Science without Borders and the Boundaries of Human Rights: Who Owes the Human Right to Science?

Une science sans frontière face aux frontières des droits de l'homme – Qui est débiteur du droit de l'homme à la science?

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Abstract

What is specific about the supply-side of the right to science is two-fold. First of all, by virtue of the interest protected by the right to science, i.e. the access to the benefits of science and hence an individual interest in a universal public good, and of the universal scope of the threats to that interest, the duties relative to the right to science are collective duties States and/or international institutions of jurisdiction bear together, and not only concurrently. This has consequences for their feasibility and hence for their recognition in the first place, but also for their co-allocation among States and institutions of jurisdiction and not only within each of them. Secondly, this also has an impact on the other private actors', States' and international institutions' responsibilities for the right to science, since those responsibilities are borne together as well and should, as a result, be coordinated in their primary allocation. In short, the "unbounded" nature of science should not be too quickly defeated by the "bounded" nature of human rights. If the human right to science and hence to innovation is to be protected effectively, one should be ready to innovate institutionally in order to "unbound" their corresponding duties and responsibilities.

Résumé

Les obligations et responsabilités relatives au droit à la science présentent deux spécificités. Tout d'abord, en vertu de l'intérêt protégé par le droit à la science, à savoir l'accès aux bienfaits de la science, et donc un intérêt individuel à un bien public universel, et la portée universelle des menaces à cet intérêt, les obligations relatives au droit à la science devraient être abordées comme des obligations collectives que les États et/ou les institutions internationales de juridiction portent ensemble, et non seulement de manière concurrente et séparée comme d'autres droits de l'homme. Ceci a des conséquences institutionnelles importantes pour l'allocation entre les États et les institutions de juridiction, et non seulement à l'intérieur de chacun d'entre eux. Deuxièmement, ceci a également un impact sur les responsabilités pour le droit à la science d'autres acteurs privés, États et institutions internationales, puisque ces responsabilités naissent ensemble et doivent donc être coordonnées dans leur allocation primaire. En bref, le caractère « désenclavé » et universel de la science ne doit pas être mis en échec par le caractère « enclavé » et juridictionnel des obligations relatives aux droits de l'homme. Pour que le droit à la science, et par-là à l'innovation, puisse être protégé de manière efficace, nous devrions être prêts à innover aussi d'un point de vue institutionnel pour « désenclaver » les responsabilités et obligations correspondantes.

* Many thanks to Odile Ammann and Alexandre Biedermann for their research assistance, and to Gaelle Mieli for her help with the formatting. Special thanks also to the editors and anonymous reviewers for their useful comments and critiques.

I. Introduction

One of the most difficult questions arising in the context of the specification of the "Right to enjoy the benefits of scientific progress and its applications" (REBSPA; Article 15(1)(b) International Covenant on Economic, Social and Cultural Rights [ICESCR])[1] (hereafter, the (human) "right to science"[2]) pertains to the identification of its duty-bearers. This is also what one may refer to as the "duty-side"[3] or "supply-side" of the right to science. It amounts to the personal and, by extension, territorial scope of the duties corresponding to the right to science.[4]

At first sight, this should not come as a surprise for the supply-side of human rights in general is among the most controversial questions in human rights theory and practice.[5] What makes it even harder to address in this context, however, is the object of the right to science, and accordingly of its corresponding duties. A brief survey of the existing international human rights instruments reveals that the right to science protects the following interests *qua* object of the right: primarily, the "non-discriminatory access to the benefits of scientific progress and its applications" (i), but also, by extension, the "opportunities for all to contribute to the scientific enterprise" (ii) and the "protection from adverse effects of science" (iii).[6] Focusing on the first and most important of those interests,[7] the difficulty for the supply-side of the right to science stems from the fact

[1] See also Article 27(1) Universal Declaration of Human Rights [UDHR], Proclaimed by UN General Assembly, Resolution 217 A (III) (10 December 1948) (A/RES/3/217 A); UN Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind, Proclaimed by UN General Assembly, Resolution 3384 (XXX) (10 November 1975) (A/RES/30/3384); UNESCO Universal Declaration on Bioethics and Human Rights (19 October 2005); UNESCO, Venice Statement on the Right to Enjoy the Benefits of Scientific Progress and its Applications (Article 15(1)(b) ICESCR) (16-17 July 2009).

[2] See for this expression, e.g. Report of the Special Rapporteur in the field of cultural rights Ms. Farida Shaheed on the right to enjoy the benefits of scientific progress and its applications, presented at the Twentieth Session of the Human Rights Council (14 May 2012) (A/HRC/20/26), p. 3; P. Saul, D. Kinley, and J. F. Mowbray, "Art. 15: Cultural Rights", in B. Saul, D. Kinley, and J.F. Mowbray, *The International Covenant on Economic, Social and Cultural Rights: Commentary, Cases and Materials*, Oxford, Oxford University Press, 2014, p. 1175, at p. 1212; J. Ringelheim, "Cultural Rights", in D. Moeckli, S. Shah, and S. Sivakumaran (eds), *International Human Rights Law*, 2nd edition, Oxford, Oxford University Press, 2013, p. 286, at p. 296-297.

[3] This article refers to "duties" and "obligations" interchangeably.

[4] The material scope of the right to science, i.e. the content of its specific duties including its core duties, is addressed in other contributions in this volume.

[5] See on the "supply-side" of human rights, e.g. H. Shue, *Basic Rights: Subsistence, Affluence, and US Foreign Policy*, 2nd edition, Princeton, Princeton University Press, 1996; J. Nickel, "How Human Rights Generate Duties to Protect and Provide", *Human Rights Quarterly*, vol. 15, nº 1, 1993, p. 77. As I have explained in S. Besson, "The Allocation of Anti-poverty Rights Duties – Our Rights, but Whose Duties?", in K. Nadakavukaren Schefer (ed.), *Duties to Address Poverty*, Cambridge, Cambridge University Press, 2013, p. 408, the supply-side of human rights pertains to three issues: the specification of concrete human rights duties; the identification of the concrete human rights duty-bearers; and the allocation of specific duties between them. In this article, I will focus on the latter two only, for the first is addressed in other contributions in this volume.

[6] See e.g. Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, p. 9 ff.; Venice Statement 2009, *op. cit.*, Article 13(a)(b) and (c).

[7] In this article, I will focus primarily on the non-discriminatory access to the benefits of scientific progress and its applications. Indeed, the second interest amounts to a participatory public good that cannot be enjoyed individually. It cannot therefore be the object of an individual right and hence of a human right. As to the third interest, it is not an interest that may be protected by the right to science when the latter is understood as protecting the primary interest mentioned before. Every human right entails a right to exclude oneself from the benefit of that right. For this paternalistic approach to the right to science defined, with respect to this third alleged interest, by reference to the protection of dignity and other human rights, see e.g. R.P. Claude, "Scientists' Rights and the Human Right to the Benefits of Science", in A. Chapman and S. Russell (eds), *Core Obligations: Building A Framework for Economic, Social and Cultural Rights*, Antwerp, Oxford, and New York, Intersentia, 2002, p. 247; Committee on Economic, Social and Cultural Rights [CESCR], Guidelines on Treaty-Specific Documents to be Submitted by States Parties

that the production of science and, accordingly, the access to its benefits take place in many different places at the same time. This is actually how it should be in light of the "universal"[8] or, better, "global" nature of science. As a result, what one may coin the "unbounded" nature of science is in tension with the "bounded" nature of human rights. Of course, human rights are universal to the extent that they belong to everyone and are owed by all States.[9] However, they are also bounded to the extent that they are only owed by one or many State(s) at a time that have jurisdiction, on the one hand, and only to those situated within the boundaries of its or their jurisdiction and hence to those who are in a relationship to it or them and become right-holders on that basis, on the other (e.g. Article 1 European Convention on Human Rights [ECHR]) – whether that jurisdiction is territorial or extra-territorial.

More specifically, the fact that, like other human rights' duties, the supply-side of the right to science is inherently bounded by the relationship of jurisdiction between right-holders and duty-bearers gives rise to at least three difficulties.

