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INTRODUCTION

The papers comprised in this volume have been presented at the international workshop “Philosophy, Law and Environmental Crisis – Philosophie, droit et crise environnementale”, organized by the Swiss Association for the Philosophy and Law and Social Philosophy in collaboration with the Swiss Institute for Comparative Law in September 2014 in Lausanne. At that time, the 2015 United Nations Climate Conference was still quite far ahead, and it was not clear whether the Parties would achieve an agreement. Despite the positive outcome of the Conference, there is no doubt that climate change will remain on top of the political agenda during many years to come. Climate change belongs to the most pressing environmental problems the present generation has to tackle. In light of the magnitude of the damages likely to be caused by anthropogenic greenhouse gas emissions on the one hand, and of the as yet intractable conflicts about the way in which responsibilities to take action have to be assigned within the global community of nations on the other, climate change is the most salient feature of what is perceived today as environmental crisis.

The main objective of the Lausanne workshop was to engage a dialogue between philosophers and lawyers on some of the intricate questions related to this crisis. If philosophers often tend to favor an idealist or top-down approach to environmental problems by developing theories of global and intergenerational justice,¹ lawyers rather adopt a realistic or bottom-up approach by referring to judicial practice with respect to national, EU or international law.² By putting these two disciplines in dialogue, the workshop attempted to bring out the respective strengths and weaknesses of their approaches and to promote innovative solutions to pressing ecological issues.

The present volume is devoted to three main issues. The first one deals with the *nature of the environmental crisis*, more precisely with the salient discrepancy between the pressing need for action on the one hand, and the inertia of political and economic leaders to take and implement appropriate decisions on the other.³ How do we explain, for instance, that the warnings of scientists about the devastating impacts of global warming went for a long time largely unheard? This can be clarified by briefly considering the principle of precaution and the meteoric rise it experienced since the early 1990s.⁴ Some twenty years ago, only a few specialists in environmental law were familiar with this principle. It has since then established itself as a general principle of international law, and it has also come to occupy an uncon-

1 For a comprehensive overview cf. Axel Gosseries / Lukas H. Meyer (eds.), *Intergenerational Justice*, Oxford, 2009; Stephen M. Gardiner *et al.* (eds.), *Climate Ethics: Essential Readings*, Oxford, 2010.

2 See Malgosia Fitzmaurice *et al.* (eds.), *Research Handbook on International Environmental Law*, Cheltenham/Northampton, MA, 2010.

3 One of the best analyses of the nature of this crisis has been provided by Stephen M. Gardiner, *A Perfect Moral Storm: the Ethical Tragedy of Climate Change*, Oxford, 2011.

4 Nicolas de Sadeleer, The principles of prevention and precaution in international law: two heads of the same coin? in Fitzmaurice *et al.* (footnote 2), 182–226.

tested position in EC law, as well as in the national legislation of several European countries. The areas of application of this principle are indeed impressive. They include marine pollution, fisheries, rivers, air pollution and climate change, nature and biodiversity, waste management, chemicals and nuclear energy. This is however not my concern here. I am rather interested in the way in which the precautionary principle is related to a philosophy of anticipated action. In this context, it seems useful to compare it with the principle of prevention. Unlike curative measures aiming to remediate environmental damage, preventive measures do not depend on the appearance of environmental problems; they rather “anticipate damage or, where it has already occurred, try to ensure it does not spread”.⁵ Although future oriented, prevention is not the same as precaution. As Nicolas de Sadeleer explains, precaution epitomizes a paradigmatic shift:

“Whereas, under a preventive approach, the decision-maker intervenes provided that the threats to the environment are tangible, pursuant to the precautionary principle authorities are prepared to tackle risks for which there is no definitive proof that there is a link auf causation between the suspected activity and the harm or whether the suspected damage will materialize. In other words, precaution means that the absence of scientific certainty – or conversely the scientific uncertainty – as to the existence of the extent of a risk should henceforward no longer delay the adoption of preventive measures to protect the environment.”⁶

De Sadeleer refers here to the fact that new technologies have caused a new generation of risks to emerge. Since these risks challenge the ability of science to anticipate and prevent harm, they are different from traditional industrial risks: their impacts are wider and diffuse, it is impossible to determine their probability, and it is difficult to determine the damages they may provoke. Given these uncertainties and the complex process of risk assessment the precautionary principle requires, it is not surprising that the responsible actors are at pains to take and implement appropriate decisions.

