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CLIMATE CHANGE MITIGATION JUSTICE AND THE NO-HARM PRINCIPLE[1]

Łagodzenie skutków zmiany klimatu a zasada nieszkodzenia

Słowa kluczowe: biosfera, prawo socjalne, ekologiczne prawo naturalne, zasada nieszkodzenia, zbrodnia przeciwko ludzkości, koncepcja harmonii, epistemologia sprawiedliwości, archeologia wiedzy

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Streszczenie

Każdy przydział emisji prowadzi do przyznania praw emisyjnych opartych na sprawiedliwości dystrybutywnej (nawet jeśli taktyka była wcześniej zweryfikowana pod względem utylitaryzmu na poziomie filozoficznym). W konsekwencji podejście sprawiedliwości dystrybuowanej legitymizuje poziom emisji. Gdy konkretny poziom emisji zostaje uprawomocniony, o ile jest zgodny z ustanowionym budżetem emisji, w celu podziału uprawnień do emisji, w momencie , gdy poziom emisji osiągnął pewien niebezpieczny poziom pojawia się zrozumiała potrzeba zachowania funkcjonującego „zrównoważonego"

Abstract

When translated into concrete policy, any allocation of emissions leads to the attribution of emissions rights based on distributive justice (even if the policy was previously examined in terms of utilitarianism at the philosophical level). Consequently, the distributive justice approach legitimizes the corresponding amount of emissions. If a certain level of emissions can receive emissions rights, provided they are compatible with a certain emissions budget, to allocate emissions rights when the dangerous concentration level has been overshot could understate the need to preserve the

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programu klimatycznego. Z perspektywy Foucaultowskiej archeologii wiedzy i w celu oceny epistemologii zmiany klimatu będzie możliwe podważenie możliwości przejścia z modelu definiowania norm prawa socjalnego na model łagodzenia skutków zmiany klimatu.

functioning of a "balanced" climate system. From the perspective of Foucault's archaeology of knowledge, and with the purpose of assessing the epistemology of climate justice, it will be possible to question the possible importation of the mode of production of norms of social law into climate mitigation justice. Additionally, it will be questioned whether the amount of anthropogenic emissions rights can be provided by "the laws of nature" and whether and how the no-harm principle can contribute to the epistemological relevance of the narrative of climate justice.

I. Introduction

A. Climate Change Justice as Burden Sharing Justice

According to Caney, ethical reflection on climate change mitigation justice can be called "Burden Sharing Justice" (Caney 2014: 127). The burden sharing justice approach tries to determine the burden that each emitter has to bear to reduce and pay for his emissions (Caney 2005: 751) by focusing on those who created the climate change problem, those who have the capacity to pay, and those who benefited from the emissions (Caney 2014: 126–27). For instance, the Greenhouse Development Rights Framework intends to take into account the ability to pay and the historical responsibility of emitters in order to share climate change mitigation efforts (Baer, 2013: 64).

Similarly, the United Nations Convention on Climate Change (hereinafter "the Convention") states that country Parties "should protect the climate system" in accordance with the principle of "common but differentiated responsibilities and respective capabilities" (United Nations 1992: Art. 3.1), and with regard to "their specific national and regional development priorities, objectives and circumstances" (Ibidem: Art. 4.1). Consequently, "developed country Parties should take the lead in combating climate change" (Ibidem: Art. 3.1). The GHG stabilization commitment undertaken by developed countries is, however, not clearly expressed (Ibidem: Art. 4.2a; Gupta 2006: 127). In terms of moral philosophy, the Convention has to be interpreted from the perspective of burden sharing justice. When translated to the real world, burden sharing justice allocates emissions rights for a global amount, and then pro-

gressively reduces them. The question is whether there is a level above which it is no longer possible for moral philosophy to allocate emissions rights. The answer will be outlined in three points.

First, the purpose of the Convention is to avoid a dangerous interference with the climate system due to an excessive concentration of greenhouse gas (GHG) in the atmosphere (Art. 2). The Paris Agreement set forth a temperature target (United Nations 2015a: Art. 2.1a) that can be translated into a level of GHG concentration in the atmosphere (Rogelj et al. 2015: 519–27); Robiou du Pont et al. 2017: 38–43). Furthermore, it can be assumed that a high concentration of atmospheric GHG is a "poison" for the biosphere's ecosystems and mankind's life-support system.[2] Eventually, through a complex, but causal, chain, anthropogenic emissions can harm people and political communities, a and can also create stressful conditions for peace and security (Christiansen 2016: 21, 35).

Second, it can be hypothesized that the temperature target is an accepted norm that no longer makes it essential to balance the benefit of GHG emissions and the damage they cause (this latter debate is closed from a normative perspective). The temperature norm forces a divide between acceptable and unacceptable damage, and consequently between acceptable and unacceptable emissions levels.

Third, allocating emissions rights – under the duty to reduce emissions – is credible to the extent that the risks can be considered acceptable. If the risk is unacceptable, if the concentration of GHG in the atmosphere is already too high, the duty to reduce emissions does not necessarily entail a right to emit at a level that is still too high. For instance, one can have the duty to reduce emissions from "10" to "7" with "7" as the correct amount deserving to be legitimized by rights without necessarily having the right to emit "9" or "8". An analogy can be drawn with an offender who is driving at 120 mph in an area where the speed limit is 60 mph. The offender can decelerate from 120 mph to 60 mph without having the specific right to drive at 80 mph. By analogy, the duty to limit emissions implies the allocation of emissions rights if, and only if, the amount of rights to be allocated does not

[2] According to Caney, GHG are "goods". Focusing only on GHG as specific goods dismisses the fact that partial trade-offs between GHG and other goods, such as energy, are possible (Caney 2012: 264, 265, 271, 275, 287). I disagree with Caney's definition since emissions are only the by-product of the production and consumption of goods, which is different. If emissions were goods, mankind ought to use them as resources instead of emitting them into the atmosphere. As Paracelsus stated, the dose makes the poison.

breach a norm or contribute to unacceptable damage. In other words, the level of emissions rights should not necessarily match the capacity to reduce emissions. It is thus necessary to know whether the allocation of a certain carbon budget is limited and what an unacceptable level of emissions is.

B. Climate Change Justice Under the No-Harm Principle

The no-harm principle can be viewed as a prevention principle that is steeped in the formula "do not harm!". The no harm principle relates to the Aristotelian notion of arithmetical proportion (Aristotle 2006: NE, V, 4B). According to Weisbach, tort law imposes liability on the offender, regardless of whether he is poor or rich. Tort law is based on harm to victim, not on the condition of the injurer (Weisbach 2011: 559). By extension, whatever the wealth of the injurer, it is equally forbidden to harm others.

According to Gupta, "climate treaties should have been based more on the 'no harm' principle since it would have put pressure on current polluters", and on future polluters (Gupta 2006: 120–27). On the one hand, to base climate change justice on the no harm principle seems crucial; on the other hand, there would be no pathway to build a reasoning from the Convention based on the no harm principle.

Weisbach explains that there are many hurdles in the way of the strict liability that intervenes after a norm is breached. Among other arguments, "there is little connection between past emitters, future victims, and the individuals who would have to pay under a responsibility-based measure (Weisbach 2011: 558). Such an uncertain link creates a situation where, if strict liability should apply, the potential offender should be told the reasons in advance (Ibidem: 557). Weisbach's remark seems to confirm the need to develop the preventive dimension of the no harm principle, especially since he concludes that strict liability only helps with moral suasion (Ibidem: 565).

Shue asks what emissions level does not count as excessive and cannot be considered a source of transboundary damage (Shue 2014: 1). His objective is to fuel discussion about possible litigation of moral responsibility for those who undermine the fundamental pre-conditions of human life (Ibidem: 19). Shue bases his analysis on the carbon budget approach for determining a state's allowable carbon budget. Shue's first compliance factor is "how strenuous the state's efforts have been to reduce its emissions" (Ibidem: 9). In other words, a state has to do everything that could be reasonably expected (Idem).

The compliance factor can be alleviated provided that a significant part of the state's population suffers from energy deprivation. It can be confirmed as discriminant if the level of emissions per capita is high and if the percentage of total cumulative emissions is high on a per capita basis (Ibidem: 9, 10, 17).

On the one hand, Shue's approach aims to assess the "wrongfulness of state behaviour" (Ibidem: 18). On the other hand, his approach falls within the scope of distributive justice since it focuses on a question of equity. It aims to define the fair distribution of a "carbon budget" considered as an "increasingly scarce good", knowing that distributive issues "are unavoidable here because a shared good must be divided" (Ibidem: 12). In other words, he wants to tell us about a breach of the no-harm principle without discussing the arithmetical equality of emissions rights (regardless of emitters' respective capabilities), which could be considered an appropriate answer since no one deserves to get "more rights" to harm others.

However, the hypothesis of collective wrongdoing could lead to the recognition that no one – rich or poor – can wrongfully harm others. Due to the collective dimension of this particular wrong, the amount of emissions rights could be limited on a strictly egalitarian basis since no one – no country Parties – has more rights to wrong others. Under this hypothesis, the enjoyment of emissions rights is no longer related to emitters' needs, inasmuch as the objective of the no harm principle is to limit, on an equal basis, participation in a wrongdoing without consideration for the circumstances and capabilities of emitters.

For instance, the Alliance of Small Island States (AOSIS) has introduced a criterion that seems to support the claim of a breach of the no-harm principle. The 2007 Male' Declaration on the Human Dimension of Global Climate Change specified that the concentration of GHG shall stabilize at 450 ppm CO_2eq, given the perspective of a temperature target well below 2 °C above pre-industrial averages (AOSIS 2007: 2). Knowing that the 2017 level of atmospheric GHG has already reached 493 ppm CO_2eq and that it is growing at 3 ppm to 4 ppm annually (NOAA 2018a), one could determine the amounts of emissions already contributing to a breach of the no-harm principle. In other words, it seems possible to draw a line between anthropogenic emissions of acceptable and unacceptable amounts of "poison" for the biosphere's ecosystems and the related divide between tolerable and intolerable impacts on human beings. A complete understanding of the no-harm principle can lead us to reconsider the relevance of using distributive justice to allocate rights to excessive emissions levels.