First and foremost, the access to the benefits of science is not an interest that may be protected effectively domestically only; it has to be secured concurrently in every State at the same time for science is a collective endeavour.[10] This in turn challenges the way in which human rights are usually protected, i.e. by one State at a time. Indeed, any given State of jurisdiction may not always be in a position on its own to protect the right to science of those under its jurisdiction effectively against many of the threats to the interest protected by the right, i.e. the access to the benefits of science, that escape its jurisdiction. Or, conversely, some States may set scientific priorities domestically that directly conflict with others' and affect the latter's ability to secure access to the benefits of science while securing theirs. Some of those threats may actually stem from private actors depending from another State, but also from international law and international institu-

under Articles 16 and 17 of the International Covenant on Economic, Social and Cultural Rights (24 March 2009) (E/C.12/2008/2), § 70(b). Generally, against such a paternalistic reading of the contemporary scientific endeavour, see P. Kitcher, *Science, Truth and Democracy*, Oxford, Oxford University Press, 2001. In any case, those two interests are indirectly covered by other human rights, such as the human right to health, to food, to information or to expression.

[8] On the universality of science, see e.g. Kitcher, *Science, Truth and Democracy*, *op. cit.*; R. K. Merton, *The Sociology of Science: Theoretical and Empirical Investigations*, Chicago, Chicago University Press, 1973. See also UNESCO, Recommendation on the Status of Scientific Researchers (20 November 1974), n. 16-19 on the "international dimension of science"; International Council for Science, Freedom, Responsibility and Universality of Science (October 2008). Of course, there may be contextualized and hence local forms of science, but their scientific characterization depends on their being or claiming to be international.

[9] Not necessarily with the same content, of course: human rights duties are specified in context and, beyond their minimal content, may vary from one State to the next. See also A. Müller, "Remarks on the Venice Statement on the Right to Enjoy the Benefits of Scientific Progress and its Applications (Article 15(1)(b) ICESCR)", *Human Rights Law Review*, vol. 10, nº 4, 2010, p. 765, pp. 782-783.

[10] This tension is particularly patent in the reference to "equal" access or access "without discrimination". That additional reference is usually interpreted as amounting to more than a domestic non-discrimination requirement of the kind that applies to all human rights and hence to all ICESCR rights. See e.g. the discussion in the Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, pp. 9-11, that conflates domestic and international measures to promote equality in the access to the benefits of science without distinguishing between them (compare e.g. §§ 26-33 to 34-38). See also Venice Statement 2009, *op. cit.*, §§ 3 and 4, referring to "inequalities among and within States" and to technological disparities between "societies".

tions.[11] This first difficulty pertains, in other words, to the concurrence of human rights duties or responsibilities for human rights of States other than a given State(s) of (territorial or extra-territorial) jurisdiction, and to their overall coordination.

Secondly, private actors play an important role in the production of scientific knowledge today, whether through financing, developing or diffusing it. This raises important questions as to those private actors' direct duties or responsibilities for the right to science or, at least, as to the ways in which one or the other State of jurisdiction may be under duties or responsibilities to protect the right to science from them. This second difficulty pertains, in other words, to the human rights duties or responsibilities of or for private actors. Finally, international organizations created by States to facilitate cooperation on scientific issues, such as intellectual property or trade, often hamper equal access to the benefits of scientific progress and its applications, thus raising important questions as to their direct duties or responsibilities under the right to science or about the ways in which their member States could bear duties with respect to their actions and omissions. This final difficulty pertains, in other words, to the human rights duties or responsibilities of or for international institutions.

Those three difficulties are best exemplified by looking at contemporary debates surrounding unequal access to the benefits of scientific progress, and in particular access to vital medication (mostly in relation to the right to health), access to seed technology (mostly in relation to the right to food), access to scientific discoveries able to enhance environmental protection (mostly in relation to the right to a safe environment),[12] or access to information and communication technologies and the Internet (mostly in relation to the right to privacy and information).[13] In the first of those cases, for instance, many States are usually involved at the same time, such as notably South Africa or India and the United States in the past, and with various jurisdictional but also non-jurisdictional relationships to the holders of the right to science ; private corporations are also implicated, and invoke various commercial and intellectual property rights to choose which drugs

[11] See Venice Statement 2009, *op. cit.*, § 4. See also C. Timmermann, "Sharing in or Benefiting from Scientific Advancement ?", *Sci Eng Ethics*, vol. 20, n° 1, 2014, p. 111, at p. 121-125.

[12] See e.g. CESCR, Report on the 7th Session (23 November-11 December 1992) (E/1993/22), § 73 (Belarus).

[13] On the relationship between the right to science and other human rights, see e.g. Saul, Kinley, and Mowbray, "Art. 15 : Cultural Rights", *op. cit.*, pp. 1223-1224 ; Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, p. 8, pp. 16-23. On the right to science and the right to food, see e.g. O. De Schutter, "The Right of Everyone to Enjoy the Benefits of Scientific Progress and the Right to Food : From Conflict to Complementarity", *Human Rights Quarterly*, vol. 33, n° 2, 2011, p. 304 ; H. M. Haugen, "Human Rights and Technology : A Conflictual Relationship ? Assessing Private Research and the Right to Adequate Food", *Journal of Human Rights*, vol. 7, n° 3, 2008, p. 224 ; on the right to science and the right to health, see e.g. Y. Donders, "The Right to Enjoy the Benefits of Scientific Progress : In Search of State Obligations in Relation to Health", *Medicine, Health Care and Philosophy*, vol. 14, n° 4, 2011, p. 371 ; and on the right to science and intellectual property, see e.g. L. Helfer and G. W. Austin, *Human Rights and Intellectual Property : Mapping the Global Interface*, Cambridge, Cambridge University Press, 2011, pp. 233-242 ; A. Plomer, "The Human Rights Paradox : Intellectual Property Rights and Rights of Access to Science", *Human Rights Quarterly*, vol. 35, n° 1, 2013, p. 143 ; L. Shaver, "The Impact of Intellectual Property Regimes on the Right to Science and Culture", Background note submitted to the Special Rapporteur in the field of cultural rights Ms. Farida Shaheed (20 May 2014) ; Report of the Special Rapporteur in the field of cultural rights Ms. Farida Shaheed on copyright policy and the right to science and culture, presented at the Twenty-eight Session of the Human Rights Council (24 December 2014) (A/HRC/28/57).

to produce in priority or to protect their drugs from the production of cheaper and more affordable generics that could be made available to poor States' medical institutions; and, finally, international organizations, such as the World Trade Organization (WTO) or the European Union (EU) in this case, have contributed to develop and entrench the international law framework for trade and intellectual property in which the different claims are being formulated and justified on all sides.

It is this article's aim to explain how we should identify who owes the duties relative to the right to science and explain how those duties should be specified and allocated between the duty-bearers. Interestingly, while those difficulties with the identification and coordination of the duty-bearers of the right to science were flagged in the 2009 UNESCO Venice Statement already (e.g. 3(i) to (iii)), they have not been given much attention in the Special Rapporteur in the field of cultural rights' 2012 Report[14] or in the fast-developing literature.[15] A first reason one may venture for this omission pertains to the meaning of science itself and the difficulty to define it. This indeterminacy has actually plagued the practice of the right to science and its monitoring by the Committee on Social, Economic and Cultural Rights [CESCR] to date.[16] Secondly, science and technology are "inextricably linked" with the means of protection of other human rights (see e.g. Article 2(1) and 23 ICESCR in general; Article 11(2) ICESCR with respect to the right to food).[17] This makes the supply-side of the right to science not only instrumental but even necessary to that of other rights,[18] and its specification even harder than others', as a result.

The neglect of the supply-side of the right to science is even more surprising, as it is with respect to the other rights listed in the ICESCR, including cultural rights under Article 15 (1) ICESCR, that the potential duties and responsibilities of States other than the State(s) of jurisdiction, on the one hand, and of or, at least,

[14] The only references to the obligations of actors other than States of jurisdiction are on pp. 70-73 of the Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit*. And there is very little mention of the challenge of global protection for States' duties, beyond the usual mention of the vague responsibility of "international assistance and cooperation".