Some scholars even contend that the notion of risk is no longer appropriate for describing our current situation. In order to understand their skepticism, one needs to recall the theory of ‘risk society’ developed by sociologists such as Ulrich Beck and Anthony Giddens in order to account for the way in which modern society organizes itself with response to risk.⁷ When the notion ‘risk society’ was coined in the 1980s, it was not unilaterally linked with the new generation of risks I just mentioned. However, when the notion gained popularity in the 1990s, it got closely linked with the growing environmental concerns of the same period. In a collection of essays published in 2013 under the title *Du risque à la menace: penser la catastrophe (From risk to threat: conceiving the catastrophe)* Dominique Bourg, Alain Papaux and others re-examine the notion of ‘risk society’ and question the very ability of modern society to become reflexive, that is, to critically examine itself in the face of the risks produced by human activity, and to transform itself in the process.⁸ In their view, it is problematic to account for environmental damages that are likely to occur

5 De Sadeleer (footnote 3), 183.

6 De Sadeleer (footnote 3), 184.

7 Ulrich Beck, *Risk Society: Towards a New Modernity*, transl. Mark Ritter, London, 1992 (reprinted 2000); Anthony Giddens, *The Consequences of Modernity*, Stanford, 1990; *idem*, *The Politics of Climate Change*, second, fully revised ed., Cambridge, 2011.

8 Dominique Bourg *et al.* (eds.), *Du risque à la menace: penser la catastrophe*, Paris, 2013.

in the future in terms of risks, since this would suggest that we are able to handle these problems on the basis of risk assessment and with a view on traditional insurance models instead of confronting ourselves with the idea of arriving at a tipping point where the very survival of mankind is at stake.

In the present volume Alain Papaux proposes to interpret the environmental crisis as a crisis of modernity. In his view, the conception of the relationship between human beings and nature, which became prominent with the development of the natural sciences from the 16th century onwards and subsequently influenced the new theories of law and politics of the 17th and 18th centuries, are at the root of the problems mankind is facing today. Drawing on the opposition between *homo sapiens* and *homo faber*, Papaux sets out to show in his paper how in the early modern period man began to view himself as a ‘maker’, a being endowed with volition and the capacity to freely define and sculpt himself, without any limit or end being imposed on him by nature. By linking the image of the ‘maker’ with the mythical figure of Prometheus, the creator and greatest benefactor of mankind, he suggests that qualities such as *hybris* and ruse (*metis*) fused in the ‘modern Prometheus’: a craftsman able to work with zeal and perseverance, relying on the power of his will. Papaux relies on a wide range of sources in order to demonstrate how the Aristotelian doctrine of the four causes, which acknowledged the relevance of final causes in nature, was supplanted, in modern natural philosophy, by the theory of efficient causality, a process that went hand in hand with the establishment of a binary opposition between mind and body, or subject and object. As a result, a wholly new account of reality emerged that Paolo Rossi resumed in four key ideas: first, nature is not the manifestation of a living principle, but a system of matter in movement regulated by laws; second, these laws can be determined with mathematical precision; third, a very small number of these laws is sufficient to explain the universe; and fourth, any reference to vital forces or to final causes is excluded from the explanation of nature.

In the second part of his paper Papaux aims at showing that by adopting the geometrical mode of reasoning in the domain of law and politics, early modern philosophers subscribed to the model of the ‘maker’ and to the theory of efficient causes when they endowed human beings with rights, understood as ‘prerogatives’ or powers. Assuming that the rights of one individual are limited by the rights of others, they would have excluded that anything like natural ends or the common good of the community might limit individual liberty. In this vein, modern natural jurisprudence and political philosophy ensured that the law of the state could only appear as heteronomous law. Drawing on the ‘real’ Aristotelian wisdom, which was subsequently transformed by the modern artful Prometheus, Papaux concludes his analysis by surmising that by confronting man to the limits of the biosphere, and to his own finitude, the environmental crisis might well remind him that acknowledging that living well together, which presupposes a healthy environment, is part of the human condition. At the end of his paper, he points to a few instances in the domain of law announcing, perhaps, the surpassing of the thought structures of modernity and the return of wisdom.