C. Theoretical Framework: Why Heed the Epistemology of Climate Justice?

Justice is not only made of legal concepts, principles, and norms. It is also made by science to the extent that any judgement is also a form of evaluation about what is true and false, and at risk or safe. To stabilize the atmospheric GHG concentration does not require the same corpus of knowledge as alleviating work accidents (Piguet 2014: 81120). Therefore, answering to a new question of justice, such as climate change, could be impaired by a way of thinking inherited from another epistemology, hence the need to delve into the perspective of Foucault's archaeology of knowledge (Foucault 1994) and the subsequent work of his alumnus (Ewald 1985; 1994). Such a historical overview of the relationship between justice and the underlying epistemology of judgement would offer a broader perspective and enlighten the radical novelty of climate change justice by comparison with social justice.

According to Ewald, from the perspective of philosophy of law, a judgement has to fit the epistemology of the evaluation practice used in the related case. Historically, evaluation practices have brought new sets of questions to the field of justice. Questions of justice would be determined less by morality than by a specific epistemological configuration (Ewald 1985: 227), although there is no justice without an appetite for morality (Thomas Aquinas 2000: ST, II-II, Q. 58, a.4).

For instance, thanks to social statistics, it was possible to enlarge the insurance technique that determines the probability of damage, and thus to identify the sociological causes of poverty, and to think about the social repartition of different classes of risks (Ewald 1994: 357), a category of problems that initiated the preoccupation for "social law". Social law as a regime of law followed modern natural law, which itself followed classical natural law, each evolution proceeding from an "epistemological shift" – in the specific sense defined by Foucault's archaeology of knowledge.[3] An epistemological shift is pervasive in almost all disciplines and to some extent contributes to a cultural revolution (on the same magnitude as the revolution needed to prevent a climate catastrophe).

For example, much evidence shows that social law was somehow the by-product of social statistics and human sciences, and it was not possible to envisage social law before the advent of this specific epistemological configuration. According to Foucault, this epistemological

[3] A justification of Ewald's point is outside the scope of this article. (For further analysis, see Ewald 1985 and Piguet 2016).

change was linked more generally to the emergence of human sciences. Human sciences originated partly from the split between natural history and human history. This split in the historical narrative occurred in the late eighteenth century with nature acquiring its own historical time and human history becoming the source of all human sciences (Foucault 1994: 367–69). The subject of human sciences is that human being who, "from within the forms of production by which his whole existence is governed, forms the representation of those needs, of the society by which, with which, or against which he satisfies them" (Ibidem: 353). In this epistemological configuration, human nature has nothing to teach about human beings' condition; the concept of human nature is outside the scope of human sciences. Human sciences are animated by a sort of transcendental mobility (Ibidem: 364) since it is always possible to make human sciences of human sciences (Ibidem: 354–55). They translate the relativity of the positive forms taken by society, and they are always in the process of being renewed.

In this epistemological configuration, the norm is social because it is rooted in the sociological observation of the production process and in statistics that scan the social masses and invent the concept of the average man, which further animates the construction of social norms (Ewald 1994: 152–61). Social norms are thus fluid inasmuch as they are conceptualized through the empirical observation of the evolution of the average man and society (Ewald 1985: 240). The norm is not considered social because human beings formulate the norm, but because the observation of society's evolution by human sciences constitutes the facts taken into account by any moral and legal judgements. In the epistemological configuration of social law, nature is at best a social construction and by no means the source of any social order (Ewald 1994: 501). No limit can be found either in nature or in a state of nature (Ibidem: 420–21). Social law aims to find transitory balances between mankind and other species (Ibidem: 420), economic growth and sustainability, and liberty and social protection, while following ever-changing power relationships (Ibidem: 421). Social law does not have a specific content and therefore does not lie in an external rationality outside social conflicts, inasmuch as norms are themselves the objects of conflicts (Ibidem: 513). Such an epistemological configuration does not constitute a problem with regard to social issues since it both shapes social issues and is made from them.[4]

[4] This brief presentation on the epistemological configuration of social law does

However, if the evolution of the epistemology of judgement explains the evolution of any regime of law, it can be assumed the epistemology of climate justice objectives should entail a radically new regime of law able to make a true narrative of climate change. Court decisions intertwine law and parts of competing narratives in order to constitute a broader narrative (Rideout 2008). A narrative's "fidelity" – that is to say its substantial content – seems true insofar as people find some correspondence with stories about their lives that they know to be true. Furthermore, for the sake of persuasion, a narrative has to have an external coherence by referring to other narratives known to be true (Rideout 2013: 72). From that perspective, if climate justice did not pay enough attention to the epistemology embedded in the main objectives of climate law, its narrative would be neither convincing nor true. Therefore, the persistence of some characteristics of the epistemological configuration of social law in climate change justice would imply that the narrative of distributive justice does not tell the truth about the condition of humanity within a limited life-support system. An epistemology of judgement unable to consider nature as a source of norms could become a hindrance when considering ecological issues at the global scale at a time when civilization is entering a new geological age, the Anthropocene, which once again intertwines the time of humans with the time of nature as mankind becomes a geological force (Crutzen 2006: 17). In other words, the Anthropocene would close the parenthesis of an epistemological configuration that separated the history of nature from the history of man during which nature could not become a source of norms.

D. Scope of The Paper: Enlightening Key Elements of the Archaeology of Knowledge

This article assesses the relevance of distributive justice and the no-harm principle. Using key elements of the archaeology of knowledge, it tries to determine how to reflect the truth and radical novelty of the main objective of climate justice.

Given the perspective of the epistemology of judgement, the first hypothesis is that scientific ecology, climate science, Article 2 of the Convention, and the global temperature target seem to create a new

not translate the complexity of the archaeology of knowledge, and the "model" of social law could seem not subtle enough. However, it is not presented for dismissing any criticism, but as a useful "tool" of enquiry able to enlighten some contradictions of climate justice.

epistemology of judgement that does not pertain to the configuration of social law. Therefore, this assessment will start with a careful analysis of the Convention's objective from the perspective of the philosophy of law and the epistemology of judgement (*infra* II). What exactly is its purpose and what is the mode of thought when a dangerous level of GHG concentration in the atmosphere is reached? To what extent can it be said that the norm of anthropogenic emissions rights is provided by "the unchanging and universal laws of nature"[5] and can the tradition of natural law[6] be revived on a new basis? In other words, to what extent can one say that nature and the close observation of nature are the sources of a norm of emission? The analysis aims to confirm that the epistemology of the objective of climate law should be viewed as being outside the epistemological configuration of social law.

The second hypothesis is that using distributive justice to allocate emissions rights has been done without abandoning the epistemological configuration of human sciences and social law (*infra* III). There is no doubt that any allocation of emissions by distributive justice, when translated into a concrete policy, leads to the attribution of emissions rights.[7] If emissions rights are allocated at too high a level, they could depreciate the objective of preserving the functioning of a "balanced" climate system and the need to preserve "the essential physical underpinnings of human agriculture and the rest of the human economy" (Shue 2014: 3). Therefore, the attribution of rights in a situation where global emissions continue to rise seems to translate the fluidity of social norms. Ethicists seem to have not totally abandoned an idea inherited from social law which leads to the consideration that the current level of emissions – at the beginning of the time-series of each of their emissions reduction scenarios – determines the level of emissions rights at this specific moment (the beginning of the time-series). This raises questions about the possible importation of the mode of production of social norms into climate change justice.

If it is possible to dismiss the ability of distributive justice to allocate emissions rights, how can the consistency of climate justice be

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[5] United Nations Brundtland Commission, *World Commission on Environment and Development (WCED): Our Common Future*, 1987, 330. Cited by: (Voigt 2013: 157).

[6] I am not pleading for a systematization of natural law outside the scope of ecological issues. Natural law simply means normative sustainability shall be inspired by close observation of nature in accordance with the epistemology of climate science and, more broadly, with scientific ecology.

[7] This is true even if the allocation has been previously formulated in terms of utilitarianism at the philosophical level.

maintained? Through examination of the atmospheric concentration of GHG, it will be possible to ask whether the current level of concentration would trigger a dangerous interference with the climate system. It will be suggested that the no-harm principle translates key elements of the epistemology of judgement of Article 2 UNFCCC and indisputably pays heed to the temperature target. In other words, it will be suggested that the no-harm principle tells the truth of climate justice and helps to frame a coherent judgement from both moral and epistemological perspectives.

II. Stabilizing Greenhouse Gas (GHG) Concentrations: Nature as a Source of Norm?

A. Stabilization as an Objective Set Forth by the Convention

It is crucial to explain, from the perspective of philosophy of law, the profound originality and newness of the objective of the United Nations Convention on Climate Change (United Nations 1992) as stated in Article 2.

"The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, (…), stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened" (United Nations 1992a: Art. 2).

When referencing "dangerous interference" and seeking "to ensure that food production is not threatened", the Convention states that the threshold of dangerous interference with the climate system has both human and scientific components (Fisher 2011: 24).

Besides reducing emissions to stabilize the atmospheric concentration of GHG, the objective defined by Article 2 involves logically maintaining a balanced composition of the atmosphere over the long term. However, the principle of stabilization of greenhouse gas seems not to have drawn attention. Bodanski and Christiansen ignored it (Bodansky 1993: 499–500; Christiansen 2016: 59–63). Ott only mentioned the idea of a carbon balance (Ott et al. 2004: 26, 96), while Oppenheimer and Petsonk focused on the definition of dangerous interference as well as on emissions pathways (Oppenheimer & Petsonk 2005: 21, 28).

The principle is nonetheless very interesting from both normative and epistemological perspectives.