[15] There are exceptions, of course: e.g. Müller, "Remarks on the Venice Statement", *op. cit.*, at pp. 782-783; A. Chapman, "Towards an Understanding of the Right to Enjoy the Benefits of Scientific Progress and its Applications", *Journal of Human Rights*, vol. 8, n° 1, 2009, p. 1, at pp. 24-27 and 29-31. See also, albeit not from a human rights perspective, T. Pogge, "The Health Impact Fund: Enhancing Justice and Efficiency in Global Health", *Journal of Human Development and Capabilities*, vol. 13, n° 4, 2012, p. 537; A. Buchanan, T. Cole, and R. O. Keohane, "Justice in the Diffusion of Innovation", *The Journal of Political Philosophy*, vol. 19, n° 3, 2011, p. 306.

[16] See e.g. Chapman, "Towards an Understanding", *op. cit.*; E. Riedel, "Sleeping Beauty or Let Sleeping Dogs Lie? The Right of Everyone to Enjoy the Benefits of Scientific Progress and its Applications (REBSPA)", in H. Hestermeyer *et al.* (eds), *Coexistence, Cooperation and Solidarity, Liber Amicorum Rüdiger Wolfrum*, Leiden, Nijhoff, 2011, p. 503; Müller, "Remarks on the Venice Statement", *op. cit.*, p. 766.

[17] See e.g. Venice Statement 2009, *op. cit.*, § 12(d). See also W.A. Schabas, "Study of the Right to Enjoy the Benefits of Scientific and Technological Progress and its Applications", in Y. Donders and V. Volodin (eds), *Human Rights in Education, Science, and Culture: Legal Developments and Challenges*, Aldershot, Ashgate, 2008, p. 273, at p. 302; Timmermann, "Sharing in or Benefiting from Scientific Advancement?", *op. cit.*, at pp. 125-127.

[18] See e.g. O. De Schutter *et al.*, "Commentary to the Maastricht Principles on Extra-Territorial Obligations of States in the Area of Economic, Social and Cultural Rights", *Human Rights Quarterly*, vol. 34, n° 4, 2012, p. 1084, at p. 1153, on "technological capacities" as a ground for additional responsibilities for economic, social and cultural rights of all States Parties to the ICESCR.

for private and non-State actors, on the other, have been discussed the most.[19] This focus, especially on the part of the CESCR, may be explained by reference to the absence of an explicit jurisdiction clause in the ICESCR, but also by the provision mentioning "international assistance and cooperation" among States Parties (Article 2(1) ICESCR). *Prima facie,* therefore, there is a rich range of legal and institutional mechanisms to work with when spelling out the duty-side of the right to science.

My argument in this article will be that, unlike most other human rights duties, the duties arising out of the right to science are collective duties, i.e. duties States and international institutions of jurisdiction bear together and not only concurrently, albeit for every State or institution only to the respective right-holders situated under their jurisdiction. The structure of the proposed argument will be four-pronged. In a first section, I will introduce key notions and distinctions for the supply-side of human rights in general : the notions of jurisdiction and responsibility, and, more exactly, the distinctions between territorial and extra-territorial jurisdiction and between human rights duties and responsibilities for human rights (II.). I will then turn to the identification of the bearers of human rights duties and of responsibilities for human rights, on the one hand, and to the allocation between them of human rights duties and responsibilities for human rights, on the other (III.). It is important to discuss those issues in international human rights law in general, first, as they are rarely addressed in international human rights law scholarship in full detail and the practice is still in flux in some respects. In a third section, I will address the specificities of the supply-side of the right to science : there, I will argue for the existence of collective duties relative to the right to science and for collective responsibilities for the right to science and, on that basis, for the co-specification and co-allocation of those duties, but also for the coordination of the corresponding responsibilities (IV.).

Before starting with the argument, a methodological *caveat* is in order. This article is part and parcel of a more general project of developing a legal theory of human rights.[20] Starting from legal questions and categories, it proposes an interpretation of international human rights law. Concretely, in this case, this means identifying the justifications underpinning international human rights law on the supply-side of the right to science, in order to present the existing law and practice in its best light. Like any legal interpretation, it is constrained and shaped by the normative practice of law, but it is also part of that practice and hence constrains it and shapes it in return. So-doing, the theory of the supply-side of the right to science I propose is not trapped in the kind of normatively inert descriptions of the human rights practice one finds in so-called "political" theories of human rights,[21] on the one hand, but it is not freed from that prac-

[19] See e.g. O. De Schutter, *International Human Rights Law*, 2nd edition, Cambridge, Cambridge University Press, 2014, p. 187 ff.
[20] See S. Besson, "The Law in Human Rights Theory", *Journal for Human Rights*, vol. 7, n° 1, 2013, p. 120.
[21] See e.g. C. Beitz, *The Idea of Human Rights*, Oxford, Oxford University Press, 2009.

tice and from having to account for it as are the kind of practice-guiding normative accounts of moral human rights one finds in so-called "ethical" human rights theories,[22] on the other.

II. Two Key Notions: Jurisdiction and Responsibility

There are two key notions one encounters in the international human rights practice and that help us understand who "owes" those rights: "jurisdiction" (A.) and "responsibility" (B.). The first explains who owes duties *stricto sensu*, while the latter explains what other responsibilities arise concurrently to those duties and for whom.

In a nutshell, the first notion helps realize that human rights should fundamentally be understood as normative relationships that correspond to relationships of jurisdiction. Such relationships have to be institutional, even more so if they are to be democratic and hence egalitarian.[23] Does it mean that only States may bear human rights duties? No, precisely: States do, of course, bear those duties, but so does any international institution that can exercize jurisdiction and be organized democratically. To date, this has only been the case of the EU.[24] Does it mean that other States and international institutions are off the hook of human rights? No, not at all. And here comes the second notion one encounters in human rights practice: responsibilities for human rights. They should be carefully distinguished from human rights' duties. Responsibilities for the protection and promotion of human rights (by their respective States and international institutions of jurisdiction) are concurrent to the human rights duties of those States and institutions, and bear on other subjects than those States and institutions and in particular on all other States, international institutions and even private actors. They are not owed to the right-holders and also have a different content.

A. Jurisdiction: Territorial and Extra-Territorial Human Rights Duties

The trigger for the application of human rights in international human rights law is jurisdiction. Only those people under the jurisdiction of a given State or international institution hold rights against that very State or institution, and only that State or institution bears duties to those people. Even though not all international human rights treaties include a jurisdiction clause (e.g. Article 1 ECHR), its

[22] See e.g. J. Griffin, *On Human Rights*, Oxford, Oxford University Press, 2008.
[23] See Besson, "The Allocation of Anti-poverty Rights Duties", *op. cit.*; and S. Besson, "International Institutions' Responsibilities for Human Rights", *Social Philosophy & Policy*, vol. 32, n° 1, 2015, forthcoming.
[24] See Besson, "International Institutions' Responsibilities for Human Rights", *op. cit.*

existence is assumed in practice. It is the case of the ICESCR that does not entail an explicit jurisdiction clause.[25]

In a nutshell, jurisdiction refers to *de facto* authority, that is to say the practical political and legal authority that is not yet legitimate or justified authority, but claims to be or at least is held to be legitimate by its subjects. *Qua de facto* authority, jurisdiction consists in effective, overall and normative power or control (whether it is prescriptive, executive or adjudicative).[26] It amounts to more than the mere exercize of coercion or power, as a result : it also includes a normative dimension by reference to the imposition of reasons for action on its subjects and the corresponding appeal for compliance.

Importantly, jurisdiction applies both on the domestic territory and extra-territorially.[27] Jurisdiction is functional therefore, and not primarily personal or territorial although personal and territorial control may be used as shorthand or criteria when assessing jurisdiction. Jurisdiction is an all or nothing matter and not a matter of degree : either one is giving reasons for action and requiring compliance, or one is not. It cannot therefore be split into levels or acquired gradually.