As we have already seen, the temporal dimension of ecological problems is very important. This is reflected in theories dealing with the *responsibility towards future generations*. This is the second major issue this volume deals with. Philosophers often tackle this kind of responsibility in the context of theories of distributive justice and

focus on two prominent problems. The first one is called the non-reciprocity problem. Following Edward Page, who explains this problem with regard to climate change, we can assess it in the following way: suppose that an Agreement on Climate Change such as the Kyoto Protocol or perhaps the Paris Agreement that will replace it in 2020, is fully complied with. The vast majority of the persons that will be the main beneficiaries of the greenhouse gas reductions involved will never be in a position to repay their predecessors for their compliance since these predecessors will be dead before the beneficial impacts of their restraint have materialized. On the other hand, if we conceive of justice in terms of reciprocity (involving equal sacrifices or costs, or involving equal benefits), we are obligated to provide benefits to others, including members of different generations, only if these persons are in a position to reciprocate. Why would it then be just for earlier generations to sacrifice their own well-being for the sake of later generations whom they will never meet and who cannot reciprocate the benefits they received?⁹

The second major problem philosophers are dealing with is called the non-identity problem. The basic question here is whether members of the present generation can in fact harm members of future generations, that is, persons that do not yet exist. If so, it would be rather easy to develop a strong argument to show why members of the present generation are obligated to reduce greenhouse gas emissions. Since these emissions are largely responsible for global warming, and since the consequences of global warming will have significant and harmful effects on the well-being of future persons, we could simply refer to the duty not to harm someone else in order to justify the present generation's obligation to reduce greenhouse gas emissions. Things are however far more complicated than this. Indeed, those who try to explain our duties to future generations in the language of harm are confronted to "a unique philosophical puzzle" first addressed by Derek Parfit and restated by Edward Page in the following way:

Put simply, the puzzle is that actions or social policies that will lower future quality of life will harm few, if any, members of future generations because they are also necessary conditions of these people coming into existence.¹⁰

Why is it not possible to harm persons if their coming into existence depends on the actions and policies that will lower their future quality of life? The argument can be elucidated by means of Parfit's example of the 14-years-old girl.¹¹ At age 14, a girl chooses to have a child. We think that it would have been better for the girl to wait for several years to have a child and that what the girl has done was wrong. The reason we believe the girl's choice was wrong is that we think her baby will have a bad start in life. But could we also say that by her decision to have a child at age 14 the girl made her child worse off or that she harmed her child? Parfit argues that we can't. The reason for this is that this particular child could not have existed at all had the girl waited until she was older to have a child. Had she waited, she would have

9 See Axel Gosseries, *Penser la justice entre les générations: de l'Affaire Perruche à la réforme des retraites*, Paris, 2004, 124–183; Edward Page, *Climate Change, Justice, and Future Generations*, Cheltenham/Northampton, MA, 2006, 99–131.

10 Page (footnote 6), 132.

11 Derek Parfit, Energy Policy and the Further Future: *The Identity Problem*, in Gardiner (footnote 1), 112–121, here 113.

given birth to a different child. As a consequence, the child coming into existence has no reason to complain that her mother made him worse off or that she harmed him. In consequence, if it is the case that the actions and social policies the present generation adopts are necessary conditions of the very existence of future persons, it will be impossible to argue that these people were harmed by members of the present generation.

Philosophers have dealt with these problems at great length and proposed solutions to resolve them, for instance by developing theories of indirect reciprocity or of a non-relational concept of harm.¹² In the pages below, Catherine Larrère discusses a number of these theories with the aim to show that they all rely on the idea that accounting for future generations requires extending the moral community to beings that had so far been excluded from it (besides future generations, animals are yet another example for this). She then sets out to show that this way of assessing the environmental question is flawed, since this amounts to defining the environmental crisis in terms of scarcity of resources. Seen from this angle, the novelty of the environmental problems consists in the scarcity of resources (such as the Earth's capacity to absorb carbon dioxide) formerly considered as inexhaustible. The question then is how these scarce resources ought to be distributed justly between present and future generations. As Larrère argues, theories of distributive environmental justice do not adequately capture the problems we are facing, since by defining them as problems of 'stocks', they oppose man to the environment or to nature instead of considering men as part of the biosphere. Doing the latter would require rethinking the concept of nature in terms of processes. In this perspective, climate change needs to be accounted for on the basis of the effects the consumption of resources has on the processes, which constitute the great cycles of the biosphere, most notably the carbon cycle. In the last part of her paper, Larrère discusses how it could be possible to develop a new framework or a complex system allowing to integrate, in one and the same community, living and non-living beings, humans and non-humans, and to assign each of them a place.