B. The Scope of the Principle of the Stabilization Level of Atmospheric GHG

Article 2 of the Convention sets forth a principle for stabilizing concentrations of GHG in the atmosphere. Technically, the stabilization of GHG concentrations is expressed in carbon dioxide equivalents (CO_2eq). The notion of stabilization is related to the balance between "sources" and "sinks" of "natural and anthropogenic"[8] greenhouse gases.[9]

Depending on the GHG considered, sinks are terrestrial, oceanic, or atmospheric (Pacala 2010: 16). Terrestrial and oceanic sinks remove CO_2 from the atmosphere. Atmospheric phenomena play the role of sinks for nitrous oxide and methane: nitrous oxide decomposes through photochemical processes while methane oxidizes. Both are natural processes that remove these gases from the atmosphere (Idem). In other words, the atmosphere is its own sink of nitrous oxide and methane; however, carbon dioxide is captured by oceanic and terrestrial processes.

Stabilizing atmospheric GHG concentrations means the *level of* emissions – the sources – is balanced by the extraction of GHG by sinks, no matter whether they be "natural" or "artificial". Whatever the effective concentration of GHG in the atmosphere that would be considered the upper limit before reaching the level of dangerous interference with the climate system, it will be necessary to maintain the agreed-upon level through an equilibrium between the flow of GHG emissions from sources (positive emissions) and removals by sinks (negative emissions).

In other words, the principle of stabilization for atmospheric GHG concentrations states that natural and artificial sinks that extract GHG emissions from the atmosphere, minus natural emissions, will determine the upper limit of anthropogenic emissions that shall be respected in order to maintain atmospheric GHG concentrations below a dangerous level over the long term. Such an equality can be expressed as follows:

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[8] UNFCCC 1992: Art. 1.5.

[9] Consider CO_2: "The atmospheric accumulation of CO_2 is the balance between fossil fuel and land-use change emissions, and the uptake due to oceanic and terrestrial sinks." (Watson et al. 1992: 25–46)

allowed anthropogenic emissions	=	*removals from natural sinks + removals from artificial sinks – natural emissions*

In this regime, modifications of the sinks' capacities and emissions by natural sources dictate the fair level of anthropogenic GHG emissions. The above equality substantiates the view of Cullinan, stating that the laws of physics, chemistry, biology, and ecology constitute the "laws of nature" that encompass human legal systems (Cullinan 2013: 103). In order to preserve mankind from being sanctioned by nature, the human legal system shall not contravene fundamental "Earth laws" (Ibidem: 104). The norm of the maximal level of GHG emissions rights is defined primarily by nature.

Balance in the climate system relates to the concept of harmony with nature, which is a constant preoccupation of the UN General Assembly. Therefore, what exactly is the scope of this concept when it is considered through the principle of stabilization of atmospheric GHG concentrations?

C. Harmony with Nature According to the UN General Assembly

The international legal concepts of harmony with nature and of a balanced nature have been expressed in various texts. The third recital of the preamble of the Declaration of the United Nations Conference on the Human Environment states there is a threat to "the ecological balance of the biosphere" (United Nations 1972: §3). The 1984 World Charter for Nature gave the General Assembly the opportunity to remind countries about "the promotion and development of co-operation aimed at protecting and safeguarding the balance and quality of nature" (United Nations 1984: §3). The preamble of the Annex of the same text states the reasons for safeguarding the balance and quality of nature: "Mankind is a part of nature and life depends on the uninterrupted functioning of natural systems" (Ibidem: §2a).

The concept of harmony with nature is also included in the World Charter. It expresses the need to respect the balance of the functioning of nature: "Civilization is rooted in nature, which has shaped human culture and influenced all artistic and scientific achievement, and living in harmony with nature gives man the best opportunities for the development of his creativity, and for rest and recreation" (Ibidem: §2b). Among other texts, the Rio Declaration on Environment and Development states in its first principle that human beings have the right to live in harmony with nature: "Human beings are at the centre of con-

cerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature" (United Nations 1992: Principle 1). Living in harmony with nature is also mentioned in the General Assembly's 2012 resolution The Future We Want, which calls "for holistic and integrated approaches to sustainable development that will guide humanity to live in harmony with nature and lead to efforts to restore the health and integrity of the Earth's ecosystem."[10] The same resolution develops an additional concept about the importance of the health of Earth's ecosystems and the eradication of poverty, two objectives that can be met by a "green economy".[11] Similarly, the 2015 UN Resolution on the 2030 Agenda for Sustainable Development addresses the concept of "harmony with nature" under the subhead "prosperity", thereby linking prosperity and harmony.[12] In other words, respect for the balanced functioning of the biosphere's ecosystems is the essential condition for living in harmony with nature.

The concepts of harmony and balanced functioning are toothless, but they become promising when looking at the principle of stabilizing GHGs at a level that is not dangerous. For instance, the Paris Agreement explicitly links the concept to the principle in stating explicitly that anthropogenic sinks should balance anthropogenic emissions: "Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, [...] so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century" (United Nations 2015a: Art. 4.1).

In addition to Article 2 of the Convention, the above provision enlightens and provides a concrete formulation to the concept of harmony with nature. All these formulations are grounded on the same preoccupation and have the same perspective. Article 2 of the Convention and Article 4.1 of the Paris Agreement state clearly a general duty to establish a balance between emissions by sources and removals by sinks, an obligation that matches the right and duty to live in harmony with nature.

The shared perspective of these concepts and principles could shed light on the importance of thinking about an emissions norm in terms

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[10] United Nations 2012: §40. The principle of harmony with nature is repeated in §§ 39 and 202.

[11] Ibidem: §56. Without a strong and structured reference to the laws of nature, the green economy allows the logic of markets to determine the future of nature (Bratspies 2013: 297).

[12] United Nations 2015b: §1. The principle of harmony with nature is repeated in goal 12.8, and §9.

of nature. However, the possible and future implementation of artificial sinks could mean that the norm of emission is no longer provided by nature.

D. The Looming Question of Anthropogenic Sinks

What is the importance of anthropogenic sinks when they are considered crucial to maintaining a limited carbon budget? Afforestation of spare land is considered one of the necessary means to achieving negative emissions as quickly as possible. Combined with a positive return on soil fertility, afforestation could capture several $GtCO_2$ $year^{-1}$ in 2050, assuming less meat was consumed in the food diet of a world population of 9–10 billion people.[13] Thus, many studies have evaluated the potential of reforestation and bioenergy with carbon capture and storage into the ground (BECCS). Despite discrepancies, these studies confirm the benefits of enhancing terrestrial sinks with BECCS (Van Vuuren et al. 2013: 15–27; Caldecott et al. 2015: 19).

The Intergovernmental Panel on Climate Change (IPCC) enumerates several possible categories of carbon dioxide removal (CDR) methods (Ciais et al. 2013: 547–551). Some fall into the category of land use, land-use change, and forestry (LULUCF) (Conference of the Parties to the UNFCCC 2013: Add.3, §13). Some are clear "ecosystem manipulation", like land-based increased weathering; others are "industrial technologies", like direct air capture (DAC) (Clarke et al. 2014: 485). DAC uses different technologies – notably "amines in a solid form and the use of wet scrubbing systems based on calcium or sodium cycling" – to capture CO_2 from the atmosphere and sequester it underground or temporarily store it in different products (Ibidem: 485–486). It would also be possible to remove other GHGs, such as CH_4 and N_2O (Ibidem: 485).

These approaches to CDR aim to take nature's place in actively sequestering CO_2; however, they are highly constrained by the capacities of different ecosystems, raw materials, and technologies. To maintain a balance between emissions from sources and removals by sinks, at safe levels, implies developing a kind of "artificial nature" that imitates the cycle of material flows through the biosphere. Both nature and artificial nature have the ability to cycle material flows and car-

[13] This scenario is based on the following assumptions: diet change, yield growth, feeding efficiency, and waste reduction. The scenario can contribute to reducing the area dedicated to food production, thereby sparing land for afforestation. The total mitigation potential of such a policy would amount to 6.1-28.5 $GtCO_2$ $year^{-1}$ in 2050 (Smith et al. 2013: 2298).

bon from underground has to return underground. Consequently, nature will be complemented by artificial nature if mankind adheres to the duty to live in harmony with nature.

Nature thus defines the maximum quantity of emissions rights that should be interpreted as a human requirement. In other twords, the norm for emissions is given by the laws of nature, and normative philosophy has to interpret these laws.

E. The Perspective of the 2 °C and 1.5 °C Targets

Since the 2009 Copenhagen Conference of the Parties to the Convention and the 2015 Paris Conference of the Parties, a temperature target has been stated and continuously repeated with slight variations. The Agreement enhances the implementation of the Convention by: "Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" (United Nations 2015a: Art. 2a).

The limit has both human and ecological aspects. A temperature target is justified by understanding a climate tipping point from the perspective of the precautionary principle. The idea behind the term "tipping point" is the non-linearity of the evolution of the climate system, which could shift in a disruptive and irreparable way (Schellnhuber et al. 2016: 650). Keeping the target of 2 °C aims to avoid a brutal change in the climate system, especially in natural and agricultural ecosystems. The threshold indicates that the countries which are Parties to the Convention do not want the climate system to move too far from its pre-industrial equilibrium before human activities begin to impact nature on a large scale and at a high rate. The purpose of the temperature target is not to deviate from Earth's climate as it used to be during the pre-industrial era, from the perspective of the concept of harmony with nature (*supra* II.C). Indeed, the laws of nature are the source of the norm that has to be interpreted since they are decisive in substantive regulation (Nilsson 2013: 259).

It becomes necessary to realize that mankind cannot escape nature and, furthermore, to reject the dichotomy between morality and legality since only crude positivists find it suspicious that law is not linked to morality (Bosselmann 2013: 84). In other words, mankind must obey a norm that defines emissions rights as resulting from the close observation of nature by climate science and scientific ecology. Besides indicating what to do in terms of mitigation, the above provisions spec-

ify the sort of epistemological content that characterizes any judgement on GHG emissions levels. The Convention's objective thus revives the tradition of natural law[14] in opposition to a regime of social law (*supra* I.C).