B. Responsibility : Human Rights Duties and Responsibilities for Human Rights

A lot of confusion around human rights duties and the identification of their bearers, especially in circumstances of extra-territorial jurisdiction, stems from an insufficiently reflected use of the term "responsibilities", and in particular from the insufficient delineation of "human rights duties" *stricto sensu* from "responsibilities for human rights" that fall on other bearers than the human rights duty-bearers.

Human rights duties are perfect or directed duties : they are owed to someone, the right-holder. They constitute the supply-side of a normative claim, called a human right. Responsibilities for human rights, by contrast, are responsibilities to hold accountable (monitor, ensure compliance), assist or aid (promote, train ; mostly through cooperation) and intervene (as an *ultima ratio* only).[28] They include responsibilities to protect and remedy, but also responsibilities to respect. Some are preventive while others are remedial.

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[25] See De Schutter, *International Human Rights Law*, *op. cit.*, p. 187 ff. See also the Maastricht Principles on Extra-territorial Obligations of States in the Area of Economic, Social and Cultural Rights (September 2011) ; De Schutter *et al.*, "Commentary to the Maastricht Principles", *op. cit.*

[26] See Eur. Ct. H.R. (GC), *Al-Skeini and others* v. *the United Kingdom*, 7 July 2011 (Appl. No. 55721/07).

[27] See e.g. S. Besson, "The Extra-Territoriality of the European Convention on Human Rights. Why Human Rights Depend on Jurisdiction and What Jurisdiction Amounts to", *Leiden Journal of International Law*, vol. 25, n° 4, 2012, p. 857 ; W. Vandenhole, "Extraterritorial Human Rights Obligations : Taking Stock, Looking Forward", *J.E.D.H./E.J.H.R.*, 2013/5, p. 804 ; S. Besson, "L'extra-territorialité des droits de l'homme internationaux : juridictions concurrentes, obligations conjointes et responsabilités partagées", in P. D'Argent (ed.), *Droit des frontières internationales*, Paris, Pedone 2015, forthcoming.

[28] See C. Beitz, *The Idea of Human Rights*, *op. cit.*, at pp. 109 and 163.

Besides the identity of their bearers, the primary characteristic of responsibilities for human rights, and what distinguishes them from human rights duties, is that responsibilities for human rights are not directed to a right-holder and are not correlative to a right. Secondly, most of the time, they have a content distinct from human rights duties for they do not protect the interests at stake directly, but the ability of the States or international institutions of jurisdiction to protect them. The difference between responsibilities for human rights and human rights duties explains why the former are not subsidiary, secondary or default human rights duties, but concurrent responsibilities that apply alongside human rights duties.[29] Responsibilities for human rights help prevent human rights violations by human rights duty-bearers or remedy those violations when human rights duty-bearers are unable or unwilling to fulfill their duties.[30]

A key example of responsibilities for human rights, of course, is the "responsibility to protect" (R2P) of all States in the international community that was endorsed by the United Nations (UN) through a General Assembly Resolution in 2009.[31] Another example are the "corporate responsibilities to respect human rights"[32] developed in the context of the United Nations' effort to curtail the negative impact of multinational corporations on human rights' protection, and that bear on corporations but also, concurrently albeit differently, on their States of origin. Finally, the 2011 Maastricht Principles on Extra-territorial Obligations (ETO) of States refer to the "responsibilities" for human rights of other States besides the States of jurisdiction's (territorial and extra-territorial) human rights "duties" (e.g. Article 29 ETO).[33] They echo the so-called "supporting"[34] responsibilities of "international cooperation and assistance" under the International Covenant on Economic, Social and Cultural Rights (Article 2(1) ICESCR) that bear on all States parties to the Covenant.

III. The Bearers of Human Rights Duties and Responsibilities in General

The identity of the bearers of human rights duties differs from that of the bearers of responsibilities for human rights: States and international institutions of jurisdiction for the former (A.), and private actors, States and international insti-

[29] See also Beitz, *The Idea of Human Rights*, *op. cit.*, p. 108; D. Miller, "The Responsibility to Protect Human Rights", in L.H. Meyer (ed.), *Legitimacy, Justice, and Public International Law*, Cambridge, Cambridge University Press, 2000, p. 232, at p. 233.

[30] The responsibilities for human rights at stake in this article should not be conflated with secondary or remedial responsibilities that arise from the violation of primary human rights duties. See on the latter, e.g. Besson, "L'extra-territorialité des droits de l'homme internationaux: juridictions concurrentes, obligations conjointes et responsabilités partagées", *op. cit.*

[31] See UN General Assembly, Resolution 63/308, "The Responsibility to Protect" (14 September 2009) (A/RES/63/308).

[32] See Office of the High Commissioner for Human Rights [OHCHR], Guiding Principles on Business and Human Rights, Endorsed by Human Rights Council, Resolution 17/4 (6 July 2011) (A/HRC/RES/17/A).

[33] See the Maastricht Principles, *op. cit.*

[34] See OHCHR, Guiding Principles on Extreme Poverty and Human Rights, Adopted by Human Rights Council, Resolution 21/11 (18 October 2012) (A/HRC/21/11), §§ 93-94.

tutions other than those of jurisdiction for the latter (B.). Once the bearers of human rights duties and responsibilities for human rights identified, the next question to arise is the allocation of specific human rights duties and responsibilities for human rights to those different bearers (C.).

A. The Identification of Human Rights Duty-Bearers

The identification of human rights duty-bearers occurs through the relationship of jurisdiction. The bearers of human rights duties are States (1.) and international institutions of jurisdiction (2.).

1. *States of Jurisdiction*

a) For their Agents

To date, the institutions that exercize jurisdiction under international law are primarily States. They are the institutions of political communities in which people share roughly equal and interdependent stakes, and that may therefore be sufficiently egalitarian to respect human rights, on the one hand. They are also the ones, on the other, that both have and ought to exercize regular effective normative control over the community of right-holders of which they are constituted and hence have jurisdiction over them. As a result, they are the primary human rights' duty-bearers.

Further specifications about the identity of specific institutional duty-bearers within the State may be reconstructed from rules of attribution of conduct and responsibility used to attribute remedial responsibilities in case of violation of the State of jurisdiction's human rights duties in practice. Thus, States bear human rights duties for and through various agents whose conduct may be attributed to it. This includes their own agents, of course. Those agents in any given State of jurisdiction include all its organs, whether legislative, executive or judicial and whether central or decentralized as in federal States (e.g. Article 4 ARSIWA[35]). They also include those that are borrowed from other States in some cases (e.g. Article 6 ARSIWA). As I will explain now, States also bear human rights duties, under certain conditions, "for" private actors (b)) and international institutions (c)).

b) For Private Actors

Private actors do not bear human rights duties under international human rights law. The explanation lies in the mediating role of institutions in the protection of human rights in practice, but also in the equality and mutuality of human

[35] Articles on the Responsibility of States for Internationally Wrongful Acts; see UN General Assembly, Resolution 56/83 (12 December 2001) (A/RES/56/83).

rights.[36] Institutions are able to re-allocate human rights duties and mediate the resources and burdens among individuals, but they are also able to protect the equality of all in doing so and to ensure the overall legitimacy of the process. Of course, private actors bear responsibilities for human rights, as we will see, but those responsibilities should not be conflated with human rights duties.

States themselves bear human rights duties with respect to the actions or omissions of private actors. They do so, both when private actors' acts may be attributed to the State and the State bears indirect duties as a result, on the one hand, and when the State bears direct positive duties of its own to protect against private actors, on the other.

First of all, then, because certain acts of private actors may be attributed to the State, the State bears duties in those cases as if those actors were its agents. One may imagine different cases : private actors are exercizing elements of governmental authority (e.g. Article 5 ARSIWA) ; their conduct is directed or controlled effectively by the State (*de facto* organs) (e.g. Article 8 ARSIWA) ; their conduct was carried out in the absence or default of the official authorities (e.g. Article 9 ARSIWA) ; or, finally, their conduct is acknowledged by the State as its own (e.g. Article 11 ARSIWA).

