Climate Change Reparations and the Law and Practice of State Responsibility

It was argued elsewhere that industrial states were legally responsible for interfering with the climate system by failing to prevent excessive greenhouse gas emissions. This article determines the international legal principles relevant to the remedial obligations of industrial states. It assumes that climate change reparations should aim first at providing a signal for the cessation of the wrongful act (i.e. incentivizing climate change mitigation) rather than addressing the injury. A review of state practice in different fields suggests the existence of relevant exceptions to the principle of full reparation. These exceptions relate to the financial capacity of responsible states, the indirect nature of the injury, considerations of "culpability," and the limitations of collective responsibility as "rough" justice. Accordingly, it is suggested that climate change reparations should be limited to partial compensation and symbolic measures of satisfaction prone to incentivize climate change mitigation.

Climate change is possibly the greatest harm ever caused by human beings to other human beings – possibly threatening our very existence as a civilization and as a species.[1] In recent years, international negotiations, advocacy and academic research have taken a renewed interest in the relevance of the concept of responsibility in this context, specifically in the relation between industrial states and the developing states most vulnerable to climate change.[2] In particular, discussions on possible "means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change" were initiated by the 2007 "Bali Action Plan"[3]; the Warsaw International Mechanism for Loss and Damage was established in 2014.[4] As the quest of a comprehensive climate change agreement (where all states would commit to specific commitments) gives a stronger bargaining power to developing states, the demand of the populations most affected by climate change but least responsible for causing it can no longer remain unheard.

International law scholarship has certainly a role to play in this debate. Because international law is essentially a "promise of justice,"[5] the moral dimensions of climate change cannot be ignored – in particular as those nations and individuals who benefit the least from industrialisation and development are often the most affected by the adverse impacts of climate change.[6] Beyond the scope of positive rules, there exist general principles underpinning international law, such as the principle of responsibility and some principles governing remedial obligations, from which legitimate expectations arise as to the outcomes of political negotiations, and which therefore should not arbitrarily be disregarded when responses to new issues such as climate change are being imagined. Only if it appears broadly just to most peoples around the globe can a global climate agreement successfully trigger the costly

[1] See generally Intergovernmental Panel on Climate Change ["IPCC"], *Climate Change 2013: The Physical Science Basis, Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2014).
[2] See Benoit Mayer, "Conceiving the Rationale for International Climate Law" (forthcoming) Climatic Change.
[3] Decision 1/CP.13 [Thirteen decision of the first conference of the parties to the UN Framework Convention on Climate Change], "Bali Action Plan" (2007), para. (1)(c)(iii).
[4] Decision 2/CP.19, "Warsaw international mechanism for loss and damage associated with climate change impacts" (2014), para. 1 ["Warsaw international mechanism"].
[5] Martti Koskenniemi, "What Is International Law for?" in Malcolm D. Evans, ed., *International Law* (Oxford: Oxford University Press, 2010), 32 at 32.
[6] See generally International Panel on Climate Change, *Climate Change 2014: Impacts, Adaptation, and Vulnerability: Volume 1, Global and Sectoral Aspects, Working Group II Contribution to the IPCC Fifth Assessment Report* (Cambridge: Cambridge University Press, 2014).

measures necessary to mitigate climate change,[7] and international law, despite all its flaws and biases, is certainly the most consensual expression of broadly accepted moral principles.

Besides, the failure of states to agree on climate change responses acquaint with general principles of international law would significantly impede the promotion of the rule of law in international relations and trust in international institutions, as it would demonstrate that some (powerful) states can get away with knowingly causing the greatest harm to global commons. As the adverse impacts of climate change are becoming more discernible and far-reaching, a constant haggling of national mitigation commitments would increasingly become an embarrassment for international law – showing just too clearly the incapacity of international law to fulfil its promise of justice when the interest of powerful industrial nations are at stakes.

An argument has been made elsewhere[8] according to which industrial states (in particular)[9] are responsible, under international law, for their failure to prevent excessive greenhouse gas (GHG) emissions within their jurisdiction. This argument can be based on a breach of the "no harm" principle, from which arises an obligation for states to prevent activities within their jurisdiction that cause cross-boundary environmental damage.[10] The injury caused by this internationally wrongful act is most persuasively conceived of as an injury to the global atmospheric commons – or, in the terms of the UN Framework Convention on Climate Change, as a "dangerous anthropogenic interference with the climate system."[11] The International Law Commission recognized that breaches to obligations owned to the international community as

[7] This is one of the main conclusions of a workshop convened by the secretariat of the UN Framework Convention on Climate Change (UNFCCC) in 2010. See UNFCCC, "Report on the Workshop on Equitable Access to Sustainable Development," FCCC/AWGLCA/2012/INF.3/Rev.1 (2012), para.71.

[8] Benoit Mayer, "State Responsibility and Climate Change Governance: A Light through the Storm" (2014) 13:3 Chinese JIL 539. See also Christina Voigt, "State Responsibility for Climate Change Damages" (2008) 77:1 Nordic JIL 1; Roda Verheyen and Peter Roderick, "Beyond Adaptation: The Legal Duty to Pay Compensation for Climate Change Damage" (2008, WWF UK).

[9] Emerging economies such as China or Brazil account for steadily increasing GHG emissions, although per capita emissions in these countries remain currently several times inferior to the per capita emissions of the United States, Australia, Canada or the European Union. The gap is wider when stocks of historical per capita emissions are considered. Data on greenhouse gas emissions per country can be accessed for instance from the World Resources Institute's Climate Data Explorer, available at http://cait2.wri.org

[10] See in particular *Trail Smelter (United States v. Canada)*, Decision of 11 March 1941, III Reports of International Arbitral Awards 1907 at 1965; *Declaration of the United Nations Conference on the Human Environment*, UN Doc A/Conf.48/14/Rev.1 (1972), principle 21 ["Stockholm Declaration"]; Rio Declaration on Environment and Development, UN Doc A/CONF.151/26 (vol. I) (1992), principle 2 ["Rio Declaration"]; *The Legality of the Threat or Use of Nuclear Weapons*, advisory opinion, [1996] I.C.J. Rep. 226 at para. 29; *Iron Rhine arbitration (Belgium v. Netherlands)*, Decision of 24 May 2005, XXVII Reports of International Arbitral Awards 35, at para. 222; *Pulp Mills on the river Uruguay (Argentina v. Uruguay)*, [2010] I.C.J. Rep. 14 at para. 101; Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (Cambridge: Cambridge University Press, 2012) at 196. Alternative arguments could invoke the failure of a state to comply with its obligations under diverse relevant treaties, including not only the *UN Framework Convention on Climate Change* (14 June 1992, 1771 U.N.T.S. 107, entered into force 21 March 1994 ["UNFCCC"]) and the *Kyoto Protocol to the UNFCCC* (11 December 1997, 2303 U.N.T.S.148, entered into force 16 February 2005 ["Kyoto Protocol"]), but also, among others: the *Montreal Protocol on Substances that Deplete the Ozone Layer* (16 September 1987, 1522 U.N.T.S.3, entered into force 1 January 1989); the *Convention on Long-Range Trans-boundary Air Pollution* (13 November 1979, 1302 U.N.T.S.217, entered into force 16 March 1983) and its eight protocols; the *ASEAN Agreement on Trans-boundary Haze Pollution* (10 June 2002, entered into force 25 November 2003); and the *UN Convention on the Law of the Sea* (10 December 1982, 1833 U.N.T.S.3, entered into force 16 November 1994), part XII.

[11] UNFCCC, *supra* note 10 art. 2. See also the second recital of the UNFCCC, "[a]cknowledging that change in the Earth's climate and its adverse effects are a common concern of humankind."

a whole could also give rise to an obligation to pay reparations.[12] Although there is no clear precedent on this, it seems possible to assume, in line with the state-centred nature of international law, that compensation should accordingly be paid to the states representing the populations most affected by the injury caused to the global commons.[13]

However, one cannot ignore the formidable institutional and political obstacles to the implementation of this legal argument.[14] A jurisdictional finding of the responsibility of industrial states is unlikely because of the consensual nature of international adjudication,[15] the geopolitical settings whereby the states most affected by climate change are also those with the least diplomatic power,[16] and the fragmentation of responsibility between multiple industrial states.[17] Even if the responsibility of industrial states, or of some of them, was asserted in a contentious case or (more likely) through an advisory opinion, absent diplomatic power and effective counter-measures on the side of those most affected by climate change, compliance would entirely depend on the goodwill of political leaders within industrial states.

More fundamentally, political hurdles impede our admission of the responsibility of industrial states for climate change. While climate scepticism is over-represented in the media,[18] the very abstract concept of an alteration of the probability of particular weather patterns (rather than the occurrence of a particular weather event) is not easily communicable in the sort of simple political discourses through which liberal democracies make collective

[12] *Draft Articles on the Responsibility of States for internationally wrongful acts*, UNGA Res. 56/8 (2001) ["Draft Articles on State Responsibility"], art. 42(2) and commentary under art. 42, para. 12 ("In case of breaches of obligations under article 48, it may well be that there is no State which is individually injured by the breach, yet it is highly desirable that some State or States be in a position to claim reparation, in particular restitution.") In the context of climate change, restitution would be materially impossible as it would involve, at least, to remove phenomenal quantities of GHG from the atmosphere.

[13] See Mayer, *supra* note 8, paras. 42-43; Benoit Mayer, "Whose 'Loss and Damage'? Promoting the Agency of Beneficiary States" (2014) 4:3-4 Climate Law 267.

[14] See Mayer, *supra* note 8, paras. 27-31 and 52-63.

[15] See e.g. Statute of the International Court of Justice, 26 June 1945, [1946] UKTS 67 (entered into force 24 October 1945), art. 36.

[16] Political pressure has already been applied on developing states against legitimate calls for responsibility. For instance, Palau (a small island developing state with a population of about 20.000), which initiated a campaign for the UN General Assembly to request an advisory opinion from the ICJ, had to back out when the United States threatened to interrupt the provision of development aid. See e.g. Stuart Beck and Elizabeth Burleson, "Inside the System, Outside the Box: Palau's Pursuit of Climate Justice and Security at the United Nations" (2014) 3 Transnational Environmental Law 17 at 26. Likewise, Tuvalu, another small island developing state (population 10.000) highly dependent on international aid, has not carried out its repeated threats to seek the responsibility of Australia or the United States before an international jurisdiction.

[17] A decision on an apportionment of responsibility, in a contentious case, could be precluded by the *Monetary Gold* principle, in application of which the ICJ has refused to determine the responsibility of a state if, in order to do so, "it would have to rule, as a prerequisite, on the lawfulness" of the conduct of a third state. *East Timor (Portugal v. Australia)*, [1995] I.C.J. Rep. 90 at para.35; *Monetary Gold Removed from Rome in 1943 (Italy v. France)*, [1954] I.C.J. Rep. 19 at 32. See also, however, *Certain Phosphate Lands in Nauru (Nauru v. Australia)*, Judgment of 26 June 1992 on preliminary objections, [1992] I.C.C. Rep. 240 at 259-260.

[18] See Maxwell Boykoff and Jules Boykoff, "Climate Change and Journalistic Norms: A Case-Study of US Mass-Media Coverage" (2007) 38 Geoforum 1190 at 1190, observing the media's frequent "adherence to first-order journalistic norms – personalization, dramatization and novelty." See also, generally, Maxwell Boykoff and Jules Boykoff, "Balance as Bias: Global Warming and the US Prestige Press" (2004) 14 Global Environmental Change 133.

decisions. Because it "lacks a sense of urgency,"[19] climate change, as "creeping normalcy,"[20] has not triggered wide mobilization in support of immediate action.