F. The Discrepancy Between the Respective Epistemologies of Social Law and Article 2

As suggested above and summarized here – by definition – the epistemological configuration of social law cannot encompass a norm taught by nature through close scientific observation (*supra* I.C). Social norms are rooted in the sociological observation of human societies and in statistics describing societal evolution. In this regime, the norm is not considered social simply because it is human-made; it is social because empirical analysis of society by the human sciences is essential to the epistemological configuration of social law. According to this scheme, observation of nature cannot bring forth a norm that has any prevalence over social norms. In this epistemological configuration, the history of man has no ties with nature's evolution to the extent that man is a problem distinct from nature's.

The contrast with the epistemology of judgement underlying Article 2 UNFCCC and the related provisions is staggering insofar as it amounts to a clear opposition between these two regimes of truth and justice. As Article 2 logically indicates, the level of allowed emissions is mainly given by nature (*supra* II.B). The temperature limit is rooted in the theoretical modelling characterized by the non-linearity of the climate system's responses to anthropogenic emissions. Moreover, it seeks not to deviate from the state of the climate as it was before the pre-industrial era. Thus, nothing in the epistemology of natural ecological law corresponds to a decisive characteristic of the social law regime. The spectrum of intervention of natural ecological law is crucial but limited insofar as social law remains essential for the allocation of wealth and production tools (*infra* IV.F).

With that being said, it is worth examining whether the fluidity and relativity of social law norms could hinder the stabilization of atmospheric concentrations of GHGs. Is there any reason to believe such a fluidity has been imported into climate justice, even partially? If yes,

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[14] The classical natural law of Aristotle or Plato and the modern natural law of Locke or Rousseau have no ties to the epistemology of nature that underpins climate science.

to what extent does the pervasion of the epistemology of social law in climate justice and norms obstruct the ascertaining of the truth of climate change justice, hence weakening its content? Or, to put it another way, is it possible to affirm with a fair prospect of success that the more pervasive in climate justice the specific epistemology of Article 2 UNFCCC is, the more the normative corpus of climate justice would prevail over other considerations? The following stage of development examines the historical influence of the epistemological configuration of social law on climate justice.

III. The Distributive Justice of Climate Change Mitigation and Its Ties with the Epistemological Configuration of Social Law

A. The Link Between Distributive Justice and the Epistemological Configuration of Social Law

In the following section, it will be shown that the allocation of emissions rights to countries with excessively high emission levels remains partly anchored in the epistemology of social law. Empirical manifestations of societies – in this case, their current emissions level – constitute the foundation from which it is possible to develop a norm with regard to emissions rights. It will be possible to demonstrate that this epistemology implicitly underpins the interpretation of carbon budgets. Before analyzing this point, it is helpful to define the term "carbon budget" and explain how distributive justice can be used to allocate such a budget.

B. The Concept of a Carbon Budget

An emissions budget is defined as "the cumulative emissions to stay below a certain warming level" (Meinshausen et al. 2009: 1158). In other words, an emissions budget details how to avoid exceeding a certain temperature target given a certain probability.

Technically, it is clearly rooted in the epistemology of climate science. To avoid exceeding a certain target by 2 °C implies rapidly transitioning to zero emissions from the energy system by 2050 (Anderson 2015: 899). It also necessitates net negative emissions (Van Vuuren et al. 2013: 23). The carbon budget that could meet the 2 °C target im-

plies achieving net negative CO_2 emissions before the end of the century,[15] or by mid-century for the 1.5 °C objective (Rogelj et al. 2015: 521). Different ways to find an equilibrium between sources and sinks at a non-dangerous level exist insofar as the concentration might temporarily "overshoot" the long-term goal before stabilizing at that goal.[16] Scenarios that are able to limit warming below 2 °C – with a concentration level between 430-480 ppm CO_2eq – require global net negative emissions (Fuss et al. 2014: 850). But uncertainties about the actual capacities of untested technologies weaken carbon budgets that rely on such technologies.

As an example of carbon budgets, the Intergovernmental Panel on Climate Change (IPCC) chose three pristine schemes of distributive justice (responsibility, equality, and capability) and combined them in three different ways (Clarke et al. 2014: 458). In a similar vein, Robiou du Pont et al. averaged the results of various carbon allocation schemes in a way that is not necessarily equitable but could contribute to a political compromise in line with the 1.5 °C and 2 °C objectives (Robiou du Pont et al. 2017: 41).

In a nutshell, when it comes to sharing the rest of the overall GHG budget, carbon budget implicitly refers to a question of distributive justice. The allocation of a budget implicitly refers to a sharing of socio-economic benefits and wealth. Regardless of the level of emissions of the Parties, the term "budget" associated with the terms "allocation" or "distribution" implicitly suggests that all Parties will receive emission rights, as if GHGs were a kind of wealth and as if the current atmospheric concentration of GHGs in the atmosphere was still safe. Moreover, the term "budget" implies the term "debt" in a narrative that spontaneously rejects the question of whether GHGs would constitute a "poison" for biosphere ecosystems and their inhabitants (*supra* I.A). These narrative elements refer to a social law regime, despite the balanced scientific reports of the authors of, and the commentators on, the carbon budgets. It then becomes essential to specify how the distributive dimension of carbon budgets contributes to minimising any climate objective and how carbon budgets are still tied to a social law regime.

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[15] Before the end of the century, net negative CO_2 emissions are in "the range of −350 to −125 $GtCO_2$ and −315 to −60 $GtCO_2$ for likely and medium 2°C scenarios, respectively" (Rogelj et al. 2015: 521).

[16] "If expressed in terms of CO_2 equivalent or total radiative forcing, a given stabilization level can be met through various combinations of reductions in the emissions of different gases and by enhancing sinks of greenhouse gases". (Intergovernmental Panel on Climate Change 1997: 6)

C. Distributive Justice in a Situation of Reflective Disequilibrium

When applying the methodology of moral philosophy to identify a possible reflective disequilibrium (Van Parijs 1991: 25; Canto-Sperber & Ogien 2006: 17), it can be hypothesized that a group of philosophers promotes a certain carbon budget and makes several proposals for different points in time, adapting its proposals to increases in emissions. Graphs 1, 2, 3 and 4 summarize the successive emission reduction proposals we have heard about since 1992 and they will serve as a basis for discussion of the possible shortcomings of climate justice over all these years.

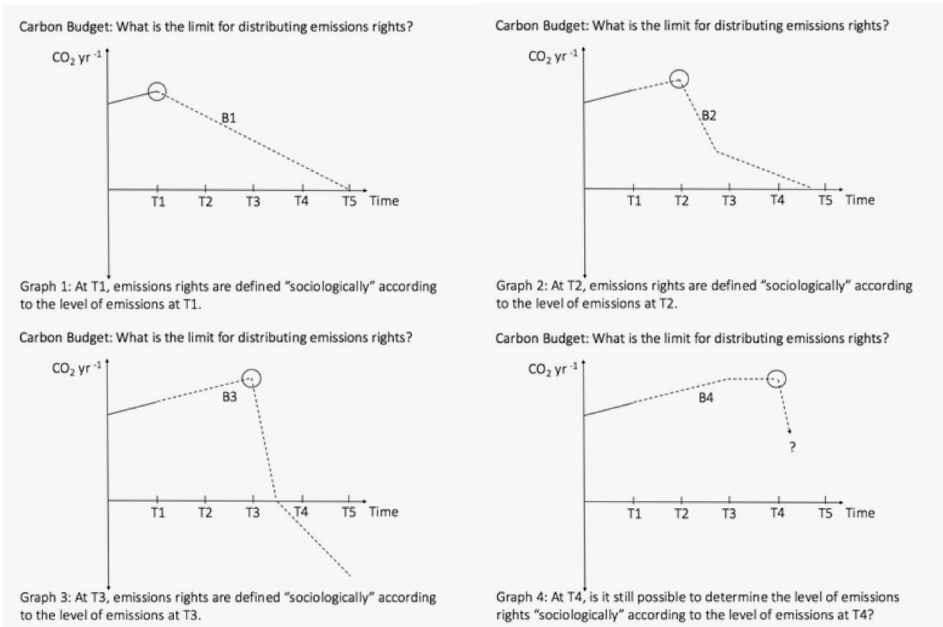
The vertical axes of graphs 1 to 4 depict annual CO_2 emissions, and the horizontal axes represent time. The proposed carbon budgets are represented by the dashed line. The carbon budgets B1, B2, and B3 in graphs 1, 2, and 3 are equivalent during the time period from T1 to T5. Graph 4 suggests that at T4, it is no longer possible to reduce emissions to maintain the same carbon budget.

With regard to graph 1, a group of moral philosophers recommends a global emissions reduction as indicated by the line B1 which represents the global carbon budget from T1 to T5. At T1, the level of emissions rights distributed by the group corresponds to the effective level of CO_2 emissions as observed "sociologically" (*supra* I.C). The group then proposes scenario B1 to keep the carbon budget compatible with a certain level of temperature increase.

The second graph shows that emissions are continuing to rise as of T2. Imagine that the same group recommends a new global emissions reduction. At T2 the group distributes emissions rights equal to the effective level of CO_2 emissions, and it allocates emissions rights along the decreasing line B2 to keep the same carbon budget as B1 from T1 to T5.

Now look at the third graph. At T3 the group allocates emissions rights for higher emissions levels and higher greenhouse gas concentrations, and the level of emissions rights that is distributed equals the effective level of CO_2 emissions. The philosophers hope to respect the same carbon budget as in graph 1, since the reduction of emissions is steeper, even negative in graph 3, thereby implying a fragile hypothesis about the availability of future technologies (*supra* III.B).