Secondly, States also bear positive duties of their own to protect right-holders against the conduct of private actors under certain conditions.[37] Those positive duties include duties to prevent violations by private actors, for instance through private or criminal legislation or police actions, but also to remedy them if the duties to prevent have failed, for instance through the judicial system. Those duties to prevent are duties of due diligence submitted to strict conditions : the State could and should have known about the private threat, first, and it was reasonable to expect it to intervene, second. The mere fact that the violation occurred is not enough for the duty to prevent to be regarded as breached. All this applies whether jurisdiction is territorial or extra-territorial.[38]

An interesting question is whether the extra-territorial jurisdiction of a State for the sake of positive duties to protect extends to cases when private actors of the nationality of that State and domiciled in its territory are violating human rights abroad where no effective personal or territorial control is exercized by the State's agents. This is a construction put forward by authors and human rights activists who distrust the ability of the host State to protect human rights effectively against private actors and especially against transnational corporations. It fails to convince, however, because of the disjunction between the place of relevant jurisdiction and hence of effective and regular normative control over the right-holders, on the one hand, and the place of effective control necessary over the

[36] See Besson, "International Institutions' Responsibilities for Human Rights", *op. cit.* ; Shue, *Basic Rights*, *op. cit.*
[37] See e.g. Eur. Ct. H.R. (GC), *O'Keeffe* v. *Ireland*, 28 January 2014 (Appl. No. 35810/09).
[38] See Besson, "The Extra-Territoriality of the European Convention on Human Rights", *op. cit.*

private actors responsible for the violation in order for the State's positive duties to arise, on the other.

Yet, according to the CESCR, "States have an obligation to take steps to prevent human rights contraventions from abroad by corporations which have their main office under their jurisdiction" –"without", of course, "infringing the sovereignty or diminishing the obligations of the host States." This includes setting out clearly "the expectation that all business enterprises domiciled in their territory and/or jurisdiction respect human rights throughout their operations", including abroad.[39] Two arguments have been made to support this position,[40] although none of them very successfully.

The first argument for extending the scope of States' extra-territorial positive duties to protect to the acts of private actors abroad, even when States have no jurisdiction over there, lies in their alleged duty not to allow one's territory to be used by private actors to cause damage to another State.[41] The problem is that this duty does not exist generally outside of explicit and specific duties of diligence of the State, and this is precisely the duty we are missing here. Such a duty does not exist under general international law, and international human rights law does not provide one either.[42] The second argument pertains to the duty of all States Parties to international human rights treaties not to create obstacles to the fulfilment of their human rights duties by other States Parties.[43] There is a qualification issue here: while it is true that the former have responsibilities for the protection of human rights in all other States Parties, they incur no human rights *duties* to do so that are owed to the right-holders. Nor do their rights to claim respect for human rights duties, that are owed *erga omnes*, imply a duty to do so (except under Article 41 ARSIWA).

c) For International Institutions

States may also bear human rights duties in relation to the activities of international institutions. One may distinguish between the indirect obligations that arise from the attribution of acts committed by international institutions to States, on the one hand, and the obligations to protect from international institutions that fall directly onto States, on the other.

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[39] Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, at pp. 15 and 19. See also CESCR, Statement on the Obligations of States Parties Regarding the Corporate Sector and Economic, Social and Cultural Rights (20 May 2011) (E/C.12/2011/1), § 5; OHCHR, Guiding Principles on Business and Human Rights, *op. cit.*

[40] See De Schutter, *International Human Rights Law*, *op. cit.*, p. 187 ff.

[41] See e.g. CESCR, General Comment 14, The Right to the Highest Attainable Standard of Health (11 August 2000) (E/C.12/2000/4), § 39; CESCR, General Comment 15, The Right to Water (20 January 2003) (E/C.12/2002/11), §§ 31 and 35-36; CESCR, Statement on the Obligations of States Parties Regarding the Corporate Sector and Economic, Social and Cultural Rights, *op. cit.*, §§ 3 and 5.

[42] Hence the need for the Maastricht Principles 13 and 23. See De Schutter *et al.*, "Commentary to the Maastricht Principles", *op. cit.*, at pp. 1112-1115.

[43] See e.g. Maastricht Principle 21(a).

First of all, in cases where States' organs act for an international institution, the latter's conduct may be attributed to States provided they share effective control over their organs (e.g. Articles 6-7 DARIO[44] and Article 57 ARSIWA). What this means is that States bear human rights duties in relation to the acts or omissions of international organizations when they (also) control the agents acting for the organization. Other grounds of attribution of responsibility of the organization to its member States, such as aid or assistance, direction and control or coercion of the organization by a State (Articles 58-62 DARIO), are only available when the organization also bears human rights duties itself.

In some cases, however, States may try to escape their human rights duties by transferring competences to international institutions that have distinct personality, but do not have jurisdiction over the corresponding right-holders and do not bear human rights duties of their own, as a result. True, States do not incur responsibility for those acts by the mere fact of membership in the international institution (e.g. Article 62 DARIO) and may not therefore be regarded as bearing related human rights duties as a result. However, this potential abuse of membership in an international institution has led to the development of a regime of attribution of international responsibility of States for the intentional circumventing of *their* human rights duties through (membership in) an international institution and conduct of the latter, even when the act in question is not internationally wrongful for the international institution itself (e.g. Article 61 DARIO).

What this means, secondly, then is that States are ascribed an international human rights-based positive duty of diligence to make sure that their membership in the organization and the activity of the organization do not prevent them from protecting human rights and that human rights protection provided by the organization is equivalent to their international human rights law duties.[45] This comes close to a duty to protect of States. It is more limited, however, to the extent that it leaves a gap in cases where States could not have reasonably anticipated the problem or have secured some minimal equivalent safeguards.

2. *International Institutions of Jurisdiction*

There is nothing in this account that precludes extending human rights duties to international institutions beyond States, provided they have jurisdiction. What is required, however, is for them to amount to political communities where political equality may be claimed and exercized, on the one hand, and where the kind of overall and effective normative control discussed before may apply, on the other.

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[44] Draft Articles on the Responsibility of International Organizations ; see UN General Assembly, Resolution 66/100 (9 December 2011) (A/RES/66/100).

[45] See e.g. Eur. Ct. H.R. (2nd sect.), *Al-Dulimi and Montana Management Inc.* v. *Switzerland*, 26 November 2013 (Appl. No. 5809/08) (this judgment has been referred to the Grand Chamber).

This is by no means easy to achieve beyond the State, however. To date, first of all, there is no international political community and not even a regional political community besides States (except for the EU that actually bears human rights duties, as a result). This corresponds to a well-known limitation in international politics : the individual stakes are not (yet) sufficiently equal and interdependent at the global level for one to claim there could be an international political community.[46] Moreover, the circumstances of political equality, which imply being in a certain relationship to one another, i.e. sharing a social context,[47] are not yet given at the international level. Secondly, most international institutions do not have the required overall and effective normative control over their individual subjects, if they have any, to exercize jurisdiction.

Of course, States bear human rights duties with respect to the actions or omissions of international institutions under the circumstances discussed before. Moreover, international institutions other than those of jurisdiction also bear their own responsibilities for human rights like all other subjects of international law, as we will see now.

B. The Identification of Bearers of Responsibilities for Human Rights

Unlike the bearers of human rights duties, the bearers of the responsibilities for human rights are usually indeterminate. These responsibilities are diffusely vested on the "international community" at large.[48] The difficulty is that that community is not (yet) institutionalized : it consists of various individuals, States and international institutions, some regional and some global but never, in the latter case, in an inclusive fashion.

As individuals, first of all, we all bear a shared responsibility for the respect of human rights as primary constituency of the international community. Importantly, and for reasons of equality, that responsibility is collective and we bear it together, as a result. Practically, of course, there are coordination limitations to what individuals can do collectively at the global level. This is why, in the absence of institutionalization of the international community, other, and especially institutional, subjects of international law than individuals are more likely to act upon their responsibilities for human rights.