This article questions the nature of climate change reparations based on customary international law. It contends that climate change reparations need to be designed with a particular sensitivity to the unprecedented nature of climate change, but that it should also take stock of relevant analogies with state practice in different fields. Accordingly, it opposes a strict application of certain provisions of the law of state responsibility as codified by the International Law Commission. Whereas article 31(1) of the Draft Articles on State Responsibility assesses that a "responsible State is under an obligation to make full reparation for the injury caused by the international wrongful act,"[21] this article argues that climate change reparations need not (and, arguably, cannot) be "full" reparations.

Thus, the argument of this article is two-faceted. On the one hand, it develops new reflections on climate change reparations which, hopefully, will resonate with ongoing debates on "loss and damage" associated with climate change impacts in developing countries and with other discussions within the climate regime, as part of a wider project of highlighting the long-overseen relevance of international law to the governance of climate change. On the other hand, based on the example of climate change reparations, it suggests a reflection on the nature of remedial obligations, involving a criticism of the general character of article 31(1) of the Draft Articles on State Responsibility, by showing that states have sometimes consensually rejected full reparation on the basis of certain equitable considerations.

The concept of "climate change reparations" used in this article hints at an analogy with war reparations, a field where, ever since the devastating experience of the Versailles treaty,[22] it appeared that full reparation could be politically toxic. Beyond war reparations or mass atrocities more generally, states have also agreed to less-than-full reparations in the settlement of trade disputes or in relation to the takings of foreign properties, as well as when loss and damage arise from hazardous activities. The relevance of these different fields cannot be dismissed simply on the ground that they would constitute a *lex specialis* derogating to the general law of state responsibility: the general practice of states in these fields reflects the consistent recognition of certain transversal justifications for a diminution of reparation.

Consistently, in the context of climate change, a diminution of industrial states' remedial obligations could be justified on the basis of the limited financial capacity of the responsible states, the indirect nature of the injury, the significant disproportion between the injury and the wrongfulness of the act, and the limitation of collective responsibility as a form of "rough" justice in cases of large injuries. More pragmatically, a prompt admission of responsibility accompanied with a limited payment of reparations would create some political impetus and facilitate efforts to cease excessive wrongful acts, hopefully before current, growing GHG emissions trigger an irremediable and cataclysmic change in our climate.

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[19] Anthony Leiserowitz, "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values" (2006) 77 Climatic Change 45 at 64. See also Elke Weber, "Experience-Based and Description-Based Perceptions of Long-Term Risk: Why Global Warming Does Not Scare Us (Yet)" (2006) 77 Climatic Change 103; Harry Collins and Robert Evans, *Rethinking Expertise* (Chicago: University of Chicago Press, 2007) at 2 (discussing "science's … short-term political impotence").

[20] Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Penguin, 2011) at 425.

[21] Draft Articles on State Responsibility, *supra* note 12, art. 31(1).

[22] Versailles treaty (28 June 1919, [1919] UKTS 4 (Cmd 153), entered into force 20 January 1920) art. 232.

The remainder article is structured as follows. Section II provides a general overview of current debates on climate change reparations, as the political context is useful in conceiving the rationale for, hence the nature of climate change reparations. Section III retraces the timid recognition of less-than-full reparation across different fields of international law, with regard to war reparations, trade disputes, expropriations, and hazardous activities. Section IV identifies systematically four justifications for a diminution of climate change reparations by analogy with the general practice of states in these different fields. Section V ponders the implications of less-than-full climate change reparations for climate change governance as well as international law in general. Section VI concludes.

I. SITUATING CLIMATE CHANGE REPARATIONS

In order to situate climate change reparations in the context of climate change negotiations, this section introduces general reflections on climate change and responsibility (A), recounts the recent breakthrough of the concept of "loss and damage" (B), before defining the rationale for climate change reparations (C).

A. Climate Change and Responsibility

The idea of a responsibility of climate change is certainly not new. Its conceptual roots can be drawn to the Roman maxim "*sic utere tuo ut alienum non laedas*" ("Use your own property in such a way that you do not injure other people's"), to which domestic provisions on nuisance (in common law) or neighbourhood disturbances (in civil law) relate closely. The *Trail Smelter* arbitral award stated that, "under the principle of international law … no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence."[23] The 1972 "Stockholm" Declaration of the United Nations Conference on the Human Environment, the 1992 "Rio" Declaration on Environment and Development, as well as number of other international instruments, jurisdictional decisions and teachings of the most highly qualified publicists have confirmed that states have an obligation to ensure that activities within their jurisdiction do not cause damage beyond this jurisdiction (no-harm principle).[24]

Adopted at the "Earth summit" in Rio de Janeiro in June 1992, the *UN Framework Convention on Climate Change* recalled the no-harm principle,[25] noting also that "the largest share of historical and current global GHG emissions has originated in developed countries."[26] However, this preambular reference to the no-harm principle was obscured by the recognition of a new and somewhat mysterious principle of "common but differentiated responsibilities,"[27] in application of which "the developed country Parties should take the lead in combating climate change and the adverse effects thereof."[28] The nature of the principle of common but differentiated responsibilities remained unclear: while it may seem to hint at the causal responsibility (as an application of the no-harm principle), developed states have argued that it only "highlights the special leadership role of developed countries, based on [their] industrial development, [their] experience with environmental protection policies and actions, and [their]

[23] *Trail Smelter*, *supra* note 10.
[24] See generally the sources cited *supra* note 10.
[25] UNFCCC, *supra* note 10, 9th recital.
[26] *Ibid.*, 4th recital.
[27] *Ibid.*, 7th recital, art. 3(1) and art. 4(1).
[28] *Ibid.*, art. 3(1).

wealth, technical expertise and capabilities."[29] As a reflection of the limits of this constructive ambiguity, the *UNFCCC* only contained very limited provisions on North-South finance.[30] Over the last two decades, climate finance has invariably concentrated on climate change mitigation (i.e. the limitation and reduction of GHG emissions and the enhancement of GHG sinks and reservoirs) rather than adaptation (i.e. adjustments in response the effects or impacts of climate change).[31] Most of the burden of adapting to the adverse impacts of climate change has remained on the states directly affected, in particular developing ones that had only marginally benefited from industrialization.[32]

Overall, words such as "reparation" and "compensation" have remained political non-starters for the representatives of industrial nations,[33] which have engaged in a systematic effort at derailing any principled discussion of the ethical or legal dimensions of climate change. Developed states have thus rejected any discussion on the principles that should guide climate governance, from the early negotiations of the UNFCCC,[34] to the proposal of India to initiate a dialogue on equity in 2011.[35] The same year, the United States used the leverage of its international aid to development and blocked the campaign of Palau, at the UN General Assembly, to request an advisory opinion of the International Court of Justice on the legal aspects of climate change.[36]

Likewise, from 2011 to 2013, developed states representatives at the Sixth Committee of the UN General Assembly fiercely opposed the inclusion of a topic on the "protection of the atmosphere" within the long-term work programme of the International Law Commission,[37] on the (surprising) ground that the existing political process of negotiations were "relatively effective,"[38] had "provided sufficient general guidance to States,"[39] and "was already well-served by established legal arrangements."[40] The ILC could only initiate the study of the topic after a costly political compromise that excluded virtually any possible substance from its consideration: it was not only prevented from interfering with negotiations on climate change,

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[29] Written statement of the United States on principle 2 of the Rio Declaration, in *UN Conference on Environment and Development*, UN Doc. A/CONF.151/26 vol. II (1992) at 17-18.

[30] UNFCCC, *supra* note 10, art. 4(4): "The developed country Parties and other developed Parties included in annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects." This language is different from "meeting *the* costs of adaptation."

[31] See in particular Barbara Buchner et al., *Global Landscape of Climate Finance 2014* (San Francisco: Climate Policy Initiative, 2014); UNFCCC Standing Committee on Finance, *2014 Biennial Assessment and Overview of Climate Finance Flows* (Bonn: UNFCCC, 2014).

[32] See generally UNEP, *The Adaptation Gap Report 2014: A Preliminary Assessment Report* (Nairobi: UNEP, 2014).

[33] See e.g. Koko Warner and Sumaya Ahmed Zakieldeen, *Loss and Damage Due to Climate Change: An Overview of the UNFCCC Negotiations* (Oxford: European Capacity Building Initiative, 2012) at 3.

[34] See e.g. Daniel Bodansky, "The United Nations Framework Convention on Climate Change: A Commentary" (1993) 18 Yale Journal of International Law 451 at 501.

[35] See UNFCCC, Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011, Part One: Proceedings, FCCC/CP/2011/9, paras.13-18.

[36] Beck and Burleson, *supra* note 16 at 26.

[37] International Law Commission, Report of the Sixty-third session (2011), para.365 and Annex II, Protection of the atmosphere, by Mr. Shinya Murase.

[38] Statement of Mr. Simonoff (United States), in the Summary Records of the 20th meeting of the Sixth Committee of the UN General Assembly in its 66th session, UN Doc. A/C.6/66/SR.20 (2011) at para. 15.

[39] Statement of Mr. Buchwald (United States), in the Summary Records of the 19th meeting of the Sixth Committee of the UN General Assembly in its 67th session, UN Doc. A/C.6/67/SR.19 (2012) at para. 118.

[40] Statement of Mr. Macleod (United Kingdom), in the Summary Records of the 18th meeting of the Sixth Committee of the UN General Assembly in its 68th session, UN Doc. A/C.6/68/SR.18 (2013) at para. 21.

but also from dealing with the "liability of States and their nationals, the polluter-pays principle, the precautionary principle, common but differentiated responsibilities, and the transfer of funds and technology to developing countries, including intellectual property rights."[41] By evading any substantive discussion within the ILC, developed states ensured that climate change governance would follow a political logic where power dominates, rather than the guidance of general principles of law and justice.

B. The Recent Breakthrough of the Concept of Loss and Damage

Despite the hostility of developed states to any discussion of the ethical or legal aspects of climate change, arguments for climate change responsibility have repeatedly been made by the representatives of the most vulnerable states. In 1991, the Alliance of Small Island States proposed to the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, the establishment of an international insurance mechanism whose revenues would be drawn "from mandatory sources" in developed states, and which would be used "to compensate the most vulnerable small island and low-lying coastal developing countries."[42] While this submission was limited to "loss and damage resulting from sea level rise,"[43] it recognized that similar mechanisms could eventually be established to cover other adverse impacts that could be attributed to climate change.[44] The proposal was given little consideration at the time because, as an observer noted, the most vulnerable states "had [little] to offer the developed world in exchange for financial transfers."[45]

The concept of loss and damage came back to the fore in recent years, as developed states were increasingly ready to make some concessions in exchange of mitigation commitments on the part of emerging economies.[46] In 2007, as part of an "enhanced action on adaptation," the Bali Action Plan invited consideration of "means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change."[47] The discussions initially took place within the AWG-LCA,[48]

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[41] Shinya Murase, *First report on the protection of the atmosphere*, UN Doc. A/CN.4/667 (2014) at para.5. This compromise also provides that "[t]he outcome of the work on the topic will be draft guidelines that do not seek to impose on current treaty regimes legal rules or legal principles not already contained therein." Mr. Sinhaseni (Thailand) questioned the 6th Committee: "what would be left for the Commission to work on that might be of use to the international community?" See Summary Records of the 19th meeting of the Sixth Committee of the UN General Assembly in its 68th session, UN Doc. A/C.6/68/SR.19 (2013) at para. 27.

[42] Submission by Vanuatu on behalf of AOSIS, "Draft annex relating to Article 23 (Insurance) for inclusion in the revised single text on elements relating to mechanisms (A/AC.237/WG.II/Misc.13) submitted by the Co-Chairmen of Working Group II" (1991), reproduced in Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, 4th session, "Elements relating to mechanisms", UN Doc. A/AC.237/WG.II/CRP.8 (1991) 2 at 2, para. 1(5).

[43] *Ibid.*

[44] *Ibid.*, at 7 (para. a) and 9 (para. i).

[45] Bodansky, *supra* note 34 at 528.