The first three carbon budgets stay the same. As Shue wrote with regard to a budget of one trillion tons, "The point is not to delay the day on which the trillionth tonne of carbon is emitted, but to keep that day from coming – ever" (Shue 2014: 67). Nonetheless, theoretical compliance with the budget is not enough. B3 is based on negative



emissions from untested technologies (*supra* III.B), thus B3 is less probable than B2 was at its time, and their equivalence is debatable.[17] In this distributive justice regime, the norm for each carbon budget at the beginning of each emissions reduction remains *social* since the amount of emissions rights equals the level of CO_2 emissions by human societies. In this regime, human societies continue to be the source of the norm for emissions levels to the extent that the norm is learned by observing societies' emissions levels (their empirical behavior—*supra* I.C). The carbon budgets B1, B2, and B3 attempt to escape the epistemology of social law, but it is repeated each time the carbon budget profile is modified. Distributive justice is still influenced by an epistemological configuration that does not fully meet the

[17] At T5 the levels of cumulative emissions among the three carbon budgets look identical: B1=B2=B3. Nevertheless, between T1 and T4, scenario B2 accounts for cumulative emissions greater than that of B1. The same is true for B3 compared to B2. Given the inertia of the climate, at T5, B3 theoretically leads to temperatures above B2. The same is true for B2 compared to B1. Moreover, maintaining B3 seems more difficult and improbable than B2 and B1. The probabilities of maintaining the carbon budget and the temperature target are eroding: B1>B2>B3. In addition, the philosophers, in each scenario, take the current level of emissions as the starting norm and everyone can understand that the carbon budget will be adapted to the current level of emissions. Finally, philosophers contradict the first distribution with the second distribution and the second distribution with the third.

climate change challenge and it sends a weak and ambiguous signal to emitters.

With regards to graph 4, if one assumes that global emissions continue to grow after T3, the scenario starting at T4 will not keep the same carbon budget. In addition, distributing emissions rights at T4 based on the amount of emissions sociologically observed at T4 would be highly contestable. While the carbon budget is not criticized as a practical tool, it states implicitly: "Everything is subjected to distribution and appropriation. Additional GHG emissions do not breach the no-harm principle". Allocating emissions rights at T4 will cause philosophers to contradict themselves at the expense of the victims of climate change and at the expense of future generations.

The logic inherited from the epistemological configuration of social law according to which the norm must be fluid – to accompany the economic development of societies – obviously continued to play an important role in climate justice. As long as a regime of social law "haunts" climate mitigation justice when it comes to the naming of anthropogenic GHG in appropriate words, political communities can neither fully grasp that the laws of nature are core elements of the narrative of climate justice nor correctly define what an emission limit is (in its different dimensions). As the research question on the epistemology of climate justice has not been tackled in an interdisciplinary way, some remaining elements of the epistemological configuration of social law have compromised the objective of the Convention since its inception (*supra* II.B, II.E). Hence the impossibility of fully comprehending, meditating and sharing publicly – with other people – that human destiny and the body of humanity are deeply connected to the biosphere and are altogether threatened by high GHG levels. In summary, some features of social law have continued to stick to key elements of climate mitigation justice and have contributed to preventing a full epistemological shift in ethics, law and policy.

That being said, it is now a question of distinguishing between emissions that deserve rights from emissions that do not. The objective is to integrate the epistemological shift of Article 2 of the Convention into the concepts and principles of climate change mitigation justice and to help them permeate other areas of knowledge.

D. Discussion from the perspective of the epistemology of Article 2

The above analysis suggests that the importation of several elements of the epistemology of social law denatures the climate justice

question. Pursuing the allocation of rights to excessive amounts of GHG does not profile justice from the perspective of its principal objective, the stabilization of the GHG atmospheric concentration at a non-dangerous level. The distributive schemes do not reproduce enough elements of the epistemology of Article 2 UNFCCC, climatology[18] and more broadly scientific ecology.

As a matter of consequence, the seriousness of climate change is enervated by the allocations of rights at excessive levels of emissions. It is neither possible to believe in the commonly agreed norm of "well below 2°C", nor to assert coherently the unacceptable damage that will ensue from excessive emissions levels. Additionally, the narrative formulated by distributive justice does not tell the truth about the normative aspects of climate change as determined by Article 2 UNFCCC and Article 2a of the Paris Agreement. The judgements of distributive justice are inaccurate since they do not fully comprehend the epistemological shift inaugurated by the objectives of climate law (*supra* II.B), the legal concept of harmony with nature (*supra* II.C), and the requirement for a balanced biosphere (*supra* II.E). Although these elements recur and are somehow known by a majority of researchers, a coherent narrative of climate justice is still pending.

The following section addresses the issue of limiting emissions rights using the no-harm principle, the temperature objective and the level of GHG concentration in the atmosphere. It is to help the reader imagine a world that has really developed a way to respect climate thresholds.

IV. The No-Harm Principle and Climate Change Mitigation Justice

A. The First Intuition About a Breach of the Preventive Dimension of the No-Harm Principle

This section is structured around figures that show the level of dangerous concentration of GHG and the levels of anthropogenic emissions that contribute to raising the atmospheric concentration of GHG. These two sets of data will enlighten this discussion by providing more accuracy about the pertinence of the no-harm principle and its ability

[18] Climatologists were handed the task of making these determinations since they had set a temperature target that was commonly agreed upon in 2009 by the Copenhagen Conference and again in 2015 by the Paris Agreement, which has been ratified.

to heed the epistemological configuration of Article 2 UNFCCC and the temperature target. They will specifically suggest that a dangerous and unacceptable level of atmospheric GHG has already been exceeded. To begin, what does the no-harm principle entail?

The no-harm principle can be described as a preventive principle: "Do not harm!". Accordingly, to put at risk too many people and entire communities leads to a breach of the no-harm principle. For instance, Knox proposes the following reasoning about a breach of human rights obligations:

"[A]lmost every State in the world has presented an intended nationally determined contribution [to climate change mitigation], but even if fully implemented, they will not put the world on a path that avoids disastrous consequences for human rights. UNEP has determined that full implementation of the intended contributions would lead to emission levels in 2030 that will likely cause a global average temperature increase of well over 2°C, and quite possibly over 3°C.[19] Therefore, even if they meet their current commitments, States will not satisfy their human rights obligations." (Knox 2016: 18).

These human rights obligations encompass the right to life and the right to food, among others (Ibidem: §7, 9§, §23, §24). By analogy, a breach of the no-harm principle can be inferred from this observation.

In contrast with research on distributive justice (*supra* III.C), it is worth noting that Knox's approach does not consider the current level of emissions as a point of departure for determining the norm of emissions. His approach seems to be in opposition to the epistemology of social law.

The Alliance of Small Island States has proposed another criterion for determining whether a level of dangerous interference with the climate system has been reached (AOSIS 2007: 2). In line with Art. 2 UNFCCC, it is based on the level of "greenhouse gas concentrations in the atmosphere". The Alliance has to determine if the current concentration of atmospheric GHG is already pushing the Earth's average surface temperature to an unacceptable threshold (infra IV.B).

B. The Concentration of GHG in the Atmosphere and the Related Increase of Earth's Surface Temperature

In 2017 the GHG concentration already amounted to 493 ppm CO_2eq (NOAA 2018a). The following review of the literature confirms this amount is already too high with regard to temperature targets.

[19] United Nations Environment Programme 2015, quoted by Knox 2016.

According to Rogelj et al., limiting the temperature increase to 1.5 °C would imply limiting the GHG concentration to a range of 420 ppm–440 ppm CO_2eq in 2100 (Rogelj et al. 2015: 521). Thus, the 2017 level was already 53 ppm to 73 ppm above the GHG concentration compatible with the 1.5 °C target. Additionally, limiting the temperature increase to 2 °C by 2100 would imply not exceeding a concentration level of 480 ppm–515 ppm CO_2eq (Ibidem: 521). Inasmuch as the current level of GHG is already in that range, it is no longer possible to state that it is likely to keep the increase in the Earth's surface temperature well below 2 °C.

According to Meinshausen, if GHG concentrations were to be stabilized at 475 ppm CO_2eq, the likelihood of exceeding 2 °C would range from 38% to 90% (mean = 64%) (Meinshausen 2006: 270). It seems "unlikely" to stay below 2 °C, and there is a "medium likelihood" of staying above that level. Furthermore, with regard to the current GHG concentration, the probability of aligning with the 1.5 °C increase would be more unlikely, if not very unlikely.

The annual CO_2 concentration level amounted to 409 ppm in October 2018 (NOAA 2018b). However, an atmospheric concentration of 400 ppm CO_2 corresponds to a "likely" long-term warming range from 0.8 °C to 2.3 °C after 2100 as compared to preindustrial levels (Rummukainen 2015: 10, 12). Additionally, a warming of 3.1 °C would be very unlikely – but not impossible – with such a concentration level (Ibidem: 12).

The above research is generally based on the concept of *Earth system sensitivity*, which is estimated with regard to a doubling of the concentration of CO_2 in the atmosphere (since the pre-industrial period) and examines possible evolutions of the Earth's temperature. Based on a doubling of the concentration, Earth system sensitivity is likely in the range of 1.5 °C to 4.5 °C with high confidence (Stocker et al. 2013: 67–68). Snyder's more recent research, which is based on a proxy reconstruction of climate temperature over 2 million years – with many more data points than previous studies – found that the Earth system sensitivity exceeds 6 °C with 99% probability (Snyder 2016: 227). Thereby, the hypothetical stabilization of GHG concentrations around today's levels (493 ppm CO_2eq) could lead to an eventual warming of 5 °C over the next few millennia, with a 95% credible interval between 3 °C and 7 °C (Ibidem: 226).

As a matter of consequence, according to the four references cited above, the current level of GHG atmospheric concentration could already be unacceptably interfering with the climate system.

C. The Second Intuition About the Breach of the Preventive Dimension of the No-Harm Principle

As stated above, the forthcoming emissions from pledges from country Parties to the Convention will push the GHG concentration to a level that will raise the Earth's surface temperature more than 1 °C above the 2 °C target of Article 2a of the Paris Agreement.[20] Additionally, it is likely that the current level of GHG concentration in the atmosphere – given the hypothesis that the GHG concentration will remain constant from today onward – will exceed the target (*supra* IV.B). These two results lead to a global breach of the no-harm principle.