Secondly, then, the States other than the human rights duty-bearing States of jurisdiction may be seen as direct instruments of global justice through which we institutionalize our shared individual responsibilities for human rights.[49]

[46] See S. Besson, "Human Rights and Democracy in a Global Context : Decoupling and Recoupling", *Ethics & Global Politics*, vol. 4, n° 1, 2011, p. 19.
[47] See D. Miller, *National Responsibility and Global Justice*, Oxford, Oxford University Press, 2007, p. 56 ff.
[48] See Beitz, *The Idea of Human Rights*, *op. cit.*, p. 108.
[49] See Miller, "The Responsibility to Protect Human Rights", *op. cit.*, p. 241.

Again, States cannot do much on their own without institutional coordination at the global level. This explains why, finally, international institutions are often regarded as bearers of our responsibilities for human rights to the extent that they provide an institutional framework for State cooperation albeit one that is not yet global and inclusive.[50]

C. The Allocation of Human Rights Duties and Responsibilities for Human Rights

The allocation of human rights duties (1.) should be distinguished from that of responsibilities for human rights (2.).

1. *The Allocation of Human Rights Duties*

The allocation of human rights duties to specific duty-bearers raises questions of fairness and also needs to be justified. The primary allocation of the aggregate burden of human rights duties to the State or institution of jurisdiction ought to be justified in itself.

Just as the burden of duties allocated to them is an aggregate of individual duties, the grounds for the allocation to the institutions may also be deemed as an aggregate of various justifications.[51] By contrast, the subsequent re-allocation of human rights duties to specific organs of the State or institution of jurisdiction and/or the attribution of derived (criminal or private law) duties to individuals have to be justified separately. In the assessment of the justification of an assignment of human rights duties to specific duty-bearers, the reasonableness of the overall burden and of the cost also needs to be taken into account besides the grounds for assigning the duties.

In view of the moral complexity of the allocation of human rights duties and of the priorities to be set between them, the quality of the institutional process is essential to the justification of the allocation. Democratic institutions offer a procedural framework in which human rights duties can be deliberated over and allocated in an inclusive and egalitarian fashion. Further, the need to allocate human rights duties in context explains why the domestic institutions of jurisdiction are best positioned to do so. Of course, international human rights institutions may and should assist institutions of jurisdiction, i.e. States and the EU, in the subsidiary allocation of the specific duties to specific institutional bodies and to individuals. This only takes place *ex post*, however, and in the context of concrete cases pertaining to the remedial responsibilities for a violation of specific human rights duties.

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[50] See Shue, *Basic Rights*, *op. cit.*, p. 178.
[51] See C. Beitz and R. Goodin, "Introduction", in C. Beitz and R. Goodin (eds), *Global Basic Rights*, Oxford, Oxford University Press, 2009, p. 1, at p. 17.

2. *The Allocation of Responsibilities for Human Rights*

The allocation of responsibilities for human rights to their bearers is very difficult. This has to do, first, with the many concurrent grounds for allocating those responsibilities (e.g. outcome, causality, harm, capacity, benefit or special ties),[52] and, secondly, with the lack of universal international institutional framework or procedure for the allocation of responsibilities for human rights on all grounds and to all their bearers in a feasible and fair fashion.

As a result, the allocation of international responsibilities for human rights remains a matter of judgment for each potential responsibility-bearer in each case. Potential responsibility-bearers have to resort to individual and strategic or pragmatic thinking in the absence of assurance about others' actions.[53] One cannot exclude therefore that no one will act in the end.[54] This has also been referred to as the protection gap between human rights duties and responsibilities for human rights.[55]

IV. The Bearers of Duties and Responsibilities for the Human Right to Science

Two specificities of the supply-side of the right to science need to be discussed in more detail : first, the collective duties of States and international institutions of jurisdiction, and their co-specification and co-allocation (A.) and, second, the corresponding collective responsibilities for cooperation and assistance of other States and international institutions, and their coordination (B.).

A. The Collective Duties of States and Institutions of Jurisdiction

Duties corresponding to the right to science arise within the context of each State or international institution of jurisdiction and are owed to right-holders situated under that State or institutions' jurisdiction. Importantly, however, those duties are also collective duties, i.e. duties States and international institutions of jurisdiction bear together.

The justification for their collective dimension resides, first of all, in the universal or global scope of the public or collective good[56] (science) the individual interest in

[52] See D. Miller, "Distributing Responsibilities", *Journal of Political Philosophy*, vol. 9, n° 4, 2001, p. 453, at p. 464 ff. ; Miller, *National Responsibility and Global Justice*, *op. cit.*, p. 98 ff.
[53] See Shue, *Basic Rights*, *op. cit.*, at pp. 160-161.
[54] See Beitz and Goodin, "Introduction", *op. cit.*, at pp. 22-23.
[55] See Miller, "The Responsibility to Protect Human Rights", *op. cit.*, at p. 246 ; Miller, *National Responsibility and Global Justice*, *op. cit.*, p. 274.
[56] Goods are understood here as potential objects of interest that are of value, and public goods as goods that are non-exclusionary and non-rival in consumption, whether in a contingent or inherent fashion. See D. Newman, *Community and Collective Rights*, Oxford, Hart, 2011, at p. 66-76.

which is protected by the right to science[57] (the access to the benefits of science). It also derives, secondly and by extension, from the universal or global scope of the standard threats to that interest. It is both that good's global scope and the need to protect it effectively at once on a global scale, and not only its nature of public or collective good itself, that account for the common bearing of the corresponding duties by every State or international institution of jurisdiction. This is not only a condition of the feasibility of the protection of the interest against its global threats, but also of the overall fairness of the burden on each of the duty-bearing States or international institutions of jurisdiction. Given that "ought implies can", indeed, the feasibility and fairness of the burden affect the existence and the scope of the supply-side of the right to science.

Importantly, this does not mean that the right to science itself is held collectively as a group (e.g. by the "international community") or has to be exercized collectively, whether at the domestic or at the global level.[58] The interest protected by the right to science is individual, even if it pertains to a public or collective good.[59] Nor, secondly, should those collective duties be conflated with shared or joint human rights duties arising from cases of joint jurisdiction (e.g. territorial for one State and extra-territorial for the other).[60] They may, of course, be shared duties, but most of them arise separately and concurrently for all States or international institutions of jurisdiction. What distinguishes them is that while they may also be fulfilled separately and concurrently at least partly by each duty-bearing State or institution of jurisdiction, they cannot be effectively fulfilled without coordination between them. Thirdly, those collective duties relative to the right to science should not be conflated with responsibilities for human rights of other States and institutions than those of jurisdiction, i.e. responsibilities to cooperate and assist States and institutions of jurisdiction in complying with their duties related to the right to science. Unlike the latter, they are owed to the respective right-holders and do not have assistance and cooperation as their content but merely as a means of realization. Finally, this does not turn them into duties of a collective subject, i.e. of the "international community" itself, for, as I explained before, the latter is not (yet) sufficiently institutionalized to become a subject of human rights duties.

[57] To that extent, the right to science differs from other human rights that do not protect an interest in a collective or public good, like the right to life. Of course, there are other human rights that protect interests in a collective or public good. As there are important differences between public goods (e.g. participatory or not; global or not), those differences are reflected in the corresponding human rights. The fact that some features of the supply-side of human right to science are shared by a few other human rights to the end-product of global and participatory public goods does not affect my argument in this article, however.

[58] Contra: Chapman, "Towards an Understanding", *op. cit.*, p. 30.

[59] This corresponds to a fourth type of so-called "collective rights": those whose protected good is collective or public, but not the protected interest (it is an individual interest in the end-product of a participatory public good, i.e. science itself) (i), the exercize (ii), the holders (iii). See, more generally, D. Réaume, "Individuals, Groups, and Rights to Public Goods", *University of Toronto Law Journal*, vol. 38, n° 1, 1988, p. 1, at p. 8-9.

[60] See e.g. Besson, "International Institutions' Responsibilities for Human Rights", *op. cit.*

There are two implications of the collective nature of the right to science's duties: first, the co-specification of the corresponding duties by their respective bearers (1.); and second, the co-allocation of those duties by those bearers (2.).

