domestic society, including the difference principle, should extend to the world at large, and this question has often been taken to hinge on whether the current global practices and institutional arrangements amount to a 'global basic structure', a set of global institutions that assigns basic rights and duties and distributes the burdens and benefits of productive cooperation as the basic structure in a domestic society does. Whether there exists a global basic structure is irrelevant to this new principle of background justice. Rawls's principles of domestic justice, by their very nature, expect or require that the conditions of background justice be preserved internationally and across generations[34] and thus that the basic structure of liberal societies be protected from threats of other countries and/or from previous generations.[35] If there is currently no institutional structure to tackle a problem of background justice, appropriate institutions should be *established* and provided with the effective regulatory power to maintain just background conditions. These new institutions need not be as rich and complex as the basic institutions of a domestic society; nor do they implement the same principles of justice.[36]

As applied to climate change, this international, intergenerational principle of background justice requires peoples to bring its negative impacts under control, so that no society's just or decent basic structure is under the threat of destabilization. Let me call this magnitude of the damages from climate change *the stabilization level*, the level at which there is no realistic possibility that extreme weather events, sea level rise, and so on destabilize liberal peoples and thus undermine the stability for the right reasons of the Society of Peoples.

[34]Rawls assumes that a society exists 'in perpetuity: it produces and reproduces itself and its institutions and culture over generations and there is no time at which it is expected to wind up its affairs' (PL 2005, 18).

[35]A liberal society's just basic structure can be threatened by international factors such as war, military interventions, or an uncontrollable, large-scale influx of immigrants/refugees. In my 'A Stability Interpretation of Rawls's *The Law of Peoples*', I have argued that protecting liberal societies from international threats and making them more stable is an underlying but central role of Rawls's principles of international justice. If my stability interpretation is correct, this new principle of international, intergenerational justice plays basically the same role as Rawls's own principles of international justice.

[36]In this paragraph, I am indebted to Ronzoni, Miriam. 2009. "The Global Order: A Case of Background Injustice? A Practice-Dependent Account." *Philosophy and Public Affairs* 37(3):229–256.

There are several ways in which peoples can reduce the negative impacts of climate change and discharge this obligation. For one, they can reduce their GHG emissions. Or they can reduce the concentrations of GHGs in the atmosphere by increasing natural sinks of GHGs (e.g. afforestation) or capturing GHGs from the air by chemical engineering.[37] Along with these mitigation measures that reduce the rate and magnitude of climate change, peoples can take adaptive measures to reduce or avoid the damages from given weather/climate events (e.g. relocation, coastal protection, and improvement in water management). Which forms of mitigation, adaptation, and their combinations can effectively achieve the stabilization level depend on myriads of factors including local environmental conditions, industrial structure, available technologies, and sociocultural lifestyles. The new principle of background justice does not decide between them, that is, it does not provide concrete prescriptions for its institutional implementation, *provided that the institution guarantees each people access to the energy it needs to maintain its basic structure*. This proviso calls for some explanation.

Basic liberties, opportunities, and income/wealth are primary goods that free and equal citizens need in order to achieve a wide range of ends, whatever they happen to be. Similarly, energy is an all-purpose means for a people to maintain a basic structure, whatever institutional form it takes. A just basic structure is, as has been pointed out above, indispensable in protecting the fundamental interests of a liberal people. A liberal (or decent) people needs the amount of energy with which it can maintain its just (or decent) basic institutions. The new principle of background justice is there to preserve the environmental conditions under which well-ordered peoples can maintain just or decent basic structures over generations, so the institutions that realize the principle should enable peoples to have the energy that they need to maintain just or decent basic institutions.

It is worth noting that the mitigation and/or adaptation measures such that the negative impacts of climate change are expected not to exceed the stabilization level and peoples have access to the energy they need to maintain their basic structure is distinct from what maximizes the aggregate global welfare over time. The new principle of background justice does not require peoples to mitigate and/or adapt for global welfare maximization. Not only is it difficult to measure and aggregate welfare between countries, but, more important, well-ordered peoples do not accept the principle of total or average utility in international relations (TJ 1971/1999, 320–325/281–285; LP 1999, 40). Of course, peoples might agree to respond to climate change, say by mitigation, more than is needed to achieve the stabilization level, if they regard the greater level of mitigation as mutually advantageous. As with a free international trading system and a central bank, Rawls's theory of international justice encourages and facilitates, but not requires, this voluntary cooperation.

[37]Another method of preventing anthropogenic GHG emissions from contributing to climate change is to reduce the amount of absorbed solar energy in the climate system (Solar Radiation Management by, for example, stratospheric aerosol injection and cloud brightening). Much more work seems to be required to understand the costs, benefits, and in particular risks of catastrophes that threaten stability before we (if ever) find a safe, reliable method of SRM or other 'geoengineering'. IPCC, *Climate Change 2013: The Physical Science Basis*, 627–635.

An institutional implementation of the principle

It is beyond the goal of this paper to specify in detail – nor does the new principle of background justice itself determine in advance – how to design institutions to implement the international, intergenerational principle. Still, let me consider a way in which the principle can be institutionalized, if only in outline, to illustrate how its international, intergenerational character is to be realized.