[46] A non-negligible, although purely discursive concession was made when developed states agreed to a text attributing their leading role, resulting from the principle of common but differentiated responsibilities, "to [their] historical responsibility" for climate change. Decision 1/CP.16, "The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention" (2010), 2nd recital before para. 36 ["Cancun Agreements"]. The UNFCCC had noted the historical contribution of developed nations, but it had not made any explicit link with the principle of common but differentiated responsibilities.

[47] "Bali Action Plan," *supra* note 3 at para. 1(c)(iii). The provision in a preliminary draft extended to all "vulnerable developing countries." See Draft decision 1/CP.13: Consolidated text prepared by the co-facilitators on agenda item 4 (Report of the co-facilitators of the dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention), FCCC/CP/2007/CRP.1 (2007), at para. 1(c)(iii).

[48] "Bali Action Plan," *supra* note 3 at para. 1 (chapeau).

where the concept soon appeared to be side-lined in the arduous negotiations focusing for the greatest part on climate change mitigation. Consistently with their opposition to a recognition of responsibility, some developed states attempted to "avoid discussions related to proposals around compensation for loss and damage"[49] by proposing an alternative focus on risk management, in particular through risk-sharing mechanisms and disaster-risk-reduction strategies.

After three years and little progress, the 2010 Cancun Agreements established a "work programme," assigned to the Subsidiary Body for Implementation, in order, again, "to consider, including through workshops and expert meetings, as appropriate, approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change."[50] The Cancun Agreements also clarified that this work programme would cover "the impacts related to extreme weather events and slow onset events,"[51] such as "sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification."[52] The following year, the Durban conference defined three thematic areas for this work programme in order to identify possible measures to be taken under the Convention.[53]

While developed states continued to oppose any reference to "redress" or "compensation,"[54] they came slowly to admit that addressing loss and damage requires some financial measures. The 18th Conference of the Parties to the UNFCCC in Doha in 2012 agreed that negotiations on loss and damage under the Convention should be concerned, among others, with "enhancing action and support, including finance, technology and capacity building."[55] The following years, the 19th Conference of the Parties established the Warsaw International Mechanism for loss and damage[56] and, in the same decision, it "request[ed] developed country Parties to provide developing country Parties with finance, technology and capacity-building."[57] More recently, financial matters were listed among the questions to deal with through a two-year workplan of the Warsaw international mechanism approved by the 20th Conference of the

[49] Warner and Zakieldeen, *supra* note 33 at 4.
[50] Cancun Agreements, *supra* note 46, para. 26. The work programme was conducted within the Subsidiary Body for Implementation ["SBI"].
[51] *Ibid.*, para. 25.
[52] *Ibid.*, para. 25, note 3.
[53] UNFCCC, Decision 7/CP.7, "Funding under the Convention" (2001). These thematic areas are: (1) "Assessing the risk of loss and damage … and the current knowledge of the same," (2) developing "a range of approaches to address loss and damage," and (3) defining "the role of the Convention."
[54] A draft decision text adopted at the 37th session of the SBI included multiple references to compensation. See UNFCCC SBI, "Approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change to enhance adaptive capacity, Draft conclusions proposed by the Chair," FCCC/SBI/2012/L.44 (2012), Annex. Yet, Decision 3/CP.18, adopted on the basis of this draft, contains no reference to compensation. See UNFCCC, Decision 3/CP.18, "Approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change to enhance adaptive capacity" (2012) ["Approaches to address loss and damage"]. Discussions on compensatory financial mechanisms remain generally side-lined in the work programme on loss and damage. See e.g. "Report on the expert meeting to consider future needs, including capacity needs associated with possible approaches to address slow onset events," Note by the Secretariat, FCCC/SBI/2013/INF.14 (16 October 2013), where a compensatory financial mechanism is addressed in no more than one single sub-paragraph (para. 32(b)).
[55] Approaches to address loss and damage, *supra* note 54, para. 5(c).
[56] Warsaw international mechanism, *supra* note 3, para. 1.
[57] *Ibid.*, para. 14.

Parties (Lima, 2014).[58] The Warsaw international mechanism is set to be reviewed at the 22nd Conference of the Parties in 2016.[59]

Like the principle of common but differentiated responsibilities, the concept of loss and damage could only break through climate change negotiations on the basis of a constructive ambiguity. On the one hand, some developing countries have promoted the concept of loss and damage on the agenda of climate change negotiations in order to raise awareness of the adverse consequences of climate change in developing countries and to call for some form of reparation. On the other hand, developed states have generally tried to confine the discussion on ways to reduce or avoid loss and damage, for instance through disaster risk reduction.[60] As such, the vision of loss and damage promoted by developed states essentially replicates ongoing discussions on climate change adaptation with, at most, an increased emphasis on building resilience.[61]

C. The Rationale for Climate Change Reparations

Claims for the responsibility of industrial nations for causing climate change have often been denounced as the "fanatic" attitude of fund-thirsty nations[62] or as attempts to solve global inequalities instead of "just" addressing climate change.[63] Yet, instead of an aim of its own, the advocates of climate change reparations often promote climate change reparations as an instrument to foster climate change mitigation and, perhaps, adaptation. In other words, the proponents of climate change reparations do not wish for huge financial penalties as compensation for the harm already inflicted to them as much as they desire that relevant measures be taken promptly to cease the infliction of similar harms.

Climate change reparations could help foster efforts to mitigate climate change in different ways. By internalizing the negative externalities of GHG emissions in application of the nascent polluter pays principle,[64] they would incentivize a reduction of GHG emissions in

[58] "Initial two-year workplan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts," in Annex II of the Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, FCCC/SB/2014/4 (2014).

[59] Warsaw international mechanism, *supra* note 3, paras. 9 and 10.

[60] See generally Warner and Zakieldeen, *supra* note 33.

[61] Thus, developed states have sometimes criticized the concept of loss and damage as duplicative of existing efforts on climate change adaptation. See for instance Submission of Norway, "Work programme on approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change to enhance adaptive capacity" (2 October 2012), reproduced as Paper 2 in UNFCCC Secretariat, "Views and information from Parties and relevant organizations on the possible elements to be included in the recommendations on loss and damage in accordance with decision 1/CP.16," FCCC/SBI/2012/MISC.14, 13, at 14. While the Bali Action Plan (*supra* note 3) and the Cancun Agreements (*supra* note 46) included loss and damage as part of "enhanced action on adaptation," developing states have constantly claimed that loss and damage should constitute a third pillar beyond mitigation and adaptation. See e.g. "Warsaw establishes international mechanism for loss and damage" (Nov.-Dec. 2013) 279/280 *Third World Resurgence* 15-18.

[62] See for instance UN Senate, 105th Cong., 143 Cong. Rec. S8117 (25 July 1997) (debates on the adoption of the Byrd-Hagel resolution).

[63] Thus, Posner and Weisbach criticize those who "treat climate negotiations as an opportunity to solve some of the world's most serious problems – the admittedly unfair distribution of wealth across northern and southern countries, the lingering harms of the legacy of colonialism, and so forth." See Eric A Posner and David A Weisbach, *Climate Change Justice* (Princeton: Princeton University Press, 2010) at 5.

[64] The polluter-pays principle is not recognized as such in international law as it is in certain domestic laws. See for instance Sands and Peel, *supra* note 10 at 228-233.

industrial nations. Perhaps more importantly than this economic incentive, climate change reparations would constitute a political impetus in favour of climate change mitigation. They would in particular build domestic political support for adequate climate change policies by providing an assessment of the overall impacts of climate change and by informing domestic constituencies. Although advocacy for climate change reparations will not constrain any state to any course of action, it establishes solid cognitive bases on which ethical discourses for climate change mitigation could be constructed. Perhaps most importantly, climate change reparations also need to re-affirm the rule of law by sanctioning the breach of an international obligation, in order to foster compliance in international relations. By contrast, the purely restitutive function of climate change reparations – as an attempt to repair an actual injury – is arguably not, and should not be the first priority of its advocates.

Climate change reparations need to be designed so that they can fulfil their instrumental and somewhat pragmatic function of promoting climate change mitigation. In this regard, any demand for full reparation is an impediment to the argument for climate change reparation, as it is likely to trigger blank rejection on the part of industrial states. Most obviously, full reparation is unlikely to be politically acceptable on the part of industrial states. Full reparation could fuel political support to climate change denial, an easier stand for many economic lobbies and even industrial states' politicians when the stakes are simply too high to conceive any possible compromise. Even if it could be imposed, full reparation would risk to create animosity among nations and, in any case, to divert well-needed resources for climate change mitigation policies in industrial nations.

Most importantly, full reparation is not necessary in order to incentivize adequate climate change mitigation. Imposing reparations for past emissions will have little direct consequences on the present conduct of industrial states, except perhaps through diffuse deterrence. Full reparation is not necessary to constitute an appropriate incentive for climate change mitigation, not even regarding current GHG emissions. The theory of marginal utility suggests that what determines states conduct is not the mean cost imposed on all GHG emissions, but the *marginal* cost of additional GHG emissions – the sanction that would be imposed on that state for the last, avoidable unit of GHG emissions. In more concrete terms, this suggests that the most efficient system of reparations would consist in high sanctions on marginal emissions whose payment could be avoided by taking realistic measures within a given timeframe.[65]

II. THE TIMID RECOGNITION OF LESS-THAN-FULL REPARATION IN INTERNATIONAL LAW

Climate change is not the only situation where full reparation does not appear as an opportune settlement of claims for responsibility. Even though article 31(1) of the Draft Articles on State Responsibility affirms a general obligation of a responsible state to make full reparation, debates within the International Law Commission recognized the possibility of a diminution of reparations in certain situations (A). A brief review of state practice in several fields suggests elements of a recognition of less-than-full reparation in customary international law (B).

A. The position of the International Law Commission

Article 31 of the Draft Articles on State Responsibility asserts that a responsible State is under the obligation to "make full reparation for the injury caused by the internationally wrongful

[65] This suggests solutions similar to the "grandfathering" of GHG emissions rights.

act."[66] Provisions of the Draft Articles on State Responsibility exclude excessive forms of restitution[67] and satisfaction,[68] but they do not limit the obligation of a State to make full reparation, in particular through compensation. This clear and unqualified support for full reparation conceals a more lively debate, during the discussion of the topic by the International Law Commisson, about what constitutes a just and adequate remedy. In 1959 already, when the ILC was still focused on State responsibility in the context of the takings of foreign property, Special Rapporteur García Amador recognized "cases and situations in which compensation which does not cover the full value of the expropriated property must be regarded as valid and effective."[69] At the occasion of a more structured debate on secondary obligations in the mid-1990s, some ILC members contended that "insistence on full reparation could be fraught with consequences for developing nations,"[70] especially those with limited financial capacities. Igor Lukashuk argued that "[t]he sad experience of the Versailles settlement which had become one of the causes of the later war had shown that [full restitution] was often impossible and even undesirable," suggesting that "a system of partial restitution" could be preferable in certain circumstances.[71]

In accordance with such suggestions, in the document adopted in first reading in 1996, Draft Article 42(3) precluded measures of reparation that would "result in depriving the population of a State of its own means of subsistence,"[72] thus paraphrasing a provision of the International Covenant on Economic, Social and Cultural Rights.[73] In the Commentary, the ILC acknowledged this limitation as the application of "a legal principle of general application."[74] This provision, however, was deleted during the second reading. States, in their comments on the first reading, had viewed the phrasing of this provision as too vague, hence likely to create "avenues for abuses"[75] or a "pretext by the wrongdoing State to refuse full reparation."[76] Some States had however clearly supported certain limitations to the obligation to make full reparation, suggesting a more precise provision on the conditions for diminution of reparations instead of the mere deletion of Draft Article 42(3).[77]

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[66] Draft Articles on State Responsibility, *supra* note 12, 31

[67] See *ibid.*, art. 35(2), excluding restitution when it would "involve a burden out of all proportion to the benefit deriving from restitution instead of compensation."