1. *The Co-Specification of the Collective Duties of States and Institutions of Jurisdiction*

The primary implication of the collective nature of the duties corresponding to the right to science for its States or international institutions of jurisdiction is that the specification of the duties by its various bearers should be coordinated.

Generally, the specification of human rights duties, i.e. the identification of their content, takes place in one context at a time, and hence at a specific time and place. As to the types of human rights duties, following Henry Shue's seminal three-tier model, one usually distinguishes between negative duties to avoid depriving (respect), positive duties to protect from depriving (protect) and positive duties to aid the deprived (fulfill).[61] All those duties can arise concurrently if need be, even though they are subsidiary to one another. The reason for this is that one needs to be able to spread the burden across time and agents, or else each duty could potentially amount to an unfeasible and/or unreasonable burden on any given agent.[62]

In the context of the duties arising from the right to science, this co-specification of human rights duties is particularly relevant as, without the coordination of all duties, the burden of each duty may be too heavy to bear for each duty-bearer not only domestically, but also across jurisdictions. This is due in part to the combination of private and public interventions in the field of science within one single State or institution of jurisdiction, but also across those States or institutions. Thus, the burden of duties to fulfill[63] on a given State of jurisdiction in the context of drugs whose commercialization is entirely private and occurs through a foreign corporation may be regarded as not only unfair, but largely unfeasible unless its content, but also its articulation with other types of duties are coordinated with that of the corresponding duties of another State of jurisdiction to other holders of the same right abroad, such as the duties of the home State of the corporation.

[61] See Shue, *Basic Rights*, *op. cit.*, at pp. 52-53, 60.
[62] See Shue, *Basic Rights*, *op. cit.*, at pp. 59, 61, 173.
[63] Note that, curiously, the Venice Statement 2009, *op. cit.*, lists the duties corresponding to the equal access to the benefits of science exclusively under "duties to fulfill", as if the other duties to respect and protect generated by the right to science only pertained to the other two interests protected by the right to science (i.e. opportunities for all to contribute to the scientific enterprise and protection from adverse effects of science) (16). This cannot be the case and denotes a stronger emphasis on the rights of scientists than of others (redundant with some of their rights under Articles 15(1)(c) and 15(3) ICESCR anyway), on the one hand, and a paternalistic approach to the rights of others in the context of science, on the other. See also Müller, "Remarks on the Venice Statement", *op. cit.*, at pp. 769-770.

2. *The Co-Allocation of the Collective Duties of States and Institutions of Jurisdiction*

The next implication of the collective nature of the duties corresponding to the right to science for its States or international institutions of jurisdiction is that their allocation among the respective duty-bearers and their further re-allocation within each of them should be coordinated.

It is the case, first of all, of the primary co-allocation of duties between the various States or institutions of jurisdiction. Those States or institutions' respective duties may arise separately and concurrently out of each relationship of jurisdiction with the right-holder of the right to science. They will, however, need to be re-allocated anew among those duty-bearers to allow for coordination of the burden that would otherwise not only be unfair, but to a great extent unfeasible for each of them. It suffices to think of a case of domestic or regional epidemic, like Ebola, and of the burden on the relevant States of jurisdiction whose duty to protect the right to science implies acquiring drugs and treatment too expensive for each and any of them on its own. Secondly, without coordination in the secondary re-allocation to further duty-bearers under domestic law within each State or institution of jurisdiction, whether they are private or public, the burden of each duty may be too heavy to bear within each State or institution of jurisdiction. For instance, in the context of drugs whose commercialization is entirely private and occurs through a foreign corporation, the burden of duties to fulfill in case of failure of the private sector bearing on a given State of jurisdiction may be regarded as not only unfair, but largely unfeasible unless it is coordinated with that of the corresponding duties to fulfill of the corporation's home State of jurisdiction to the corresponding holders of the same right at home.

Of course, in the absence of joint or shared jurisdiction over the same right-holders,[64] it is difficult to come up with shared grounds for the primary co-allocation and the secondary re-allocation of duties relative to the right to science. The collective duties at stake are grounded in the respective jurisdiction of the duty-bearing State or institution, and hence in the aggregate ground of each and every human rights duty discussed before. The primary co-allocation and secondary re-allocation require a meta-ground, therefore, or, at least, a shared procedure.

There is one principle at play in the context of the current specification of the object of the right to science, and that is equality. Thus, the access to the benefits of science is submitted to a requirement of equality or non-discrimination that is not restricted to the boundaries of each State or institution of jurisdiction.[65]

[64] On those cases, see Besson, "L'extra-territorialité des droits de l'homme internationaux: juridictions concurrentes, obligations conjointes et responsabilités partagées", *op. cit.*

[65] See e.g. the discussion in Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, at pp. 9-11, that equates domestic and international measures to promote equality in the access to the benefits of science without distinguishing between them (compare e.g. §§ 26-33 to 34-38). See also Venice Statement 2009, *op. cit.*, §§ 3 and 4, referring to "inequalities among and within States" and to technological disparities between "societies".

It is this very principle I submit that should inform the kind of procedures of primary and secondary co- and re-allocation that are put in place, but also, as far as possible, the allocation of the overall burden of duties relative to the right to science at any given time and place. This raises difficult questions of global equality that are only starting to be discussed, for they raise issues that are very different from the ones that arise within the boundaries of each political community at a time.[66]

The co-allocation of duties relative to the right to science cannot be done by each duty-bearing State or institution of jurisdiction alone and implies creating one or many international institutions to coordinate allocation, therefore.[67] It should not come as a surprise in this context that institution-building with other States or institutions of jurisdiction is part of the duties to fulfill that correspond to the right to science.[68] It is arguably even the overarching duty to fulfill that right.[69] This duty is mentioned by the 2009 UNESCO Venice Statement as the duty "to establish institutions to promote the development and diffusion of science and technology" (16(a)). This leads in effect to the co-allocation of duties with respect to securing access to the benefits of science.

One of the hardest questions relative to the supply-side of the right to science actually pertains to the institutional design of the procedures of co-allocation of the collective duties argued for. Of course, inspiration for those institutions may be drawn from existing international negotiated systems of burden-sharing.[70] Such systems have been set up to enable States of jurisdiction to abide indirectly by human rights duties that have the same global scale as the right to science's. Of course, those systems have not been devised directly in the context of the fulfilment of human rights duties by their States or international institutions of jurisdiction, but the financial construction and the burden-sharing system may both be transposed effectively into the proposed institutional setting.

Procedurally, the co-allocation institution would have to work along egalitarian lines, and be sufficiently participative. Of course, one of the major challenges is democratic legitimacy. This is particularly important given the close ties between human rights and democracy in general, and more particularly in case of conflict between domestic allocations of human rights duties and resources that are democratic, on the one hand, and international re-allocations, on the other. Democratic

[66] See e.g. A. Buchanan, "The Egalitarianism of Human Rights", *Ethics*, vol. 120, n° 4, 2010, p. 679; S. Besson, "The Egalitarian Dimension of Human Rights", *Archiv für Rechts- und Sozialphilosophie Beiheft*, vol. 136, 2013, p. 19.

[67] Importantly, those coordinating institutions are not human rights duty-bearers in themselves and merely enable the duty-bearers to fulfill their collective duties. Think of the Council of Europe or the United Nations, for instance. Of course, coordinating institutions may incur responsibilities for human rights, but unless they exercize jurisdiction over a given right-holder, they will not bear human rights duties.

[68] See e.g. UN Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind, *op. cit.*, §§ 1 and 5; Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, at pp. 66 and 68.

[69] See also Müller, "Remarks on the Venice Statement", *op. cit.*, p. 779.