Many scientific studies seem to indicate that the total net cumulative emissions of CO_2 largely determine the global mean surface temperature increase and the severity of climate change. Then, in order to limit global warming to a given temperature target, cumulative CO_2 emissions from all anthropogenic sources need to be capped to a specific amount.[38] For example, limiting warming to below 2°C relative to pre-industrial levels would require substantial emissions reductions over the next few decades and near zero emissions of CO_2 by the end of the century.[39] This suggests that, in order to achieve the stabilization level, peoples cannot let global energy production continue to depend on fossil fuels. In order to provide the necessary energy access, they should reduce the carbon intensity of the world's energy supply and make alternative energy sources available at affordable prices. The development and adoption of carbon-free energy production technologies would incur considerable costs and the burden should be shared fairly among all peoples. It might help to establish an international climate fund that finances the decarbonization. Each people should contribute its fair share – presumably, other things being equal, in proportion to its energy use – to the fund. Decarbonizing the world's energy system will probably be a long process, so it may be intergenerationally equitable for peoples to spare their contribution over several generations. Part of the fund may be better spent in helping vulnerable peoples adapt to the harmful effects of climate change. The internationally pooled fund from one generation should be reserved and invested until the effects of climate change that the generation has caused set in – possibly after several generations – and then administered not to the peoples that made larger contributions to the fund but to those that suffer from climate change. It is not that each people or each generation keeps its own revenue and uses it for its own adaptation. The climate fund is shared among nations and across generations.

What is the significance of this extension of Rawls's theory of justice?

I admit that even if my proposed principle succeeds in picking up the slack Rawls left, we cannot directly read off a blueprint for a comprehensive climate change policy in the real-world from his theory of justice. It is not simply because I have not specified how to implement this new principle of background justice in detail.

[38]This amount of CO_2 that can be emitted into the atmosphere for a given temperature target is sometimes called the 'carbon budget'. See IPCC, *Climate Change 2013: The Physical Science Basis*, 1112–1113; Frame, David, Adrian Macey, and Myles Allen. 2014. "Cumulative emissions and climate policy." *Nature Geoscience* 7 692–693; Rogelj, Joeri, Michiel Schaeffer, Pierre Friedlingstein, Nathan Gillett, Detlef van Vuuren, Keywan Riahi, Myles Allen and Reto Knutti 2016. "Differences between Carbon Budget Estimates Unravelled." *Nature Climate Change* 6:245–252.Thanks to an anonymous reviewer of *International Theory* for pointing this out to me

[39]IPCC. 2014. Climate Change 2014: Synthesis Report. In *Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by R. K. Pachauri and L. A. Meyer, 151. Geneva, Switzerland: IPCC.

More important, Rawls's ideal theory, by its very nature, does not immediately translate into concrete proposals about what we ought to do in our non-ideal world now. But I can still think of two values – one theoretical and the other practical – in this extension of Rawls's theory of justice.

First, it helps us see that the Society of Peoples, Rawls's ideal world, is based on the environmental conditions in which well-ordered peoples can maintain their basic structure over generations. We have taken these conditions for granted, but climate change makes us realize that we can ruin them. Indeed, if my background justice argument is sound, the realization of Rawls's principles of justice, without proper international and intergenerational cooperation, undermines the environmental conditions in which they can be realized. Rawls's theory of justice, as it stands, fails what Caney calls the 'sustainability condition'.[40] Rawls's theory of justice itself gives us a reason to supplement the theory.

This conclusion is, I think, theoretically interesting, and it is of normative significance not only to Rawlsians but also to many other people. The demands of Rawls's ideal, international/intergenerational principles of justice are relatively modest. Basically, they require that we respect the political independence of other countries and pass just basic institutions and international peace we inherit from the prior generation onto the next generation. Indeed, several political philosophers have objected that they are not demanding enough. In a sense, this paper has argued that those who believe that we owe at least what Rawls's ideal theory says we do to other countries and descendants have a reason to believe that our failure to address climate change is a grave wrong, one that is on a par not with stinginess in foreign aid but rather with interventions that violate the sovereignty of other nations. Rawls's ideal theory, if properly extended, clearly gives us, if not a detailed roadmap, a direction toward which our climate change policy should aim.

Acknowledgement. An earlier version of this paper was presented at the political theory workshops of Stanford University and Seoul National University. I would like to thank the audiences on those occasions, including Joshua Cohen and Debra Satz, for discussions and criticisms. I am grateful to Rob Barlow, Will Braynen, Mark Budolfson, Eamonn Callan, Chiara Cordelli, Joseph Harper, Sarah Hannan, Hugh Lazenby, Alison McQueen, Thomas Nagel, Govind Persad, and especially Samuel Scheffler for helpful comments on earlier drafts of this material. I also owe special thanks to anonymous reviewers of International Theory for their insightful comments that greatly helped me improve this paper.

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Cite this article: Kim, H. 2019. An extension of Rawls's theory of justice for climate change. International Theory 11: 160–181, doi:10.1017/S1752971918000271

[40]Caney, Simon. 2012. "Just Emissions." *Philosophy and Public Affairs* 40(4):255–300, 293–295