This claim could be contested by proposing negative net emissions via semi-artificial and artificial sinks (*supra* III.B). Nonetheless, there is virtually nothing of the kind outside of engineering plans and projects and obtaining negative net emissions requires further research (Fuss et al. 2014: 852). Moreover, the pledges from country Parties are insufficient. As a result, it is very likely that Article 2 of the UNFCCC and Article 2a of the Paris Agreement have not been respected due to excessive global emission levels and it becomes difficult to deny a violation of the no-harm principle. Indeed, the above reasoning suggests that numerous country Parties to the Convention are breaching the no-harm principle – as well as basic human rights (*supra* IV.A).

These conclusions are in line with the epistemology of judgement of Article 2 UNFCCC (*supra* II) and imply a clear shift from the epistemological configuration of social law as defined in subsections I.C and exemplified in section III. Additionally, it becomes clear that this epistemological shift is implicitly taken on by Knox insofar as the current emissions levels of country Parties to the Convention are by no means the source of a norm for emissions. Human rights, which historically stem from the tradition of modern natural law, are characterized by a quest for intangible norms (France's National Constituent Assembly 1789: Art. 2; United Nations General Assembly 1948: Recital 1; Ewald 1994: 480), which explains why Knox's declaration is outside the epistemological configuration of social law.

The next question is whether the no-harm principle can shape a limitation of emissions rights in a way that is consistent with Art. 2 of the Convention and its underlying epistemology.

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[20] *Supra* note 19.

D. The Global Amount of Emissions That Can Be Legitimized by "Rights"

As stated above (*supra* III.C), as long as there was a carbon budget showing the temperature target could be still respected, country Parties to the Convention would implicitly receive emissions rights based on their current level of emissions. By contrast, the new line of argument starts from the principle of stabilizing GHG concentrations in the atmosphere, in line with the concept of harmony. The current level of GHG removal by sinks therefore determines the maximum level of emissions.

Concerning carbon dioxide, the 2016 level of emissions was roughly 41 $GtCO_2$, the sequestration level by land and ocean amounted to roughly 19 $GtCO_2$, and carbon dioxide climbed by 22 $GtCO_2$ (Le Quéré et al. 2017; Dlugokencky et al. 2017). In other words, 22 $GtCO_2$ were added to the atmosphere in 2016, worsening the issue of climate change by raising the probability of exceeding a temperature increase of more than 2 °C. By contrast, emissions not exceeding 19 $GtCO_2$ $year^{-1}$ would not worsen the CO_2 atmospheric concentration.

As a second step in the reasoning, the latter emissions level would be compatible with the right and duty to live in harmony with nature and with the principle of stabilizing the GHG concentration in the atmosphere. From this perspective, emissions above that level breach the no-harm principle. However, it is not suggested here that the norm for emissions is necessarily based on the sequestration level. The norm can be lower than the sequestration level when considering, for instance, that the concentration of atmospheric GHG would be dangerous at 350 ppm CO_2 (instead of 400 ppm CO_2) inasmuch as the CO_2 sink capacity also depends on the concentration of atmospheric CO_2.[21] At this stage of reflection, the current sequestration level is, nonetheless, a practical way to exemplify a new approach to thinking about the emissions norm, and it is retained as a plausible and potentially fruitful hypothesis. In this regard, the norm of emissions is given by the level of sequestration of emissions in a way that is directly inspired by Article 2 UNFCCC (*supra* II.B). Additional work is needed to give more subtlety to the calculation drafted above,[22] but the principle limiting the overall amount of emission rights is clear and corresponds to the epistemology of the climate issue.

[21] Rising concentrations of CO_2 in the atmosphere have, notably, a fertilizing effect on plant growth (Le Quéré et al. 2016: 623).

[22] The level of sequestration changes considerably from one year to the next, which implies smoothing the original data to get a kind of moving average. In addition, the calculation should put into perspective all GHG (not only CO_2).

The next question is whether a breach of the no-harm principle can be attributed to country Parties.

E. Restricting Emissions Rights at the Scale of Country Parties to the Convention

Does Article 2 of the Convention have a specific implication for each country Party? The usual answer is that Article 2 does not define any commitment on the country Parties scale. According to Christiansen, Article 2 does not compel country Parties to any obligation (Christiansen 2016: 62), while Ott et al. states that "concrete obligations of the states arose only from the principles of Art. 3 and specific obligations" (Ott et al. 2004: 38). Country Parties have to respect the principle of common but differentiated responsibilities presented in Articles 3.1 and 4.1. This principle obliges developed countries to take the lead in reducing their emissions from the perspective of the Convention's objective (United Nations 1992: Art. 4.2a). Consequently, it does not seem possible to infer any obligations of country Parties directly from the Convention's objective, at least from a strict juridical viewpoint.

It seems that a search for coherence between the principles naturally leads to the following reasoning: 1° The principle of stabilization of GHG concentration prevails over the principle of common but differencited responsibilities when the emissions level is unacceptable; 2° The principle of differentiated responsibilities prevails over the principle of stabilization only if implemented through economic compensations without additional emissions rights (*infra* IV.F); 3° Each regime aims to limit the abuses that could flourish if the other regime were independent. Nevertheless, since a violation of the no-harm principle is more serious than a disagreement on a distribution of wealth,[23] the first regime takes precedence over the second one as far this precedence serves a true and share understanding of the human condition (human beings are established in the biosphere as natural, cultural and spiritual beings realizing themselves through the exercise of positive freedoms and their ability to form communities).

Indeed, the principle of stabilization has a specific epistemology which implies that the norm of emissions is mainly given by nature (*supra* III) and the specific way to interpret the norms of climate

[23] Without this construction, the interpretation of the principle of common but differentiated responsibilities remains in the epistemological configuration of social law insofar as GHG emissions are necessarily considered as goods, like any other goods (*supra* note 2).

change justice can be partially deduced from Article 2 UNFCCC. The principle of stabilization of the atmospheric concentration of GHG implies – besides reducing emissions to a non-dangerous level – that a balance between emissions and removals needs to be found. To live in harmony with nature over the long term is a general right as well a duty of each country Party to the Convention.

As the current concentration of GHG in the atmosphere is henceforth dangerous and the pledges of country Parties are globally insufficient, the situation denotes a global breach of the no-harm principle, as well as a breach of basic human rights. If one agrees on the civil equality of human beings before the law (Civil Code), or that no one – rich or poor – can wrongfully harm others (Weisbach 2011: 559), or "that all men are created equal" as stated in the Declaration of Independence (US Congress 1776), or that the Rawlsian principle of equal liberty for all protects everyone against physical assault (Integrity of the person),[24] in a situation of a collective breach of the laws of nature at the expense of many people and peoples, each country Party shall respect, on a per capita basis, the same restriction on emissions rights with regard to the capacity of natural sinks. These rights cannot exceed the sequestration level determined by the no-harm principle. They are limited on the same equal basis at the level of production (territorial emissions) and at the level of final consumption (final consumption includes emissions from consumption and "grey" emissions from the production process related to consumption).

The no-harm principle approach is justified on different grounds than the per capita approach of distributive justice. The no-harm principle is less about allocating equal rights to the enjoyment of carbon emissions than to banning everyone from wronging other people on an equal basis. It makes clear that a certain level of emissions can wrong others. The principle certainly has a distributive dimension without having the meaning and justification of distributive justice. The needs, capabilities and circumstances of emitters no longer matter when emissions are thretening the climate balance.

In other words, society's current emission levels are no longer the source of an emission norm under the pretext that a hypothetical carbon budget would be compatible with the objective of "well below 2 °C". The new epistemological configuration of climate change mitigation justice is based on climate science, more broadly scientific ecology, and it takes its

[24] For instance, the Rawlsian principle of equal liberty for all protects everyone against physical aggression, focusing on the integrity of each person (Rawls 1999: 53).

positivity in a regime of ecological natural law to be implemented. The intervention of the no-harm principle in the narrative of climate justice confirms that anthropogenic GHG emissions poison the ecosystems of the biosphere. As a result, the new narrative of climate justice ceases to repeat a story in which social law and its relativism play the primary role.

F. Discussion

The arithmetic equality of the no-harm principle give rise to significant oppositions. 1) Equality of emissions rights on a per capita basis means populous countries with a growing demography would have an interest in expanding their population and their related emissions rights. 2) The no-harm principle does not serve as a guideline for reducing emissions; it merely points out that the maximum level of available emission rights is exceeded, which is insufficient to support sound climate policies. 3) Strict equality does not account for the different circumstances of emitters, which leads to an idealistic stance. 4) The no-harm principle will deny emissions rights to country Parties that are following a carbon budget that may meet the temperature target according to distributive schemes. 5) The no-harm principle does not integrate the question of responsibility for past emissions when deciding to limit emissions rights and, more generally, it ignores the distributive justice question that is so important for developing countries. These five points are addressed in the following paragraphs.

1. The issue of a demographic increase is a real problem when looking at a per capita approach to emissions rights. However, the development of anthropogenic sinks is on the agenda defined by Art. 5.1 of the Paris Agreement and the bookkeeping logic of anthropogenic sinks logically implies they will be owned by those who will develop them (IPCC 2006: 4). As a result, populous States aiming to comply with the no-harm principle would probably do better to rely on the development of anthropogenic sinks rather than on soaring demography.

2. The no-harm principle does not seem to serve as a guideline for reducing emissions. However, it serves to position a new regime that governs humanity's relationship with nature and the biosphere. Since the dangerous level of GHG concentration has been exceeded, it is misleading to allocate rights for emissions above the sequestration level. Parties receiving emissions rights for excessive levels of emissions would believe the dangerous threshold does not exist. The no-harm principle helps connect the definition of the emissions norm to the epistemological configuration of the Convention (*supra* III.C, III.D). Moreover, when mil-

lions of people suffer a violation of the principle of not harming others, one can deduce that a crime against humanity is ongoing.