[68] See *ibid.*, art. 37(3), excluding satisfaction when it would "be out of proportion to the injury" or if it would "take a form humiliating to the responsible State."

[69] F.V. Garcia-Amador, Fourth report on State Responsibility, in (1959) Yearbook of the International Law Commission, vol. II.1, at para. 89.

[70] Statement of S. Rao, in Summary Records of the 2314th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2314 (1993), at para. 78.

[71] Summary Records of the 2392th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2392 (1995), at para. 31 (using the word "restitution" in the general sense of "reparation"). See also the statement of C. Tomuschat, in *ibid.* at para. 37; statement of A. Mahiou, in Summary Records of the 2314th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2314 (1996), at para. 19; Summary Records of the 2454th meeting of the International Law Commission, UN Doc. A/CN.4/SR.1454 (1996), at para. 19.

[72] Draft Articles on the Responsibility of States for Internationally Wrongful Acts adopted in first reading, in (1996) Yearbook of the International Law Commission, vol. II.2, at 58 ["First reading of the Draft Articles on State Responsibility"].

[73] *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, 993 U.N.T.S.3 (entered into force 3 January 1976), art. 1(2): "In no case may a people be deprived of its own means of subsistence."

[74] First reading of the Draft Articles on State Responsibility, *supra* note 72, commentary under art. 42, para. 8(a).

[75] "Comments and observations received by Governments," in (1998) Yearbook of the International Law Commission, vol. II.1, 81, at 146 (United States).

[76] "Comments and observations received by Governments," in (1999) Yearbook of the International Law Commission, vol. II.1, 101, at 108 (Japan).

[77] See in particular "Comments and observations received by Governments" (1998), *supra* note 75, at 145-146 (United Kingdom); "Comments and observations received from Governments," in (2001) Yearbook of the International Law Commission, vol. II.1, 33, at 61-62 (Poland).

The decision of the International Law Commission to delete Draft Article 42(3) in the second reading, and not to try to revise it, certainly had much to do with the legitimate desire of this institution to bring to an end the long-lived project on state responsibility by avoiding difficult issues that appeared of limited direct relevance.[78] Considering the question in practical terms, special rapporteur James Crawford noted that "there was no reason to fear that the requirement to [make full reparation] would deprive [the responsible] State of its own means of subsistence."[79] As he contended, "[v]astly greater liabilities of States in the context of international debt arrangements were settled every year than ever arose from compensation payments."[80] Some members disagreed, in particular Raoul Goco and PS Rao, who suggested that any reference to "full" reparation was unnecessary: reparation should, as Rao submitted, just be "as complete as possible" in view of the particular circumstances of each case.[81]

B. Less-than-full Reparation in Customary International Law

In several fields of international relations, less-than-full reparation has been either accepted, or even actively promoted as just and adequate remedy. The recognition of less-than-full reparation in four particular fields is briefly described: war and other mass atrocities (1), trade measures (2), expropriations (3), and hazardous activities (4).

1. Wars and other mass atrocities

War reparations is an obvious case where less-than-full reparation is the norm. The Versailles Treaty of 1919,[82] collectively remembered as one of the causes leading to the Second World War, is the example that confirms the rule – the evidence that war reparations must *not* be full reparations.[83] Very limited reparations were requested from the defeated parties to the Second World War;[84] to the contrary, in fact, West Germany soon received substantial financial aid from the United States under the Marshal Plan. When Germany engaged voluntarily in negotiations with Israel and non-governmental Jewish organizations, no serious demand was

[78] Thus, the reports of the brief discussions of the question reflect a focus on the necessity of any limitation to the obligation to make full reparation, given the general nature of the project on the responsibility of states and the difficulty in defining a precise limitation to the obligation to make full reparation. See in particular the statement of James Crawford in the Summary Records of the 2613th meeting of the International Law Commission (2000), at para. 17.

[79] *Ibid* para. 18.

[80] *Ibid*. See also James Crawford's Third Report on State Responsibility, in (2000) Yearbook of the International Law Commission, vol. II.1, at 3 para. 42: "there is no history of orders for restitution in the narrow sense, or of the award of damages by way of satisfaction, which have threatened to deprive a people of its own means of subsistence."

[81] See the Summary Records of the 2615th meeting of the International Law Commission (2000), at paras. 52 amd 55.

[82] *Versailles treaty*, 28 June 1919, [1919] UKTS 4 (Cmd 153) (entered into force on 20 January 1920), art. 232.

[83] Christian Tomuschat, "International Law: Ensuring the Survival of Mankind on the Eve of a New Century: General Course on Public International Law" (2s001) 281 Collected Courses of the Hague Academy of International Law, at 293.

[84] See in particular *Treaty of Peace with Japan*, 8 September 1951, 136 U.N.T.S.45 (entered into force 5 August 1952), art. 14(1).

made for full reparation;[85] the resulting agreement recognized the determination of the German government "to make good the material damage" caused by the Shoah.[86]

Despite numerous conflicts in the last half of a century, there is little practice of reparations being paid at all in such contexts. Christine Gray noted that, in most cases where the UN General Assembly or UN Security Council condemned mass atrocities, no measures of reparation was indicated – partly because of uncertainties as to the scope of remedial obligations, and partly because of a more pragmatic emphasis on cessation and guarantees of non-repetition rather than reparation.[87] As she notes, "[t]he future conduct of the wrongdoing state is often more important to its victim that any award of compensation for past unlawful action."[88]

The reparations imposed by the UN Security Council upon Iraq for its invasion of Kuwait in 1990 is an interesting exception to the general lenience of states regarding war reparations. This reparations scheme, administered by the UN Compensation Commission, was however strongly criticized by the doctrine.[89] It was interpreted by international jurisdictions as an exception justified only in relation to "breaches of international law of unusual seriousness and extent."[90] And yet, even in this case, the overall amount of reparation was limited to 30 per cent of the annual value of experts of petroleum and petroleum products from Iraq, a threshold determined by the UN Secretary General on the basis of a rough assessment of "the requirement of the people of Iraq, Iraq's payment capacity…, and the needs of the Iraqi economy."[91]

More recently, the 2000 "Algiers" Agreement established the Eritrea-Ethiopia Claims Commission (EECC), an arbitral tribunal tasked with asserting reciprocal reparation claims arising from the armed conflict between these two countries.[92] The two states had very limited payment capacities and they were claiming massive reparations: Ethiopia's initial claims for damages, nearly USD 15 billion, was several folds higher than Eritrea's yearly national product.[93] In this context, the EECC briefly contemplated "to limit its compensation awards in some manner to ensure that the ultimate financial burden imposed on a Party would not be so excessive, given its economic condition and its capacity to pay, as to compromise its ability to meet its people's basic needs."[94] The EECC did not eventually need to implement limit its compensation awards following its finding of relatively limited and largely balanced damages, resulting only in a net payment of Ethiopia of about USD 10 millions.

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[85] See for instance M. Sharett, 14 March 1951, cited in N. Sagi, *German Reparations: A History of the Negotiations* (New York: Magnes Press, 1980) at 55, requesting a sum estimated to represent a quarter of the property that was seized.

[86] Bilateral agreement between Germany and Israel, signed in Luxembourg on 10 December 1952, 162 U.N.T.S.206 (entered into force 27 March 1953), 1st and 2nd recitals [Luxembourg Agreement].

[87] C.D. Gray, *Judicial Remedies in International Law* (Clarendon, Oxford 1987) at 216-217.

[88] *Ibid.*, at 217. Gray notes that the president of Guinea once set aside considerations of the UN Security Council to require Portugal to take some measures of reparation, on the motive that only independence could be an appropriate measure of reparation. See *ibid.* and (1971) UN Monthly Chronicle No 1, p 18.

[89] See for instance the discussion in Andrea Gattini, "The UN Compensation Commission: Old Rules, New Procedures on War Reparations" (2002) 13 European Journal of International Law 161.

[90] Eritrea-Ethiopia Claims Commission, Decision number 7 of 27 July 2007 providing guidance relating *jus ad bellum* liability, XXVI Reports of International Arbitral Awards 10, at 19, para. 29.

[91] Note of the Secretary-General, UN Doc. S/22559 (1991), at para. 7. See also UNSC Res. 705 (1991), para. 2.

[92] *Agreement between the Eritrea and Ethiopia*, 12 December 2000, 2138 U.N.T.S.94, art. 5 ["Algiers Agreement"].

[93] See Eritrea-Ethiopia Claims Commission, decision of 17 August 2009, Final Award: Eritrea's Damages Claims, decision of 17 August 2009, XXVI Reports of International Arbitral Awards 505, at 522, para. 18.

[94] *Ibid.*, at para. 22.

2. Trade measures

Likewise, in the pursuit of their international commercial relations, states have generally agreed that full reparation was neither their normal practice, nor even a desirable outcome. The "first objective" of dispute settlement in international trade law, according to the WTO's Dispute Settlement Understanding, "is usually to secure the withdrawal of the measures concerned if these are found to be inconsistent with the provisions of any of he covered agreements."[95] Accordingly, upon finding a domestic measure inconsistent with an international trade agreement, a Panel or the Appellate Body shall only "recommend that the Member concerned bring the measure into conformity."[96] International trade law does not generally deal with the injuries resulting from such breaches of trade obligations, and the term "compensation" is used to mean "temporary measures available in the event that the recommendations and rulings are not implemented within a reasonable period of time."[97]

A handful of isolated panel decisions concerning cases of antidumping or countervailing duties have however recommended the restitution of the duties wrongfully levied,[98] the last of which (and the only one under the WTO) being the *Australia – Automotive Leather II (Article 21.5 – United States)* case in 2000.[99] In the latter case, the retrospective measures, which had not been requested, were vehemently criticized by States representatives at the occasion of the adoption of the Panel report,[100] on the grounds that retrospective measures were not only inconsistent with relevant treaty provisions,[101] but also "contrary to GATT/WTO custom and practice."[102] As the claimant itself, the United States, noted, there was "a legitimate basis for not requiring the repayment of recurring subsidies that had been granted in the past," in particular the understanding that "termination of the recurring subsidies programme ha[ve] an enforcement effect that [is] sufficient to accomplish the objective"[103] of the dispute settlement.

3. Expropriations

Whether or not takings of foreign properties are to be considered a "wrongful" act or not`, they have led to similar discussions as to the nature of the compensation obligations of the expropriating state. A broad consensus emerged over the last half of a century according to which less-than-full compensation might be justified in large programs of nationalizations. Thus, long deliberations in the UN General Assembly defined, in elusive terms, a duty to pay

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[95] *Understanding on rules and procedures governing the settlement of disputes*, 15 April 1994, 1869 U.N.T.S.401 (entered into force 1 January 1995), art. 3(7) ["DSU"].
[96] *Ibid.*, art. 19(1). See also *Understanding Regarding Notification, Consultation, Dispute Settlement and Surveillance*, 28 November 1979, GATT Doc L/4907, at 210.
[97] DSU, *supra* note 95, art. 22(1).
[98] See M. Matsushita, T. Schoenbaum and P.C. Mavroidis, *The World Trade Organization: Law, Practice, and Policy* (Oxford: Oxford University Press, 2003) at 78; P. Grané, "Remedies Under WTO Law" (2001) 4 Journal of International Economic Law 755.
[99] WTO, *Australia – Automotive Leather II (Art 21.5)*, decision of 21 January 2000, WT/DS126RW, para. 6.42. The Panel's decision was not based on art. 19(1) DSU, but on a similar provision: art. 4.7 of the *Agreement on Subsidies and Countervailing Measure*, 15 April 1994, 1867 U.N.T.S. 14.
[100] See, Minutes of Meeting of the WTO Dispute Settlement Body on 11 February 2000, WT/DSB/M/75, at 5. The report was criticized by representatives of the United States, Australia, Brazil, Canada, Japan, Malaysia and the European Union; Hong Kong was the only party supporting its conclusion.
[101] *Ibid.*, at 8 (Japan).
[102] *Ibid.*, at 7 (Canada).
[103] *Ibid.*, at 9 (United States).