In a paper stimulated by Larrère's critical account of the main stream approaches to intergenerational justice Michel Bourban argues that the latter are unable to account for the evolution of empirically based scientific knowledge about environmental problems. Based on a number of recent findings, he concludes that the most important thing to be done appears no longer to be, as this was suggested by the concept of sustainable development, the decoupling of economic growth and the consumption of scarce resources, but rather to restrain the flow of fossil energy in order to ensure that future generations will not be forced to live in a world highly detrimental to their well-being. Viewed from this angle, the main problem is not how to allocate the emissions rights fairly, but how not to exceed the remaining carbon budget, which is very limited indeed. This reasoning has important consequences for the highly contested question to what extent historic emissions (i. e., CO₂ emissions before 1990) ought to be accounted for in future climate negotiations. While acknowledging that the polluter pays principle (which accounts for past and present emissions) remains relevant, Bourban argues that it becomes much

12 For the former, cf. Gosseries (footnote 9), 124–183. For the latter, cf. Lukas H. Meyer/Dominic Roser, *Enough for the Future*, in Gosseries/Meyer (footnote 1), 219–248, here 230–232.

more important today that developing countries such as China, India, Brasil and South Africa, which have substantially increased their contribution to global warming during the past two decades, need as well to participate in the ecological transition. For this reason, the dichotomy between developed and developing countries, on which most philosophers greatly insist, seems no longer in tune with the rapidly evolving realities.

While Jaap Spier considers intergenerational justice from a very different, namely legal, angle, he proves as well to be rather skeptical about the effects of this concept on climate change mitigation and adaptation. Hence he shows in his paper that the meaning of intergenerational equity remains too vague to be of much use in the debate about mitigation, especially in the legal arena. Discussing the role it might play in adaptation, he argues that in light of the difficulties to properly account for the needs of the present generation, it seems rather unlikely that we really need intergenerational equity to forge effective remedies. The damages resulting from climate change will in most instances materialize already in the decades to come.

The third part of this volume deals with the *principle of common but differentiated responsibility*, which plays a key role in environmental law and ethics. This is for example the first principle invoked in article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), and it serves as a basis for philosophical reflections on the distribution of the costs and benefits linked to greenhouse gas emissions. The principle is also mentioned in the Convention on Biological Diversity (CBD), drafted in 1992 under the supervision of the UN. A number of difficulties have been raised regarding this principle. One of them concerns the way in which responsibility for environmental damages ought to be conceived: is the responsibility in question individual, collective, or both? Is it direct or indirect? Should we understand it as outcome responsibility, as remedial responsibility, or both?

To answer these questions it is useful to consider different versions of this principle: it can be interpreted as a polluter pays principle (those who have caused and are still causing environmental injustices or damages must pay for it), as ability to pay principle (those who can pay to prevent or compensate an environmental injustice or damage, even if they are not causally responsible for it, must do it), or as beneficiary pays principle (those who benefit from environmental injustices or damages must pay for them). All of these interpretations of the principle of common but differentiated responsibility have their strengths and weaknesses. This is why the question arises of how to balance or hierarchize these different principles: is each principle equally important or are there reasons for implementing one of the principles in priority? How should we decide about their proper interpretation and about balancing them against each other? Is there a methodology for doing so or is this a matter of casuistry?

In their very instructive paper, which takes account of empirical data of CO₂ emissions in a wide range of countries, Edwin Zaccai and Marine Lugen deal with the crucial elements at stake in international negotiations about climate change responsibilities. They first show how difficult it is to differentiate responsibilities of mitigation according to the principle of common but differentiated responsibilities. One proposal is to define responsibilities on the basis of past and present emissions.

In this case, all depends on the criteria on which one relies to calculate emissions: one can consider a country's emissions for a specific year or time period; it is also possible to consider the total emissions of a country or the per capita emissions; countries may as well be ranged on account of the rate of emission; or it is also possible to measure the carbon intensity of GDP (the relation between CO₂ emissions and GDP). Even if it were possible to agree on measuring emissions on the basis of one or several of these criteria, the problem would not be resolved. For causal responsibility remains highly contested in international negotiations. To strengthen their position in regard of this, developing countries often argue that the impacts of climate change will be felt in different way by various countries and regions in the world, which is yet another way of assessing climate change responsibility. The second element the authors consider is climate change adaptation, which has also become an important issue in international negotiations. Whether the responsibility to finance adaptation is defined on the basis of a consequentialist approach or on account of the ability to pay, Zaccai and Lugen conclude, based on empirical findings, that financial aid in this domain remains as insufficient as in the domain of official development aid. As the latter case demonstrates, one of the major problems seems to be that aid is mainly driven by political motivations, i. e., the degree of compatibility between donors' interest and development objectives of the recipient countries.