This analysis gives rise to a new term to describe the levels of excessive emissions that many States will not be able to immediately reduce: "provisional emissions tolerance". The term highlights emissions amounts that are not legitimate and should be reduced as soon as possible, while warning that some reduction targets cannot be achieved within a few years.

Provisional emissions tolerance responds to the need for an intermediate status between "having rights" and breaching the no-harm principle. On the one hand, the new category distinguishes between countries that deserve provisional emission tolerances in order to quickly curb their emissions while being above the limit, and countries that blatantly breach the no-harm principle and consequently do not deserve any provisional emissions tolerance. On the other hand, it indicates that a serious wrong is ongoing because the majority of emitters have been negligent since the Convention came into force.

As it is often difficult to "leave the herd", no one can say that all emitters above the sequestration threshold are 100% guilty. This brings in an intermediate category between good and evil. On the one hand, provisional emission tolerances help the new narrative reflect the complexity of a political situation that a majority of people would otherwise reject. On the other hand, they avoid the misrepresentations of an allocation of emission rights to large emitters by a regime of social law unable to limit State sovereingnty by a law of nature.

3. It is true that arithmetical equality does not account for the emitters' different circumstances. Three reasons justify this position. First, the no-harm principle is sensitive to the views of victims of climate change and does not focus on the rights of emitters, unlike the distributive approach. Second, the no-harm principle intervenes when numerous emitters are creating a wrong and the distributive approach has failed. Third, the principle does not pretend to serve as a specific guideline to build a scenario for emissions reductions. It establishes a true account of the situation and supports the assertion that climate damage constitutes a crime against humanity.

The no-harm principle ensures that the emissions norm falls under the concept of harmony with nature and the principle of stabilizing GHG concentrations in the atmosphere. The principle and the concept should apply equally. Escaping poverty does not exempt anyone from the duty to live in harmony with nature, since distributive justice can allocate financial and technological resources to maintain environmen-

tal balance while fostering the conditions for a happy life for all. The principle of common but differentiated responsibilities is therefore important and even crucial in determining who should pay for mitigation policies. Money, technical support and technological transfers, as well as food and medical supplies mainly constitute productive tools and wealth flows. The latter are not linked to GHG emissions in a predetermined way to the extent that many societies are striving to disconnect wealth production and consumption from GHG emissions. As such, flows of services and resources can continue to be allocated within the epistemological configuration of social law through schemes of distributive justice. Yet climate change mitigation justice relates to the issue of distributive justice when, and only when, wealth flows are considered as such. In this respect, the principle of common but differentiated responsibilities takes precedence over the UNFCCC's objective.

Nevertheless, when it comes to evaluating and judging the flows of anthropogenic GHGs related to a certain level of wealth, the scheme is different. Excessive GHG levels poison the biosphere's ecosystems, constitute a crime against humanity and cannot be directly incorporated into the category of wealth. As stated earlier, anthropogenic GHGs pertain to another epistemological configuration than wealth, which implies that they should be ruled and judged according to another way of thinking. Consequently, the UNFCCC's objective and the legal concept of harmony with nature take precedence over the principle of common but differentiated responsibilities when it comes to GHG as such.

While these two regimes need to be differentiated, they also need to be articulated together. Broadly speaking, if a GHG scheme has a universalist dimension and is blind to social circumstances, the objective of allocating wealth through distributive justice is to support people and the social conditions of mitigation policies. On the one hand, distributive justice is a precondition of mitigation policies; on the other hand, mankind's obligation to live in harmony with nature requires it to reinvent the way it produces wealth, which constitutes a functional precondition of distributive justice.[25] In this context, it does not make sense for developing countries to bet on the development of coal energy with the purpose of shifting to clean energy in the future.

[25] I do not envision these two regimes as an ideal of perfect union among peoples, but as a way to save humanity from a global catastrophe. Despite the strong interdependence between these two regimes, country Parties will be able to use different strategies and oppose each other using different claims from the field of distributive justice, whereas they would be "forced" by nature and by the name and shame strategy – a climate negotiation tactic – to respect the universal norm of emissions and the

4. It may be counterproductive to deny emissions rights to country Parties that are following a carbon budget that potentially meets the temperature target and integrates the various criteria of distributive justice. However, if a country Party to the Convention was able to demonstrate that it has started to follow a carbon budget that is compatible with the "well below 2 °C" target – according to at least a certain number of distributive schemes – it would deserve provisional emissions tolerances without being considered as violating the no-harm principle. The burden of proof (for deserving such provisional emissions tolerances) would be on the country's shoulders as long its emissions remained above the sequestration threshold.

5. One could object that the no-harm principle does not integrate the question of low past emissions as a criterion for granting greater emission rights to the least developed countries, which means an important aspect of distributive justice is lost. However, developing countries can ask major emitters to compensate economically for low past emissions, thereby motivating the allocation of economic and technical support in the field of mitigation and adaptation. As high emitters breach the no-harm principle more obviously than other emitters, they probably owe more socioeconomical compensation to low emitters, even those that are above the sequestration level. While negotiating additional emissions rights is excluded, developing countries are still able to make a strong claim about the excessive emissions levels of developed countries. The no-harm principle gives developed countries more interest in allocating mitigation and adaptation means to developing countries.

In this scheme of justice, all countries can share the same objective: to live in harmony with the biosphere as proposed by the principle of stabilizing GHG concentrations in the atmosphere. This objective is probably contested in the real world, but moral philosophy and legal philosophy should maintain it as a crucial normative stance capable of preventing a crime against humanity. Finally, the no-harm principle and the concept of harmony with nature share the normative objective to transcend conflicts about claims related to emissions rights. Thanks to the no-harm principle, the concept of harmony with nature and its

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Earth's climate from the perspective of the concept of harmony. This approach is realistic to the extent that the no-harm principle does not boil down to a kind of world distributive justice and is not dependent on the success of progressive parties. Indeed, there is still room for conservative parties prone to defend the primacy of the no-harm principle over distributive justice, and to *conserve* the qualities of the life-support system (which would be a return to normalcy or to the rationale, „la raison").

related obligation make distributive justice more relevant with regard to its specific field of intervention.

V. Conclusion

The discussion on the relevance of allocating rights to high levels of emissions is structured according to Foucault's archaeology of knowledge and Ewald's subsequent theoretical developments. It shows that carbon budgets implicitly allocate emissions rights by starting from the current level of emissions with the hope of finally curbing them. The application of this approach to the field of climate justice leads to the bestowal of emissions rights on larger carbon budgets and the permitting of higher levels of emissions under the pretext of a kind of sociological realism. In other terms, the distribution is partly based on the epistemology of social law which considers that social norms are based on the observation of the empirical behavior of societies.

This article strives to explain why the allocation of emissions rights no longer matches the specific epistemology of the UNFCCC's Article 2 and the laws of nature. Accordingly, distributive justice is no longer competent to allocate rights to emissions above the sequestration levels, but it is still relevant and crucial for allocating wealth flows. The article shows that as long as some key elements of climate justice come from social law, they contribute to preventing a full epistemological shift towards true ecological justice.

In order to escape from this trap, it is argued that observation of the GHG sequestration level sets the norm for the upper limit of emissions. In other words, the limit to emissions rights is determined by observation of nature and by a moral justification aware of the specific epistemology of the relevant judgement. As a result, Article 2 UNFCCC revives the tradition of natural law using a new epistemological base.

Understanding the scope of the no-harm principle and the principle of equality before the law matches the content of the UNFCCC's main objective. The new approach can be called ecological natural law. It can restrict the allocation of emissions rights to country Parties with the purpose of limiting – on an equal basis – their ability to harm. What better judge than nature to set limits for preserving humanity against itself?

References

Anderson K. (2015), *Duality in Climate Science*, "Nature Geoscience" 8: 898–900.

AOSIS Alliance of Small Island States (2007), *Male Declaration on the Human Dimension of Global Climate Change*, URL=http://www.ciel.org/Publications/Male_Declaration_Nov07.pdf [accessed 21.05.2018].

Aristotle (2006), *Nichomachean Ethics*, Cambridge University Press, New York.

Baer P. (2013), *The Greenhouse Development Rights Framework for Global Burden Sharing: Reflection on Principles and Prospects*, "Wiley Interdisciplinary Reviews: Climate Change" 4: 61–71.

Bodansky D. (1993), *United Nations Framework Convention on Climate Change: A Commentary*, "Yale Journal of International Law" 18: 451–558.

Bosselmann K. (2013), *Grounding the Rule of Law*, [in:] *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Ch. Voigt (ed.), Cambridge University Press, New York, doi.org/10.1017/CBO9781107337961.007.

Bratspies R.M. (2013), *The Green Economy Will Not Build the Rule of Law for Nature*, [in:] *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Ch. Voigt (ed.), Cambridge University Press, New York, doi.org/10.1017/CBO9781107337961.024.

Caldecott B. et al. (2015), *Stranded Carbon Assets and Negative Emissions Technologies*, "Stranded Assets Programme", Smith School of Enterprise and the Environment, University of Oxford, Working paper:1–36.

Caney S. (2005), *Cosmopolitan Justice, Responsibility, and Global Climate Change*, "Leiden Journal of International Law" 18: 747–775.

Caney S. (2012), *Just Emissions*, "Philosophy & Public Affairs" 40: 255–300.

Caney S. (2014), *Two Kinds of Climate Justice: Avoiding Harm and Sharing Burdens*, "Journal of Political Philosophy" 22: 125–149.

Canto-Sperber M., Ogien R. (2006), *La Philosophie Morale*, Presses Universitaires de France, Paris.

Christiansen S.M. (2016), *Climate Conflicts-A Case of International Environmental and Humanitarian Law*, Springer, eBook.

Ciais, P. et al. (2013), *Carbon and Other Biogeochemical Cycles*, [in:] *Climate Change 2013: The Physical Science Basis*, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, T.F. Stocker et al. (eds.), Cambridge University Press, Cambridge (UK), New York (USA).