"appropriate compensation … in accordance with international law."[104] Likewise, the *Institut de Droit International* alluded to "an appropriate balance [to] be assured between the interests of the investor and the public purposes of the State."[105] The American Law Institute's second restatement of the foreign relations law of the United States acknowledged the existence of certain "special circumstances," which it left undefined, that could justify a derogation to full compensation in cases of expropriation.[106]

Clearly, these observations do not support the existence of an obligation to make full reparation in cases of expropriation. A summary review of pre-20th Century arbitral litigation evidences a startling gap between claims for compensation and awards, suggesting that full compensation was not the practice.[107] As M. Sornarajah noted, "[t]here is no indication in modern practice of full compensation ever having been paid as compensation for nationalization."[108] Since the Second World War, most investment disputes have indeed been settled through lump-sum agreements providing only partial compensation.[109] This practice of lump-sum agreements, however, reflects the possibility for states – including expropriating states that have no material interests, but only reputational interests in negotiating – to come to a mutually beneficial agreement.

4. Hazardous activities

Of a more direct relevance to climate change reparations is the general reluctance to apply full reparations – or, sometimes, any reparations at all – in relations to transboundary harms arising out of hazardous activities. One of the greatest industrial disasters of the 20th Century, the Chernobyl nuclear accident, led to no claims for reparations, the general understanding being that "priority should be given, in the wake [of the accident], to endeavours of another nature."[110]

More generally, the International Law Commission could only affirm a general obligation of responsible states to make full reparation after having differentiated the topic of state responsibility from that of state "liability" for the injurious consequences arising out of hazardous activities.[111] The latter topic included not only ultra-hazardous activities involving a low probability of causing disastrous transboundary harm, but also activities highly likely to cause significant transboundary harm[112] – showing that the line between state liability and state

[104] UNGA Res. 1803 (XVII) (1962) part I, para. 4.
[105] Institut de Droit International, Tokyo Res. 2013/1, "Legal Aspects of Recourse to Arbitration by an Investor against the Authorities of the Host State under Inter-State Treaties," art. 14(2).
[106] American Law Institute, Second Restatement of the Foreign Relations Law of the United States, para. 188(2): "In the absence of the conditions specified in Subsection (1), compensation must nevertheless be equivalent to full value unless special circumstances make such requirement unreasonable." See also ibid, Explanatory Note (c): "The law is not settled as to what special circumstances may make the requirement of full value unreasonable."
[107] J.M. Sweeney, "The Restatement of the Foreign Relations Law of the United States and the Responsibility of States for Injury to Aliens" (1964) 16 Syracuse Law Review 762, 766.
[108] M. Sornarajah, *The International Law on Foreign Investment* (Cambridge: Cambridge University Press, 2010) at 417.
[109] See generally R.B. Lillich and B.H. Weston, *International Claims: Their Settlement by Lump Sum Agreements* (Charlottesville: University Press of Virginia, 1975); B.H. Weston, D.J. Bederman and R.B. Lillich, *International Claims: Their Settlement by Lump Sum Agreements, 1975-1995* (Ardsley: Martinus Nijhoff, 1999).
[110] Correspondence with the Swedish Embassy in London, 10 December 1987, cited in P. Sands, *Chernobyl: Transboundary Nuclear Air Pollution – The Legal Materials* (Cambridge: Cambridge University Press, 1988) at 27. See also A. Kiss, "L'accident the Tchernobyl et ses consequences au point de vue du droit international" (1986) 32 Annuaire français de droit international 139, 151-152.
[111] (1973) Yearbook of the International Law Commission, vol. II, at 169, para. 39.
[112] Prevention of Transboundary Harm from Hazardous Activities, (2001) Yearbook of the International Law Commission, vol. II.2, 146, art. 2(a); Draft principles on the allocation of loss in the case of transboundary harm

responsibility is sometimes particularly thin, to say the least.[113] Yet, the International Law Commission identified radically different secondary obligations in both topics, putting clearly more emphasis on prevention and harm mitigation than on reparation proper with regard to state liability.[114]

When it did address reparation, the International Law Commission only recognized an obligation for the liable state to provide "prompt and adequate"[115] compensation, clarifying that this meant that the reparation should not be "grossly disproportionate to the damage actually suffered, even if it is less than full."[116] A previous working draft of the International Law Commission elaborated on the "principle that the victim of harm should not be left to bear the entire loss,"[117] here again clearly recognizing the existence of "circumstances in which the victim of significant transboundary harm may have to bear some loss."[118] As will be further discussed below, the degree of "culpability" of the liable state is certainly an element to take into account in assessing the level of reparations. As Phoebe Okowa noted, "take into account the gravity of the wrongful act, the importance of the obligation breached, and the degree of fault or the wilful intent of the wrongdoer."[119]

III. JUSTIFICATIONS FOR A DIMINUTION OF CLIMATE CHANGE REPARATIONS

Without developing a systematic doctrine of less-than-full reparation in international law, this section aims at identifying the relevant elements of justification for a diminution of climate change reparations on the basis of the analogues presented above. It suggests that a diminution of climate change reparations could possibly be justified by the limited capacity of responsible states to pay (A), the complex and indirect causal link between excessive GHG emissions and the impacts of climate change (B), the disproportion between the injury and the perceived wrongfulness of excessive GHG emissions (C), and the limits of the theory of collective responsibility (D).

A. Capacity of the Responsible State to Pay

As mentioned above, the International Law Commission accepted, during the first reading of its project on state responsibility, that reparation shall "[i]n no case … result in depriving the

arising out of hazardous activities, in (2006) Yearbook of the International Law Commission, vol. II.2, 110, commentary under art. 1, at para. 2 ["Draft principles on the allocation of loss"].

[113] For instance, the International Law Commission has analysed the *Trail Smelter* case both as a breach of an obligation from which the responsibility of a state can arise and as the archetypical case of international liability for injurious consequences arising out of acts not prohibited by international law. Regarding the former, see Draft Articles on State Responsibility, *supra* note 12, commentary under art. 14, at para. 14. Concerning the latter, see the report of the working group on international liability for injurious consequences arising out of acts not prohibited by international law, in (1996) Yearbook of the International Law Commission, vol. II.2, 100 (Annex I), at 103, general commentary, para. 2 ["1996 report on international liability"]; Draft principles on the allocation of loss, *supra* note 112, at 122, commentary under art. 2, at para. 1.

[114] See Prevention of Transboundary Harm from Hazardous Activities, *supra* note 112, at 146; Draft principles on the allocation of loss, *supra* note 112, principle 3(b).

[115] Draft principles on the allocation of loss, *supra* note 112, principle 4.

[116] *Ibid.*, commentary under principle 4, para. 8.

[117] 1996 report on international liability, *supra* note 113, art. 21.

[118] *Ibid.*, commentary on art. 21, para. 4.

[119] Phoebe N. Okowa, *State Responsibility for Transboundary Air Pollution in International Law* (Oxford: Oxford University Press, 2000) at 209.

population of a State of its own means of subsistence."[120] This provision was only removed in the second reading because it was perceived as prone to favour abusive claims and generally irrelevant to the cases typically brought before international jurisdictions.[121] But beyond international jurisdictions, international law also has a role to play in guiding political negotiations and in faming collective expectations.

The general practice of states, in particular with regard to war reparations or with the transboundary harms arising out of hazardous activities, indicates a concern not to impose full reparation when this would exceed the payment capacity of a state.[122] Simply delaying the payment of full reparation based on a plea of necessity or force majeure[123] is not enough in cases where it represents a great proportion of, or even several folds the gross domestic product of the responsible state.[124] As Christian Tomuschat noted in his course in the Hague Academy of International Law in 2001, "large-scale damage require other rules than individual cases of wrongdoing."[125]

It may appear counterintuitive for industrial states, which developed at the expenses of the global environment, to claim an inability to pay full reparation to least developed states that are severely affected by the adverse impacts of climate change. After all, the recognition of the capacity to pay as a justification for a diminution of reparation was mostly thought of as a defence that developing countries could used against developed ones.[126] However, given the tremendous variability in diverse assessments of the injuries caused by climate change, which are largely contingent of value-loaded assessment (e.g. the discounting rate applicable to future harms),[127] the recognition of the capacity of responsible states to pay full reparation is a potential safeguard against excessive claims.

The capacity to pay criteria should not be approached as a clear-cut threshold, a test determining whether or not a state is capable of paying reparations in full. In fact, the need of the responsible state to keep sufficient resources to protect the human rights of its population is virtually unlimited.[128] Yet, protection resources have a diminishing marginal utility: the first resources are essential to protect the most basic needs of the populations, whereas additional resources are less immediately necessary. Therefore, consideration for the capacity of industrial states to pay climate change reparations requires a balancing of interests, which should also take the protection needs of the affected states into account.

Beyond the capacity of industrial states to pay, the capacity of international institution to make them pay also deserves careful consideration, including from a (pragmatic) legal perspective. It would not productive and it could be counterproductive, and it is hence

[120] First reading of the Draft Articles on State Responsibility, *supra* note 72, at 58, art. 42(3).
[121] See *supra* notes 78-80 and accompanying text.
[122] Such grounds for a diminution of a payment were recognized, just a few years after the adoption of Draft Articles on State Responsibility, by the Eritrea-Ethiopia Claims Commissions. See *supra* note 93.
[123] See James Crawford's Third Report on State Responsibility, *supra* note 80, at para. 41, referring to *Russian Indemnity* (1912) XI Reports of International Arbitral Awards 421, at 443. This case, however, related to a transient inability to pay.
[124] See e.g. *supra* note 93.
[125] Christian Tomuschat, *supra* note 84 at 293. Tomuschat further noted that, in the determination of war reparations, "account was always taken of the actual capacity to pay."
[126] See for instance *supra* note 70.
[127] See in particular William D. Nordhaus, "A Review of the Stern Review on the Economics of Climate Change" (2007) 45 Journal of Economic Literature 686.
[128] *International Covenant on Economic, Social and Cultural Rights*, *supra* note 73, art. 2.1.

undesirable for a court to "grant vain and useless relief."[129] In sensitive political contexts where the conduct of the responsible State leaves no doubt that this state will not comply with a judgment requiring full reparation, international jurisdictions might have sensible thoughts about providing a mutually acceptable settlement that stops short of full reparation.[130] When there is only a tiny political window to bend the conduct of states continuingly failing to limit domestic GHG emissions and thus causing great and possibly existential harm to the global environment, priority should arguably be the prevention of further harm through climate change mitigation rather than the imposition of expansive reparations. While trembling at the idea of tarnishing the appearance of the independence of international law from power, international lawyers should not suggest full reparations when the most likely consequence of this suggestion would be to severe international relations, derail on-going negotiations, and possibly hinder essential negotiations on climate change mitigation, thus defeating the primary purposes of international law.[131]

B. Indirect Causation of Individual Harms

Clear evidence shows that certain extreme weather events have become more frequent in many regions of the worlds[132] and that such trends will amplify in the future.[133] Yet, it remains problematic to attribute any concrete loss and damage to climate change because any given weather event could possibly "have occurred by chance in an unperturbed climate."[134] In particular, it is virtually impossible to make a clear distinction between "human-caused weather" and "tough-luck weather."[135] Tools are being developed for a statistical attribution of weather events to climate change (i.e. by estimating the increased likelihood of such events),[136] but this is difficult to reconcile with the binary causal attribution generally assumed by the law of state responsibility. Article 31 of the Draft Articles on State Responsibility defined the obligation to make full reparation in relation to the "injury caused by the internationally

[129] *Williams v Garner*, 268 So. 2d. 56 (U.S., La. App. 1st Cir. 1972) at 61.