The third crucial element in climate change negotiations the authors deal with is technology development and transfer, aimed at climate change mitigation and adaptation. In this context, they show that technology transfer from developed to developing countries is often used as a tool in the competition between OECD countries. They also consider that the principle of different standards allowing a lesser level of harshness for environmental protection in developing countries, which was adopted in the Rio Declaration, is not compatible with the goals of climate change mitigation. One of the major defects of this principle is that it invites investors to produce with lower environmental standards in these countries. Based on these findings, Zaccai and Lugen conclude that urgency of climate change policy calls for agreements on mitigation and adaptation measures that are more demanding than those established by currently accepted principles. In their view, this requires above all the definition of criteria and categories, which better reflect the difference between various states, especially in terms of growth and power.

Alice Kaswan discusses the principle of common but differentiated responsibilities in the context of different theories of climate justice in the domain of adaptation. She begins by highlighting that climate effects will most likely disproportionately affect the poor and vulnerable, and thereby exacerbate inequalities already existing inside as well as between states. This is why she considers justice to be a key principle when it comes to define responsibilities in adaptation policies. In a broad overview of theories of justice, comprising both corrective and distributive justice as well as the various ways of explaining these notions, she explores the relevance these theories assign to differing principles of responsibility, including the 'polluter pays', the 'beneficiary pays' and the 'ability to pay' principles. A distinctive feature of her account is that Kaswan deals with responsibility not only in the international era, where it is most often discussed, but in the domestic realm as well. Another salient aspect of her reflections consists in the proposal to integrate theories of corrective

and distributive justice instead of considering them as mutually exclusive. Since corrective justice focuses on the role of the causal agent, it relies on the polluters pay principle. In contradistinction, distributive justice considers the degree to which an existing distribution of resources matches a conception of fairness, whereby the latter can be defined in terms of equality or sufficiency. Theories of distributive justice will thus lay greater weight on the beneficiary pays and on the ability to pay principles. The last feature to be highlighted in Kaswan's contribution is the significance she attributes to participatory justice. In her view, participation of the most vulnerable in domestic as well as international negotiations is an essential requirement of just adaptation policies.

Ivo Walliman-Helmer's paper provides an excellent complement to Kaswan's discussion of just adaptation. Based on a critical account of the Cancun Adaptation Framework, the author attempts to show why differentiating adaptation responsibilities based on the causal responsibility for greenhouse gas emissions is problematic. Taking account of the complexity of adaptation processes, he proposes to define responsibilities in regard of the capacity of countries and communities to subsidize, implement, and maintain adaptation measures. Since implementation and maintenance of such measures depend on the active participation of developing countries, the latter need to be duly respected when it comes to the assignment of responsibilities for adaptation.

Peter Ørebech, a law scholar specialized on customary law, elaborates on the working hypothesis that a bottom-up approach to legal norms and principles is best suited for fostering shared, but differentiated green responsibility. He first examines the kinds of obstacles different decision-making regimes may encounter when they try to resolve ecological issues, for instance market allocation and outsourcing, or regulation defined via negotiation and coordination, which are all too often dismissed in practice. Adopting the model of an autopoietic system, he then proposes to conceive the norms assuring protection of the environment on the basis of customary international law and general principles of law. While no one dictates these norms in particular, their success would rely on the interest of individual human beings and nations alike to benefit from a viable and stable solution assured by reciprocity. In the last part of his paper Ørebech attempts to show, relying on various concrete cases, how it might be possible to bridge the gap between philosophy and law, between idealism and pragmatism, by developing case law on environmental issues. Criticizing the positivistic position, which aims at downplaying the role of customary law and general principles as sources of international law, he contends that it is the role of the judge to decide which of two norms is applicable, and that equity is a relevant source of international law. Drawing on a detailed account of customary law and general principles of law, Ørebech aims at demonstrating how the latter can contribute to a green future.