[70] One may mention, for instance, the system put in place by the Kyoto Protocol to the United Nations Framework on Climate Change or by the Global Fund to Fight Aids, Tuberculosis and Malaria.

legitimacy is not a new concern for international human rights institutions, of course. However, given how closely State resources have been tied to technology and scientific development in practice,[71] but also how democracy is sometimes at odds with innovation over which it may have a chilling effect,[72] the question of the relationship between the international allocation of duties and responsibilities relative to the right to science and its democratic legitimacy is likely to be even more controversial.[73] As a matter of fact, public participation is a concern one regularly finds expressed in current discussions of the right to science.[74] Of course, in line with the Limburg Principle 11, the focus is usually on domestic institutional settings rather than the international institutional level. However, if my argument about non-discriminatory access being global is correct, the same should apply by extension to public participation. This leaves the formidable challenge of devising what equal public participation could mean in an international institution intact, but this discussion will have to await another paper.

Finally, the institutional co-allocation of duties may require financial compensation, especially when domestic public funds have been invested in the scientific endeavour whose benefits are at stake. Setting up a fund to do so may be necessary, therefore. Funding should be public. It could be levied through taxes on the use of technologies, for instance. This source of funding may be associated to intellectual property funds and their private-public work and hybrid funding, along the lines proposed by Thomas Pogge and his Health Impact Fund (HIF)[75] or Allen Buchanan and his Global Innovation Justice Institute (GIJI).[76]

B. The Collective Responsibilities to Cooperate and Assist of Other States and International Institutions

Other States and international institutions than those of jurisdiction bear responsibilities for human rights, and this also applies to the right to science. The specificity of the responsibilities for the right to science, however, is that they are collective. Due to the universal or global scope of science, they are owed together for any one of them to be effectively fulfilled. Moreover, their complementarity to the duties relative to the right to science of the respective States or international institutions of jurisdiction, that are themselves collective, is even greater than for other responsibilities for human rights. They should therefore be coordinated both among themselves, on the one hand, and with the right to science-duties of the respective States or institutions of jurisdiction, on the other.

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[71] See J. Madrick, "Innovation: The Government was Crucial After All", *New York Review of Books* (24 April 2014).
[72] See Kitcher, *Science, Truth and Democracy*, *op. cit.*, on science and democracy.
[73] Thanks to Allen Buchanan for raising this issue in discussion.
[74] See e.g. Venice Statement 2009, *op. cit.*, Article 16(e); Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, at pp. 22 and 43.
[75] See Pogge, "The Health Impact Fund", *op. cit.*
[76] See Buchanan, Cole, and Keohane, "Justice in the Diffusion of Innovation", *op. cit.*

This specificity of the responsibilities for the right to science of other States and institutions of jurisdiction may explain the specific mention of the importance of international cooperation under Article 15(4) ICESCR. It echoes the reference to "international assistance and cooperation" of Article 2(1) ICESCR (see also Articles 22-23 ICESCR).[77] Those provisions do not refer to duties relative to the right to science bearing only on their duty-bearing States *stricto sensu*,[78] but to "supporting"[79] responsibilities for the right to science bearing on all States parties to the ICESCR at once.[80] They are not owed to the right-holders of the right to science who have no right to them, and, more generally, are not directed responsibilities. Finally, their content differs from that of the right to science-relative duties. Those responsibilities amount, in the context of the right to science, to "direct, financial and material, aid, as well as to the development of international collaborative models of research and development for the benefit of developing countries and their populations".[81] They are captured by the 2009 Venice Statement as the responsibilities "to take measures to encourage and strengthen international cooperation and assistance in science and technology to the benefit of all people" (16(d)). This is often coined as the sharing of benefits and the transfer of scientific knowledge and technologies.[82]

The primary implication of the collective nature of the responsibilities for the right to science is that the allocation of the responsibilities by its various bearers should be coordinated. Due to the specific nature of science, responsibilities for the right to science are owed together for any of them to be effectively fulfilled. As a result, "cooperation and assistance" around the right to science are not only about bilateral aid, but amount also to a responsibility for multilateral coordination and institution-building.[83] This procedural or institutional responsibility for the coordinated allocation of responsibilities of international assistance and cooperation is actually identified in the 2011 Maastricht Principles, under Principle 30: "States should coordinate with each other, including in the allocation of responsibilities, in order to cooperate effectively in the universal fulfilment of economic, social and cultural rights".[84]

Of course, just as the co-allocation of duties relative to the right to science requires a meta-ground, the coordinated allocation of responsibilities for the right to science calls for some ordering of the grounds of those responsibilities. As I argued before, the various grounds or justifications for preventive or remedial

[77] See also Chapman, "Towards an Understanding", *op. cit.*, p. 29.
[78] See P. Alston and G. Quinn, "The Nature and Scope of States Parties' Obligations under the International Covenant on Economic, Social and Cultural Rights", *Human Rights Quarterly*, vol. 9, n° 2, 1987, p. 156, at p. 186-192.
[79] See OHCHR, Guiding Principles on Extreme Poverty and Human Rights, *op. cit.*, Principles VI, §§ 93-94.
[80] See also Müller, "Remarks on the Venice Statement", *op. cit.*, at pp. 781-782, for a similar distinction (albeit between "national" and "international" "obligations" stemming from REBPSA).
[81] See e.g. Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, p. 68.
[82] See e.g. UN Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind, *op. cit.*, §§ 1 and 5; Report of the Special Rapporteur on the right to enjoy the benefits of scientific progress and its applications, *op. cit.*, at pp. 66 and 68.
[83] See also De Schutter *et al.*, "Commentary to the Maastricht Principles", *op. cit.*, at pp. 1149-1150.
[84] See Maastricht Principles, *op. cit.*

international responsibilities for human rights range from outcome to causality, harm, capacity, benefit or special ties.[85] To coordinate the allocation of responsibilities for the right to science, one may argue that "technological capacity",[86] by reference to the "technical assistance" emphasized in Article 2(1) ICESCR, should be the prior ground or, at least, the meta-ground of responsibility. The institutional and framework for that allocation, however, still remains largely inexistent and even more difficult to establish than for the co-allocation of the collective duties relative to the right to science.

V. Conclusions

In line with what applies to other international human rights and in particular other economic, social and cultural rights, States and international institutions of jurisdiction are the sole bearers of the duties corresponding to the right to science. This applies territorially, but also extra-territorially when States or international institutions exercize jurisdiction outside their domestic borders. Other actors, whether private actors, other States or international institutions, also bear responsibilities for that right concurrently to the duties of States and institutions of jurisdiction. Unlike human rights duties, those responsibilities are not directed to the right-holder and are not owed to them, and they also have a different content. Of course, under certain circumstances, States and international institutions of jurisdiction may bear duties relative to the right to science not only for the conduct of their own agents, but also for the conduct of private actors and even for the conduct of other States and international institutions.

Importantly, the duties and responsibilities relative to the right to science present two specificities. First of all, by virtue of the interest protected by the right to science, i.e. the equal access to the benefits of science and hence an individual interest in a universal public good, and of the universal scope of the threats to that interest, the duties relative to the right to science should be approached as collective duties States and/or international institutions of jurisdiction bear together, and not only concurrently like other human rights duties. This has important institutional consequences for their co-allocation among States and institutions of jurisdiction, and not only within each of them. Secondly, this also has an impact on the other private actors', States' and international institutions' responsibilities for the right to science, since those responsibilities are borne together as well and should, as a result, be coordinated in their primary allocation.

In turn, these collective features of the supply-side of the right to science call for stronger institutionalization of the co-specification and co-allocation of the

[85] See also De Schutter *et al.*, "Commentary to the Maastricht Principles", *op. cit.*, at pp. 1149-1150, 1153.
[86] See also De Schutter *et al.*, "Commentary to the Maastricht Principles", *op. cit.*, at p. 1153.

corresponding duties and responsibilities than it is the case for other human rights. Abiding by a new type of human rights' duties means devising new institutions. If the human right to science and hence to innovation is to be protected effectively, we should be ready to innovate institutionally.[87] We should not let the "unbounded" nature of science be too quickly defeated by the "bounded" nature of human rights. While human rights duties are "bounded" – and, for reasons of equality and democracy, they should remain so –, some universal or global public goods, and the equal individual interests in those goods we have recognized and should now protect as human rights, require us to "unbound" their corresponding duties and responsibilities.

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[87] See Buchanan, Cole, and Keohane, "Justice in the Diffusion of Innovation", *op. cit.*, p. 306.