[130] Such considerations are perhaps the explanation for a surprising reasoning of the International Court of Justice regarding the remedial obligations of Serbia, in the case regarding the *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia v Serbia)*, judgment of 26 February 2007, [2007] I.C.J. Rep. 43, para. 462-465. See discussions in Christian Tomuschat, "Reparation in Cases of Genocide" (2007) 5 Journal of International Criminal Justice 905; Marko Milanović, "State Responsibility for Genocide: A Follow-Up" (2007) 18 European Journal of International Law 669 at 691 (noting that it would have been "far, far better for the Court to provide no explanation at all as to why it was not awarding compensation in this concrete case than for it to give the particular justification that it did").

[131] See in particular Charter of the United Nations, 26 June 1945, 892 UNTS 119 (entered into force 24 October 1945), art. 1.

[132] IPCC, *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (New York: Cambridge University Press, 2012) at 8 ["SREX"]. See also "Summary for Policymakers," in IPCC, *supra* note 1, 3, at 5.

[133] See SREX, *supra* note 132, at 13; "Summary for Policymakers," *supra* note 132, at 20.

[134] Dáithí A. Stone and Myles R. Allen, "The End-to-End Attribution Problem: From Emissions to Impacts" (2005) 71(3) *Climatic Change* 303.

[135] Mike Hulme, Saffron J. O'Neill and Suraje Dessai, "Is Weather Event Attribution Necessary for Adaptation Funding?" (2011) 334(6057) *Science* 764, at 764.

[136] See e.g. Pardeep Pall et al., "Anthropogenic Greenhouse Gas Contribution to Flood Risk in England and Wales in Autumn 2000" (2011) 470(7334) *Nature* 382 at 382, proposing a "probabilistic event attribution framework"; Huggel et al., "Loss and Damage Attribution" (2013) 3(8) *Nature Climate Change* 694; Myles Allen et al., "Scientific Challenges in the Attribution of Harm to Human Influence on Climate" (2006) 155 University of Pennsylvania Law Review 1353. For a critique of this methodology, see in particular Mike Hulme, Saffron J O'Neill and Suraje Dessai, "Is Weather Event Attribution Necessary for Adaptation Funding?" (2011) 334(6057) Science 764.

wrongful act,"[137] which it explained as an exclusion of damage "that is too 'remote' or 'consequential' to be subject of reparation."[138]

Slow-onset environmental changes such as sea-level rise could be more directly attributed to climate change. In any case, however, the actual loss and damage suffered by a population largely depend on social factors, in particular the physical exposure of the population to the environmental event[139] and its vulnerability to this event.[140] In a developing world with a growing population, the scientific community has expressed high confidence that "increasing exposure of people and economic assets have been the major cause of long-term increases in economic losses from weather- and climate-related disasters."[141] No clear influence of climate change on loss and damage from disasters could generally be demonstrated over the past decades,[142] and some studies suggest that the statistical "signal" of climate change could generally remain concealed behind more important changes in exposure and vulnerability in the decades to come.[143]

A pragmatic interpretation of the law of state responsibility suggests that neither full reparation for all weather-related or climate-related loss and damage, nor no reparation at all would be an adequate remedy to the indirect impacts of climate change.[144] A parallel can be drawn with precedents where partial reparation was indicated for indirect or not-fully foreseeable injuries. Thus, in the *Naulilaa* case, an Arbitral Panel considered that Germany should have anticipated that its attack on some Portuguese colonies would likely expose Portugal to further turmoil in an instable colonial context, although it could not have foreseen the nature and extent of the turmoil that would follow in Portuguese colonies. On this basis, the Panel condemned Germany to the payment of an "equitable additional compensation"[145] established *ex aequo et bono*.[146] Likewise, the settlement of international disputes through diplomatic negotiations has often led to the conclusion of lump-sum agreements representing, in most cases, only a tiny fraction of complex injuries.[147]

C. Disproportion of the Injury to the "Culpability" of the Responsible State

[137] Draft Articles on State Responsibility, *supra* note 12, 31(1).
[138] Draft Articles on State Responsibility, commentary under art. 31, para. 10.
[139] Exposure can be defined as "[t]he presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected." See "Summary for Policymakers," in IPCC, *supra* note 6, at 5.
[140] Vulnerability is "[t]he propensity or predisposition to be adversely affected." It "encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt." See *ibid*.
[141] See "Summary for Policymakers," *supra* note 132, at 9. See also Huggel et al., *supra* note 136, at 695.
[142] "Summary for Policymakers," *supra* note 132, at 9; Laurens M. Bouwer, "Have Disaster Losses Increased Due to Anthropogenic Climate Change?" (2010) 92 *Bulletin of the American Meteorological Society* 39.
[143] See in particular Laurens M. Bouwer, "Projections of Future Extreme Weather Losses under Changes in Climate and Exposure" (2013) 33 *Risk Analysis* 915, noting that "the signal from anthropogenic climate change is likely to be lost among the other causes for changes in risk, at least during the period until 2040."
[144] Precedents in international law, varying between a requirement of "direct," "foreseeable" or "proximate" causal relation, leave ample room for such a pragmatic interpretation. In fact, the International Law Commission itself stated that "the question of remoteness of damage is not a part of the law which can be satisfactorily solved by search for a single verbal formula." Draft Articles on State Responsibility, *supra* note 12, commentary under art. 31, at para. 10.
[145] *Responsabilité de l'Allemagne à raison des dommages causés dans les colonies portugaises du sud de l'Afrique (Portuval vi Germany)*, decision of 31 July 1928, II Reports of International Arbitral Awards 1011, 1032-33 [translated by the author].
[146] *Ibid.*, decision of 30 June 1930, II Reports of International Arbitral 1035, at 1074.
[147] See above, section III.C.

International law remedies aim at sanctioning a violation of an international obligation and at repairing the resulting injury. International law remedies need to fulfil these two functions concomitantly rather than alternatively.[148] Thus, punitive damages – whereby remedies would impose a sanction beyond the reparation of the injury – have generally been rejected in international law.[149] Likewise, less-than-full reparation should arguably be indicated when there is a gross disproportion between the degree of "culpability" of the responsible state and the extent of the injury – that is to say, in cases where a "less culpable" (e.g. inadvertent) conduct causes large-scale injuries.[150] In such cases, a complete transfer of the burden of the injury on the responsible state could appear excessive,[151] and an equitable distribution of the burden of the injury between responsible and injured states should be conceived.

In this sense, Phoebe Okowa suggested in her authoritative study of state responsibility for transboundary air pollution that "pecuniary compensation should in addition to repairing the harm done take into account the gravity of the wrongful act, the importance of the obligation breached, and the degree of fault or wilful intent of the wrongdoer."[152] Similar considerations were instrumental in the decision of the International Law Commission to single out the question of State "liability" for the harms arising out of hazardous activities, and to define a regime of less-than-full reparation.[153] When the working group of the International Law commission proposed a list of relevant elements on the basis of which the nature and extent of reparations could be negotiated, it put a certain emphasis on the "culpability" of the liable state – for instance whether the liable state had taken appropriate prevention measures and measure to minimize the harm, including through providing assistance to the affected states, and whether it had shared the benefits drawn from the hazardous activity with other states.[154] The degree of "culpability" of the responsible state was also taken into account in other fields, and could for instance contribute to explain the limitation of reparations for breaches of trade commitments (to which less moral significance is given than, say, human rights obligations).[155]

This line of argument applies most straightforwardly to historical GHG emissions, in particular before the emergence of a scientific consensus on the anthropogenic causes of

[148] See Draft Articles on State Responsibility, *supra* note 12, commentary under art. 36, para. 3, noting that the prevailing view is that "the consequences of an internationally wrongful act cannot be limited either to reparation or to a 'sanction'." See also R. Ago, "Le délit international" (1939) 68 Collected Courses of the Hague Academy of International Law 417 at 430-440.

[149] See in particular Draft Articles on State Responsibility, *supra* note 12, commentary under art. 36, para. 4; James Crawford, *State Responsibility: The General Part* (Cambridge: Cambridge University Press, 2013) at 523-26; Inter-American Court of Human Rights, *Velásquez Rodríguez* Case, Judgment of 21 July 1989 on compensatory damages, Series C, No 7, at para. 38.

[150] See e.g. the statement of P.S. Rao in the Summary Records of the 2399th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2399 (1995), at para. 24.

[151] Tomuschat, *supra* note 83, at 296-297.

[152] Okowa, *supra* note 119, at 209.

[153] See *supra* note 115-116 and accompanying text. Nothing would have prevented the International Law Commission from approaching the strict liability regime regulating hazardous activities as primary rules (an obligation of result to prevent a disaster from occurring) subject, in case of breach (i.e. the occurrence of a disaster), to the general regime of State responsibility. See, in this sense, the statement of S. Fomba in the Summary Records of the 2414th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2414 (1995), at para. 36; and the statement of Bennouna in the Summary Records of the 2450th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2450 (1996), at paras. 28-29 and 33.

[154] 1996 report on international liability, *supra* note 113, art. 22.

[155] See also, more generally, the statement of P.S. Rao in the Summary Records of the 2615th meeting of the International Law Commission, UN Doc A/CN.4/SR.2615 (2000), at para. 55, arguing that "intentional wrongs and other aspects" need to be factored into the determination of reparation in each particular case.

climate change. Here again, no clear line can be drawn as scientific evidence accumulated progressively, since the early 1960s and until the early 1990s.[156] Adopted in 1992, the UN Framework Convention on Climate Change recognizes a clear general scientific consensus that human activities were have consequences, possibly disastrous, on the climate system.[157] There is a compelling argument for discounting reparations for the adverse consequences caused by excessive GHG emissions before the emergence of this scientific consensus, in particular before the apparition of any scientific evidence at all. No wrong can reasonably be found when large amounts of GHG was emitted without any possible knowledge of the harmful consequences, when the dominant worldview considered nature as fundamentally inalterable. For this historical period before the emergence of scientific evidence of anthropogenic climate change, reparations could only be justified, perhaps, on the equitable ground of unjust enrichment. However, as a scientific consensus was emerging about anthropogenic climate change, interference with the climate system ceased to be purely accidental; it became at best inadvertent, negligent, and arguably now grossly negligent. Therefore, as a consequence of scientific progress, a greater degree of "culpability" should be attached to present emissions than to past ones, and that a diminution of climate change reparations can more readily be justified in relation to past GHG emissions than to present ones.

"Culpability," moreover, is largely a function of public perception. An additional line of arguments for a diminution of climate change reparations relates to the fact that no state is completely "innocent."[158] Some states produce more GHG that others, but this has much more to do with differences of development level than to a systematic engagement to the protection of the global environment. It is overwhelmingly considered as a desirable public policy objective for a state to develop its industrial sector, which almost inevitably results in GHG emissions. Some efforts have however been made and some differences exist among developed states, but, for now at least, efforts appear much more clearly in the trends (a diminution or a limitation of the increase of GHG emissions in states making costly efforts to mitigate climate change) than in absolute levels of emissions. This suggests that, if climate change reparations is mostly designed to provide a political or economic signal for climate change mitigation (and is yet to be politically acceptable), it is more important to attach consequences to the evolution of GHG emissions than to the absolute levels of emissions in each state.

D. Limits of Collective Responsibility

Instances of large reparations also raise questions relating to the limits of the liability of a state – that is, fundamentally, of a people – for the deeds of a government, past or incumbent. The legal personality of the state is a legal fiction: the actions and omissions attributed to "the state"

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[156] Charles Keeling detected a rise in the atmospheric concentration of carbon dioxide in 1960, thus confirming the possibility of earlier theories (some from the 19th Century) of an anthropogenic increase of the greenhouse effect that would alter climatic conditions. In 1979 a US National Academy of Sciences report considers anthropogenic climate change as highly credible. See generally Spencer Weart, *The Discovery of Global Warming*, 2nd ed. (Cambridge, MA: Harvard University Press, 2008).