Clarke L. et al. (2014), *Assessing Transformation Pathways*. [in:] *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, O. Edenhofer et al. (eds.), Cambridge University Press, Cambridge, New York.

Conference of the Parties to the UNFCCC (2013), *Guidelines for the Preparation of National Communications by Parties Included in Annex I to the Convention, Part I: UNFCCC Reporting Guidelines on Annual Greenhouse Gas Inventories*, FCCC/CP/2013/10/Add.3.

Crutzen P.J. (2006), *The Anthropocene*, [in:] *Earth System Science in the Anthropocene*, E. Ehlers, T. Krafft (eds.), Springer, Berlin, Heidelberg, doi.org/10.1007/3-540-26590-2_3

Cullinan C. (2013), *The Rule of Nature's Law*, [in:] *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Ch. Voigt (ed.), Cambridge University Press, New York, doi.org/10.1017/CBO9781107337961.008.

Ewald F. (1985), *Justice, Egalité, Jugement*, [in:] *L'Egalité*, "Cahiers de philosophie politique et juridique de l'Université de Caen" 8: 219–244.

Ewald F. (1994), *L'État Providence*, Grasset, Paris.

Fisher P.B. (2011), *Shifting Global Climate Governance: Creating Long-Term Goals through UNFCCC Article 2*, "Portal Journal of Multidisciplinary International Studies" 8: 2–30.

Foucault M. (1994), *The Order of Things: An Archaeology of the Human Sciences*, Vintage Books, New York.

France's National Constituent Assembly (1789), *Declaration Human and of Civic Rights*, Conseil Constitutionnel, Paris. URL=https://www.conseil-constitutionnel.fr/sites/default/files/as/root/bank_mm/anglais/cst2.pdf [accessed 10.03.2017].

Fuss S. et al. (2014), *Betting on Negative Emissions*, "Nature Climate Change" 4: 850–853.

Gupta J. (2006), *International Law and Climate Change: The Challenges Facing Developing Countries*, "Yearbook of International Environmental Law" 16: 119–153.

IPCC Intergovernmental Panel on Climate Change (1997), *Stabilization of Atmospheric Greenhouse Gases: Physical, Biological and Socio-Economic Implications*, D. Schimel et al. (authors), J.T. Houghton et al. (eds.), WMO & UNEP, URL=https://www.ipcc.ch/pdf/technical-papers/paper-III-en.pdf [accessed 11.03.2017]

IPCC Intergovernmental Panel on Climate Change (2006), *IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1: General Guidance and Reporting, Introduction to the 2006 Guidelines,* Prepared by the National Greenhouse Gas Inventories Programme, H.S. Eggleston et al. (eds.), Institute for Global Environmental Strategies (IGES), Japan.

Knox J.H. (2016), *Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, Human Rights Council Thirty-First Session, A/HRC/31/52: 1–21.

Le Quéré C. et al. (2016), *Global Carbon Budget 2016*, "Earth Syst. Sci. Data" 8: 605–649. doi.org/10.5194/essd-8-605-2016.

Le Quéré C., Dlugokencky E. et al., (2017) *Global Carbon Budget 2017*, URL=http://www.globalcarbonproject.org/carbonbudget/17/data.htm [accessed 27.10.2018].

Meinshausen M. (2006), *What Does a 2 C Target Mean for Greenhouse Gas Concentrations? A Brief Analysis Based on Multi-Gas Emission Pathways and Several Climate Sensitivity Uncertainty Estimates*, [in:] *Avoiding Dangerous Climate Change*, J.S. Schellnhuber et al. (eds.), Cambridge University Press, New York.

Meinshausen M. et al. (2009), *Greenhouse-Gas Emission Targets for Limiting Global Warming to 2° C*, "Nature" 458: 1158–1162.

NOAA National Oceanic & Atmospheric Administration (2018a), *The NOAA Annual Greenhouse Gas Index*, URL=http://esrl.noaa.gov/gmd/aggi/aggi.html [accessed 27.10.2018].

NOAA National Oceanic & Atmospheric Administration (2018b), *Trends in Atmospheric Carbon Dioxide*, Earth System Research Laboratory, URL=https://www.esrl.noaa.gov/gmd/ccgg/trends/index.html [accessed 27.10.2018].

Nilsson A.K. (2013), *Enforcing Environmental Responsibilities: An Environmental Perspective on the Rule of Law and Administrative Enforcement*, [in:] *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Ch. Voigt (ed.), Cambridge University Press, New York.

Oppenheimer M., Petsonk A. (2005), *Article 2 of the UNFCCC: Historical Origins, Recent Interpretations*, "Climatic Change" 73(3): 195–226.

Ott, K. et al. (2004), *Reasoning Goals of Climate Protection. Specification of Art. 2 UNFCCC*, Federal Environmental Agency (Umweltbundesamt), Berlin.
Pacala S.W. (2010), *Verifying Greenhouse Gas Emissions: Methods to Support International Climate Agreements*, Committee on Methods for Estimating Greenhouse Gas Emissions Board on Atmospheric Sciences and Climate Division on Earth and Life Studies, National Academies of Sciences, Washington D.C.: 1–110.
Piguet F.-P. (2014), *Justice Climatique et Interdiction de Nuire*, Globethics, Geneva, URL=https://www.globethics.net/documents/4289936/13403260/GE_Theses_11_online.pdf [accessed 21.02.2017].
Piguet F.-P. (2016), *Justice Climatique et Principe d'Interdiction de Nuire : L'Apport Décisif de l'Interactionnisme Épistémologique*, [in:] *Interactionnisme et Normes: Approche Transdisciplinaire*, E. Picavet & E. Jeuland (eds.), Editions de l'Institut de Recherche Juridique de la Sorbonne (IRJS), Paris.
Rawls J. (1999), *Theory of Justice: Revised Edition*, The Belknap Press of Harvard University Press, Cambridge MA.
Rideout C. (2008), *Storytelling, Narrative Rationality, and Legal Persuasion*, "The Journal of the Legal Writing Institute" 14: 53–86, URL=http://digitalcommons.law.seattleu.edu/faculty/315 [accessed 23.01.2017].
Rideout C. (2013), *Twice-Told Tale: Plausibility and Narrative Coherence in Judicial Storytelling*, "Legal Communication & Rhetoric" 10: 67–88.
Robiou du Pont Y. et al. (2017), *Equitable Mitigation to Achieve the Paris Agreement Goals*, "Nature Climate Change" 7: 38–43.
Rogelj J. et al. (2015), *Energy System Transformations for Limiting End-of-Century Warming to below 1.5 [Deg] C*, "Nature Climate Change" 5: 519–27.
Rummukainen M. (2015), *Our Commitment to Climate Change Is Dependent on Past, Present and Future Emissions and Decisions*, "Climate Research" 64(1): 7–14.
Schellnhuber H. J. et al. (2016), *Why the Right Climate Target Was Agreed in Paris*, "Nature Climate Change" 6: 649–53.
Shue H. (2014), *Transboundary Damage in Climate Change: Criteria for Allocating Responsibility*, Amsterdam Center for International Law (ACIL) of the University of Amsterdam, "Shares Research Paper" 45: 1–20.
Smith P. et al. (2013), *How Much Land-based Greenhouse Gas Mitigation Can Be Achieved Without Compromising Food Security and Environmental Goals?* "Global Change Biology" 19, 2285–2302.
Snyder C.W. (2016), *Evolution of Global Temperature over the Past Two Million Years*, "Nature" 538: 226–228, doi:10.1038/nature19798.
Stocker, T.F. et al. (2013), *Technical Summary*, [in:] *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, T.F. Stocker et al. (eds.), Cambridge University Press, Cambridge, New York.
Thomas d'Aquin (2000), *Somme Théologique*, CERF, Paris, vol. I–IV.
United Nations (1948), *The Universal Declaration of Human Rights*, Resolution 217 A.
United Nations (1972), *Declaration of the United Nations Conference on the Human Environment*, A/CONF.48/14/Rev.1.
United Nations (1982), *World Charter for Nature*, A/RES/37/7.
United Nations (1992a), *Framework Convention on Climate Change*, GE.05-62220 (E) 200705.
United Nations (1992b), *Rio Declaration on Environment and Development*, A/CONF.151/26 (Vol. I).

United Nations (2012), *The Future We Want*, Resolution Adopted by the General Assembly on 27 July 2012: A/RES/66/288, 53.

United Nations (2015a), *Paris Agreement*, FCCC/CP/2015/L.9/Rev.1.

United Nations (2015b), *Transforming Our World: The 2030 Agenda For Sustainable Development*, Resolution Adopted by the General Assembly on 25 September 2015: A/RES/70/1,

United Nations Environment Programme (2015), *The Emissions Gap Report: A UNEP Synthesis Report*, URL=http://uneplive.unep.org/media/docs/theme/13/EGR_2015_301115_lores.pdf [accessed 21.02.2017].

US Congress (1776), *Declaration of Independence*, URL=https://www.archives.gov/founding-docs/declaration-transcript [accessed 21.02.2017].

Van Parijs P. (1991), *Qu'est-ce qu'une Société Juste ? Introduction à la Pratique de la Philosophie Politique*, Seuil, Paris.

Van Vuuren D.P. et al. (2013), *The Role of Negative CO_2 Emissions for Reaching 2° C–Insights from Integrated Assessment Modelling*, "Climatic Change" 118: 15–27, doi 10.1007/s10584-012-0680-5.

Voigt C. (2013), *The Principle of Sustainable Development: Integration and Ecological Integrity,* [in:] *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*, Voigt C. (ed.), Cambridge University Press, New York, doi.org/10.1017/CBO9781107337961.012.

Watson R.T. et al. (1992), *Greenhouse Gases: Sources and Sinks*, [in:] *Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment*, J.T. Houghton et al. (eds.), WMO, UNEP & IPCC, Cambridge, New York, and Victoria: 25–46.

Weisbach D. (2011), *Negligence, Strict Liability, and Responsibility for Climate Change*, "Iowa Law Rev." 97: 521–565.