[157] See UNFCCC, 3rd recital, noting that

> "human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind."

[158] By analogy, Pierre-Marie Dupuy once suggested that the limitation of international responsibility for catastrophic damages arising out of hazardous activities was related to a "a diffuse feeling of shameful solidarity between states in front of the degradation of a human environment to which they all contribute" [translated by the author]. Pierre-Marie Dupuy, "L'État et la reparation des dommages catastrophiques" in Francesco Francioni and Tullio Scovazzi, eds., *International Responsibility for Environmental Harm* (London: Graham and Trotman, 1991) 125, at 142.

always result from the decisions of a small group of individuals assumed to act on behalf of a people, and to whom it belongs to ensure that "the state" respects "its" obligations under international law.[159] In order to avoid abusive claims that could nullify the very foundation of international law, the legal fiction of the state needs to result in a very strong presumption that the conduct of a government acts on behalf of its state and that the acts of the government engage the responsibility of the state. In this sense, it is understood that the conduct of a state organ or agent can be attributed to a state notwithstanding the possibility of an excess of authority under domestic laws[160] or an international criminal responsibility of the individual under international law,[161] provided only that this organ or agent acted in its official quality.

Nevertheless, it is sometimes necessary to look beyond the legal fiction of the personality of the State, in particular when reparation would otherwise be of grossly excessive consequences onto individuals. While collective responsibility is an acceptable form of "rough" justice when the stakes are small, it becomes unfair when it is extended to system-wide violations, whether the latter are accidental, inadvertent, or even when it results from the wilful action of a State's government. The limitations of war reparations since the Versailles Treaty, in particular, reflects a sense that it is not desirable to push the legal fiction of the personality of the state so far as to impose the payment of reparations on the population of devastated states (as a people often suffers when its government wrongfully engages in a war) or to condemn this state to protracted payments of reparations that will affect yet unborn generations.[162] Beside moral aspects, the experience of the Versailles treaty shows that such a rigid application of the principle of state responsibility can be politically toxic, with adverse impacts on domestic public order as well as on international peace and security.

These reflections are perhaps best theorized in relation to a constitutive limitation of the mandate of any government, under the social contract, to represent its people and to commit it to particular obligations toward other peoples.[163] Through the recognition of the international criminal responsibility of individuals,[164] the non-recognition of the concept of international crimes of States,[165] and the research of targeted or "smart" economic sanctions that impact a

[159] See in particular Philip Allott, "State Responsibility and the Unmaking of International Law" (1988) 29 Harvard International Law Journal 1, at 14, arguing that "[t]he wrongful act of a State is the wrongful act of one set of human beings in relation to another set of human beings." See also the judgment of the International Military Tribunal, in Trial of the Major War Criminals Before the International Military Tribunal, Nuremberg, 14 November 1945-1 October 1946, vol. 1 (1947) at 223, noting that "[c]rimes against humanity are committed by men, not by abstract entities."

[160] See Draft Articles on State Responsibility, *supra* note 12, art. 7.

[161] See in particular the *Rome Statute of the International Criminal Court*, 17 July 1998, 2187 U.N.T.S. 90 (entered into force 1 July 2002), art. 25(4); *Application of the Convention on the Prevention and Punishment of the Crime of Genocide*, *supra* note 130, at 43, para. 173. See also A. Cassese, "When May Senior State Officials Be Tried for International Crimes? Some Comments on the Congo v Belgium Case" (2002) 13 European Journal of International Law 853, at 864; A. Nollkaemper, "Concurrence between Individual Responsibility and State Responsibility in International Law" (2003) 52 International and Comparative Law Quarterly 615.

[162] See *supra* section III.B.2.

[163] By contrast to the excess of authority of a State organ or State agent (which does not prevent the attribution of a conduct to the State), the circumstances discussed here relate to an excess of power by a government as a whole. The case law and doctrine developed in relation to the former do not automatically apply to the latter.

[164] See in particular Draft Articles on State Responsibility, *supra* note 12, art. 58; and generally *Rome Statute*, *supra* note 161

[165] See discussion in James Crawford's first report on state responsibility, in (1998) Yearbook of the International Law Commission, vol. I.1, at 9-24, paras. 43-95. See also XXII Trial of the Major War Criminals before the International Military Tribunal, Nuremberg at 466: "Crimes against international law are committed by men, not by abstract entities, and only by punishing individuals who commit such crimes can the provisions of international law be enforced."

government without affecting its population,[166] State practice and the doctrine have increasingly turned to acknowledge the possibility for international institutions to look beyond the fiction of State responsibility when ascribing responsibilities for breaches of international obligations. International law has recognized that the social contract through which governments arise do not transfer absolute powers upon the latter; limitations of governmental powers include respect for human dignity[167] as well as environmental sustainability.[168] Accordingly, a government cannot be deemed to have received an unlimited mandate to commit the worst crimes or to damage the environment of present and future generations, while sending the bill to its people – including to yet unborn generations – without providing them with any equivalent benefits.

A diminution of climate change reparations could be justified on such grounds, especially in relation to past emissions. The current and future generations of developed states' citizens assume no control for the failure of the past governments of their state to regulate GHG emissions.[169] Current and future generations may benefit from the development achieved by their ancestors, but this benefit often extends beyond national borders in complex ways which are difficult to assess. Likewise, future generations of citizens in industrial states should not be required to pay full reparation on the ground of current emissions, unless perhaps they can be shown to receive a distinct benefit from present emissions in their state. By contrast, collective responsibility applies more readily in relation to present emissions and present generations. It remains however that a great proportion of current GHG emissions are path-dependent: they are considerably influenced by decisions made years or decades before, for instance regarding transport or energy infrastructures.[170] At least, unlike past emissions, current emissions can credibly be assumed to benefit current generations at least at the collective level (e.g. through domestic production), and the imposition of a correlative collective costs could therefore be justified.

A symmetrical issue appears however at the stage of compensating harms that, for the most, will be suffered by yet unborn generations.[171] This raises questions relating to the limitation of the legal personality of the state, specifically its ability to represent unborn generations of nationals over decades, centuries and millennia. Related intractable issues were raised by economists about a possible discount rate to apply in order to assess the present value of future injuries.[172] Arguably only part of the injury can be compensated to the government of affected

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[166] See e.g. D.W. Drezner, "Sanctions Sometimes Smart: Targeted Sanctions in Theory and Practice" (2011) 13 International Studies Review 96.

[167] See generally *Universal Declaration of Human Rights*, GA Res. 217(III); *International Covenant on Economic, Social and Cultural Rights*, *supra* note 73; *International Covenant on Civil and Political Rights*, 16 December 1966, 999 U.N.T.S.171 (entered into force 23 March 1976).

[168] See e.g. Rio Declaration, *supra* note 10; Stockholm Declaration, *supra* note 10; UNFCCC, *supra* note 10.

[169] This is certainly the basis for Posner and Weisbach's assertion that collective responsibility for climate change can only rely on "collectivist habits of thinking that do not survive scrutiny." See Posner and Weisbach, *supra* note 63, at 116.

[170] See for instance Marc Fleurbaey et al., "Sustainable Development and Equity" in Edenhofer et al., eds., *Climate Change 2014: Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2015) 283 at 312-313.

[171] Even if all anthropogenic GHG emissions ceased today (extremely unlikely because of paths accepted by our generations that almost necessarily engage next generations to keep on with unsustainable practices), the climate would continue to change for many centuries until a new global equilibrium could be reached. Continuing sea-level rise in the coming centuries will, for instance, almost inevitably flood most of the cultural heritage of mankind. See for instance Deliang Bruaer et al., "Introduction," in IPCC, *supra* note 1, 119, at 128-129.

[172] See Nordhaus, *supra* note 127.

states, based on a role of promoting at least the possibility of the existence of future generations and, perhaps, what can reasonably be assumed to be the interests of these future generations. An argument could consistently be made that reparations should not be used exclusively for the benefit of current generations, but also with great concern for sustainable development policies, such as environmental protection, assumed to be in the interest of future generations.

Although certain limitations of collective responsibility should be admitted for past, system-wide wrongful conducts, all forms of collective responsibility do not fade away. The experience of reparations for wars and other mass atrocities suggests that current generations retain some responsibility for what was done in their name,[173] as the strong presumption of the government's legitimacy cannot disappear without leaving any traces, and, in some cases, because of some possible benefits drawn by the people as a result of the conduct.[174] However, remedial obligations in such circumstances are of a different nature than in classical cases of the responsibility of a people for the acts and omissions of the government acting in the pursuit of its interests. Rather than an obligation to make full reparation, the responsibility of a people for the illegitimate conduct of its government needs to be tailored through specific negotiations, taking into account the urgency of guarantees of cessation and non-repetition, the requirement that the people of the responsible state draws no unjust benefit from the wrongful act, as well as, more pragmatically, the need to restore constructive and friendly relations between peoples. In this regard, reparations may take multiple forms, including not only material compensation, but also – and overall – symbolic measures such as an apologetic policy of acknowledgment, memory and commemoration.[175]

IV. IMPLICATIONS FOR CLIMATE CHANGE GOVERNANCE AND GENERAL INTERNATIONAL LAW

The above considerations of complementary justifications for a diminution of climate change reparations have implications not only for climate change governance (A), but also for our conception of remedial obligations in general international law (B).

A. Implications for Climate Change Governance

As argued above, there are good legal arguments for a diminution of climate change reparations. Firstly, climate change reparations should be assessed on the basis of a balancing of the interests of the states affected by climate change, of the responsible states, and of the good administration of justice. Secondly, given the complexities in assessing and valuing the injury caused by excessive GHG emissions, climate change reparations could only be established *ex aequo et bono* through some kind of lump-sum agreement, rather than on the basis of a detailed assessment of the injury. Thirdly, an argument could be made for a diminution of reparations due in relation to historical emissions, on the ground of the limited "culpability" of polluting states at a time when there was only limited evidence of the adverse

[173] See Statement of Chancellor Konrad Adenauer to the Bundestag on 27 September 1951 concerning the attitude of the German Federal Republic toward the Jews, reproduced in C.C. Schweitzer, ed., *Politics and Government in Germany, 1944-1994: Basic Documents* (Providence: Berghahn, 1995) at 123: "The unmentionable crimes committed *in the name of* the German people demand a moral and material restitution" [emphasis added]. Adenauer thus insisted that these crimes were committed despite the opposition majority of the Germany people.
[174] This would apply for instance to confiscation of the Amerindian or Palestinian lands, from which peoples draw a benefit even in the absence of any personal responsibility.
[175] See generally Elazar Barkan, *The Guilt of Nations: Restitution and Negotiating Historical Injustices* (New York: Norton, 2000). A parallel can be drawn with measures promoting education to climate change. See infra note 183.

consequences of excessive GHG emissions. Fourthly, the fiction that the state is responsible for the deeds of its government should not stretch to suggest excessive consequences on individuals, in particular through requiring that a people pays full reparation for historical wrongs resulting in mass injuries through instalments over a long period of time.

For what concerns historical emissions, this suggests significant diminution of climate change reparations, especially if no distinct present benefit can be identified for the responsible state or its population.[176] But these considerations also plead for a diminution of climate change reparations on the ground of the continuing failure of states to prevent excessive GHG emissions. The level of climate change reparations should not be asserted solely on the ground of the injury, but also in relation to the need for sanction and by taking the situation of the responsible states duly into account. The indirect nature of the harm caused through excessive GHG emissions and the widespread failure of states to prevent such emissions suggest that full reparation would be disproportionate to the "culpability" attached to states' wrongful conduct.

Climate change reparations should therefore be significantly lower than the valuation of the harm that it causes. Nevertheless, climate change reparations should not to be reduced to a trivial payment of "environmental indulgences" through an institutional practice of "selling rights to destroy nature."[177] Rather, climate change reparations should constitute a sufficient incentive for urgent climate change mitigation policies. It is thus necessary, at the very least and in very abstract terms, that the cost immediately imposed to a state for its failure to prevent marginal GHG emissions exceeds the interest that it attaches to this marginal GHG emissions, so that each state is incentivized to reduce its GHG emissions.[178] This does not suggest a full application of the polluter-pays principle, but only its application at the margins in order to foster any possible reductions that a state can realistically realize within any given period of time.

Moreover, climate change reparations need to be politically negotiated. Adjudication is highly unlikely, and, even if it occurred (perhaps through an advisory opinion of the International Court of Justice) and led to a finding on reparations, compliance would be contingent to the good-willingness of responsible states. The negotiation of climate change reparations need to take place in highly unfavourable geopolitical settings, where the responsible states tend also to be the strongest diplomatic powers, while the states most affected are among the weakest nations. These geopolitical settings do not mean that climate change reparations are doomed: to the contrary, the experience of spontaneous reparations schemes for mass atrocities[179] and the theories of "policy entrepreneurship"[180] or "norm entrepreneurship"[181] all come to suggest that it is possible for relatively weak but astute and

[176] Limitations of reparations for historical emissions could also partly be justified in relation to the characterization of states' obligations under the no-harm principle. If the no-harm principle only gives raise to a due diligence obligation, state responsibility should not arise in relation to excessive GHG emissions which predate the emergence of a scientific consensus on the anthropogenic cause of climate change. See discussion in Mayer, *supra* note 8, para. 25.

[177] Robert E. Goodin, "Selling Environmental Indulgences" (1994) 47 Kyklos 573 at 575.

[178] This might appear as an extraordinarily unambitious objective, except that it is already well-beyond the current agreements or negotiations.

[179] See for instance Luxembourg Agreement, *supra* note 86; and, more generally, Barkan, *supra* note 175.

[180] Caner Bakir, "Policy Entrepreneurship and Institutional Change: Multilevel Governance of Central Banking Reform" (2009) 22 Governance 571; Michael Mintrom and Phillipa Norman, "Policy Entrepreneurship and Policy Change" (2009) 37:4 Policy Studies Journal 649.

[181] Martha Finnemore and Kathryn Sikkink, "International Norm Dynamics and Political Change" (1998) 52 International Organization 887; Ian Johnstone, "The Secretary-General as Norm Entrepreneur" in Simon Chesterman, ed., *Secretary or General: The UN Secretary-General in World Politics* (Cambridge: Cambridge

well-organized advocacy coalitions to successfully claim for just and strong causes. If climate change reparations are to contribute to foster efforts to avoid cataclysmic climatic change, however, timing is clearly of the essence. The current workstream on loss and damage could initiate such considerations within the climate regime, although any idea of reparation has continuously faced the fierce opposition of industrial states.

In order to facilitate the prompt negotiation of climate change reparations, one need to identify possible areas of trade-offs and conceivable second-best ideals. Climate change reparations have a restitutive function consisting in repairing a harm caused through a wrongful act (i.e. the impacts of anthropogenic climate change, resulting from excessive GHG emissions) and an instrumental function of promoting the cessation of the continuing wrong (the failure of numerous states to prevent excessive GHG emissions). As argued above, the instrumental function is by far the most urgent: in a pragmatic perspective, it is more crucial to prevent further harm than to advocate for compensation for the harm already caused.[182] The most urgent remedy to a creeping crisis such as climate change should ensure or incentivize the prompt cessation of the harmful conduct, namely through climate change mitigation. A second-best climate change reparations regime should accordingly seek to provide an adequate economic and political signal for climate change mitigation policies, while avoiding as far as possible to impose additional costs onto the states most affected by climate change. It should only extend to providing material reparations as far as necessary in order to constitute an incentive for climate change mitigation.

Beyond material reparations, however, significant measures of satisfaction should constitute an integral part of any climate change reparations regime in order to reinforce a political signal for climate change mitigation. Symbolic measures such as a clear acknowledgment of responsibility, an apologetic attitude of relevant states officials and a policy of memory – including through education to climate change,[183] efforts to raise public awareness, or even, for instance, the construction of museums – could play a great role in triggering a necessary questioning of the unsustainable development model that led virtually every state to fail to take adequate measures to protect the global environment. Material reparation and symbolic measures would be mutually reinforcing, as symbolic measures would be perceived as insincere if they were not accompanied by some measure of material reparations, while material reparations alone might not provide a sufficiently clear political signal without some symbolic expression.

B. Implications for General International Law

The previous reflections should also question the way reparations are thought of in general international law. More specifically, it suggests that there are exceptions to the general norm, identified by the International Law Commission, according to which "[t]he responsible State is under an obligation to make full reparation for the injury caused by the internationally wrongful act."[184] These exceptions are not by nature confined to a *lex specialis* applicable to distinct fields: they are of a general nature, applying to analogous situations across diverse

University Press, 2007) 123; Lesley Wexler, "The International Deployment of Shame, Second-Best Responses, and Norm Entrepreneurship: The Campaign to Ban Landmines and the Landmine Ban Treaty" (2003) 20 Arizona Journal of International and Comparative Law 561.

[182] See above section II.C.

[183] See e.g. UNFCCC, *supra* note 10, art. 6(a)(i); Kyoto Protocol, *supra* note 10, art. 10(e); and decision 19/CP.20, "The Lima Ministerial Declaration on Education and Awarness-raising" (2014).

[184] Draft Articles on State Responsibility, *supra* note 12, art. 31(1).

fields of international law. These exceptions include the "legal principle of general application," as identified by the International Law Commission itself in its first reading of the Draft Articles on State Responsibility, according to which measures of reparation should not "result in depriving the population of a State of its own means of subsistence."[185] But beyond the capacity of the responsible state to pay, a diminution of reparation could also be justified on grounds such as the indirect nature of the injury, the significant disproportion between the injury and the wrongfulness of the act, or the limitation of collective responsibility as a form of "rough" justice in cases of large injuries.

In addition, the example of climate change shows that technological advance as well as our improving understanding of complex causal relations make it increasingly likely that mere inadvertence or possibly wilful commission of mass atrocities are identified as the cause of catastrophic loss and damage, which challenge the assertion of a one-size-fits-all assertion obligation to make full reparation. It is important that international law and its doctrine be prepared to deal with such cases. International jurisdictions should be recognized a certain leeway for an equitable assertion of remedial obligations, taking account not only of the extent of the injury, but also of the resources and the "culpability" of the responsible state, and of the opportunity of imposing costly reparations onto the population of that state, given its particular political circumstances. Moreover, as international law also plays a role as a source of legitimacy in international relations, the affirmation of an unconditional obligation to make full reparations could encourage claims that are morally excessive or politically unrealistic, and in any case unlikely to be met. *In fine*, these claims are most likely to severe international tensions between nations and hinder international negotiations, thus defeating the main purposes of international law.[186]

In a somewhat philosophical sense, one may actually doubt whether any reparation can be full, at least when the injury is not limited to purely material, fungible goods. Loss of lives, environmental damages, or even of unique or irreplaceable properties, can simply not be fully made up for.[187] In this perspective, reparation is rarely, if ever, able to "wipe out all the consequences of the illegal act"[188] or to make the injured party "whole";[189] rather, its objective is essentially to minimize the damage caused[190] and to deter further breaches of international law. As Dinah Shelton once argued, notions such as full reparation "do not facilitate decision making by tribunals or claims practice of parties because they are too general to provide practical guidance."[191] The nature of remedial obligations relates not only to the ambit of reparation, but also to its form. The assertions of remedial obligations should not be limited to an automatic assessment of the possibility of restitution, compensation, or else measures of

[185] First reading of the Draft Articles on State Responsibility, *supra* note 72, commentary under art. 48, at para. 8(a).
[186] See in particular UN Charter, *supra* note 131, art. 1.
[187] See e.g. B.E. Allen, "The Use of Non-pecuniary Remedies in WTO Dispute Settlement: Lessons from Arbitral Practitioners" in M.E. Schneider and J. Knoll, eds., *Performance as a Remedy: Non-Monetary Relief in International Arbitration* (Huntington: Swiss Arbitration Association and Juris, 2011) 281, at 299; Summary Records of the 2399th meeting of the International Law Commission, UN Doc. A/CN.4/SR.2399 (1995), at para. 24.
[188] *Factory at Chorzów*, P.C.I.J. Ser. A No. 17, at 47.
[189] Opinion in the *Lusitania* Cases, decision of 1 November 1923, VII Reports of International Arbitral Awards 32, 39: "The remedy should be commensurate with the loss, so that the injured party may be made whole."
[190] See S. Sharpe, "The Idea of Reparation" in G. Johnstone and D.W. van Nees, eds., *Handbook of Restorative Justice* (Cullompton: Willan, 2007) at 26.
[191] D. Shelton, "Righting Wrongs: Reparations in the Articles on State Responsibility" (2002) 96 American Journal of International Law 833, at 845.

satisfaction, or to the determination of the quantum of reparations based on the valuation of the injury: it requires a more flexible decision based on a careful and detailed appraisal of the case.

V. CONCLUSION

Responsibility and reparation in international law fulfil two concomitant functions: addressing an injury and sanctioning a wrongful act.[192] The principles recognized in positive international law, including the principle that a responsible state is obligated to make full reparation, were identified by international jurisdiction, often in cases regarding a relatively minor injury that could have significant consequences, in particular in the symbolic sphere, in the relation between states. In turn, efforts at codifying the law of state responsibility, in particular in the work of the International Law Commission, often took the limited practice of international jurisdiction as the basis on which to develop rules of general applicability.

Thus, relatively little importance was given to the need for different rules to apply to atypical cases, such as those involving large-scale damage,[193] especially when they resulted from mere negligence as opposed to wilful acts, or when the responsible state was unable or otherwise unlikely to make full reparation. International jurisdictions were not always insensitive to the dangers of indicating measures of reparations that would probably not be complied with, and which could fuel geopolitical tensions, but they often preferred to disguise such considerations on other grounds.[194] As technological advance make claims for large reparations increasingly likely, doctrinal theories need to be developed regarding the limitation of the obligation to make full reparation.

Discussions on the nature of climate change reparations are prone to contribute to such doctrinal developments. Full reparations, in the context of climate change, is not only politically unrealistic and possibly toxic to friendly relations among nations. The indeterminacy of applicable remedial obligations and the spectre of demands for full or otherwise expansive reparations schemes have literally blocked any explicit recognition of responsibility by industrial states. Because the risks of admitting responsibility were too high, Western leaders have often turned to an attitude of denial – denying either any scientific evidence of anthropogenic climate change, or (hardly more subtly) any form of "fanatic" finger-pointing[195] and any ground for specific obligations of industrial states in relation to climate change.

As the concept of loss and damage is gaining momentum in international climate change negotiations, and while negotiating powers are shifting in favour of emerging economies and developing states generally, a window of opportunity might be opening for industrial states to acknowledge their responsibilities and to accept some form of reparations, thus providing a strong economic and political signal for climate change mitigation. In this process, however, the relevance of the international legal principle of responsibility in the context of climate change can only be advanced on the basis of a nuanced understanding of the applicable remedial obligations, admitting valid grounds for a reasonable diminution of reparations.

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[192] See *supra* note 148.

[193] See however Tomuschat, *supra* note 83, at 293. Tomuschat noted that, in the determination of war reparations, "account was always taken of the actual capacity to pay."

[194] On the case of *Application of the Convention on the Prevention and Punishment of the Crime of Genocide*, see *supra* note 130.

[195] UN Senate, 105th Cong., 143 Cong. Rec. S8117 (25 July 1997). Senator Byrd also proclaimed: "the time for pointing fingers is over." The present article is an argument about how to bring the time for pointing fingers to an end, through a reasonable offer of reparations.

Concerning a continuing wrongful act with the most alarming consequences for civilization and mankind, climate change reparations should first and foremost be designed to provide a strong incentive in favour of a prompt reduction of GHG emissions.