

# In Focus: Relaunch of the ZaöRV/HJIL as an Open Access Journal

## Opening Access, Closing the Knowledge Gap? Analysing GC No. 25 on the Right to Science and Its Implications for the Global Science System in the Digital Age

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### Abstract

The Corona pandemic as never before shows the advantages of Open Science and Open Access (OA), understood as the unrestricted access to research data, software and publications over the internet. It might accelerate the long-predicted “access revolution” in the academic publishing system towards a system in which scientific publications are freely available for readers over the internet. This paradigm shift, for which the “flipping” of this journal is but one of many examples, is underway, with major research funding organisations at the national and international levels massively sup-

porting it. The call for OA has now also been taken up by the Committee on Economic, Social and Cultural Rights, which in its recent General Comment (GC) No. 25 explicitly asks states to promote OA. Following the line of argument of the OA movement, the Committee finds that OA is beneficial to democracy, scientific progress and furthermore a tool to bridge the “knowledge gap”. The aim of this paper is to critically examine the GC and its implications for the global science system in the digital age. It argues that the great merit of the GC lies in highlighting that “benefitting” from science includes access to science as such and not only to its material outcomes. This underscores the independent meaning of the right to science which so far was primarily seen as an enabler for other social rights. However, when it comes to OA, the GC has problematic flaws. It simply assumes that OA is beneficial to the right to science, overlooking that the OA model which is likely to become the global standard risks to benefit the already privileged, namely researchers and publishers of wealthy institutions in the Global North, further sidelining those at the margins. Rather than narrowing existing gaps, it risks to further deepen them. In order to remain meaningful in the face of the fundamental criticism it faces, human rights law needs to address systemic issues and inequalities – in the science system and beyond.

## Keywords

right to science – Open Access – Committee on Economic, Social and Cultural Rights – knowledge divide – epistemic justice – human rights criticism

## I. Introduction

Open Access and Open Science are the call of the day. The Corona pandemic in unprecedented ways highlights the value of global collaboration in science and wide, unrestricted access to research findings over the internet, the core claims of the Open Science and Open Access movements. The health crisis might therefore not only be a catalyst for digitalisation processes more generally; it might be the decisive push for the long-predicted “access revolution”<sup>1</sup> and complete the paradigm shift in academic publishing, from a system based on scientific publications “hidden” behind pay-walls to one in which

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<sup>1</sup> Peter Suber, *Open Access* (Cambridge, Massachusetts/London, England: The MIT Press 2012), 2. See on the “revival” of the potential of the internet Marie Rosenkranz, ‘How COVID-19 is Activating the Digital Society’, Digital Society Blog, 25 March 2020, <<https://www.hiig.de>>.

scientific content is freely available over the internet. This paradigm shift is underway, with the “flipping” of this journal, the Heidelberg Journal of International Law, from “closed” to Open Access being just one of many examples. Even though the development is slower than the OA movement had hoped for, and this is particularly true in legal scholarship and social sciences, where OA plays a much smaller role than in natural sciences,<sup>2</sup> in recent years it increasingly gained momentum. Major and influential funding organisations at the national and international levels alike adopted OA policies. The European Commission, for example, requires that research funded under its Horizon2020 funding scheme must be published OA,<sup>3</sup> and the signatories of Plan S, the so-called cOAlition S, consisting of an important number of (European) national research funding organisations, agreed to make publicly funded research OA by 2021.<sup>4</sup> Similar to the global turn to “E-law”, or the free provision of legislation over the internet since the end of the 90s,<sup>5</sup> we might currently be witnessing a turn to openness in publicly funded science.

After the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Special Rapporteur in the field of cultural rights,<sup>6</sup> the call for Open Science and OA has now also been taken up by the Committee on Economic, Social and Cultural Rights (CESCR or the Committee). In its recent General Comment No. 25 on the right to enjoy the benefits of scientific progress, the so-called “right to science” under Art. 15 (1)(b) of the International Covenant on Economic, Social and Cultural Rights (ICESCR),<sup>7</sup> it explicitly asks states to promote OA and Open Science more broadly.<sup>8</sup> The Committee takes up important arguments of the OA movement: It endorses the idea that openness is beneficial to scientific progress and highlights the importance of citizen participation in science (“citizen science”).<sup>9</sup> More clearly than previous documents, the CESCR highlights that

<sup>2</sup> This is particularly true for the German speaking area. The Directory of Open Access Journals (DOAJ) lists only a handful of openly accessible German-language law journals. See <<https://www.doaj.org>>.

<sup>3</sup> See Art. 29(2) of the Model Grant Agreement, available at <<https://ec.europa.eu>>.

<sup>4</sup> See <<https://www.coalition-s.org>>.

<sup>5</sup> Yaniv Roznai and Nadiv Mordechai, *Access to Justice 2.0: Access to Legislation and Beyond, The Theory and Practice of Legislation* 3 (2015), 333-369 (339 ff.)

<sup>6</sup> See in more detail below section III. 1. a).

<sup>7</sup> International Covenant on Economic, Social and Cultural Rights of 16 December 1966.

<sup>8</sup> Economic and Social Council, Committee on Economic, Social and Cultural Rights, General Comment No. 25 (2020) on science and economic, social and cultural rights (Article 15 (1)(b), (2), (3) and (4) of the ICESCR), 30 April 2020, E/C.12/GC/25, at paras 16, 49 and 62; see already the Recommendations of the Special Rapporteur in the field of cultural rights, Farida Shaheed, in her report “The Right to Enjoy the Benefits of Scientific Progress and its Applications”, 14 May 2012, A/HRC/20/26, at paras 74 c) and d).

<sup>9</sup> See e.g. GC (n. 8), para. 10.

the “benefits” of science do not only encompass the concrete material outcomes of research, such as medicine or food crops, but also access to scientific knowledge as such. In this sense, “science provides benefits through the development and dissemination of knowledge itself”.<sup>10</sup> More than once, and probably inspired by recent debates about “fake news” and disinformation, the Committee highlights the importance of scientific knowledge for broad parts of society and its role “in forming critical and responsible citizens who are able to participate fully in a democratic society”.<sup>11</sup> Finally, the Committee highlights the global character of science and the importance of international cooperation for a fair system of knowledge production.<sup>12</sup>

This approach, which shifts the focus from the material results of scientific research to the scientific endeavour as such and the development and diffusion of knowledge, has the potential to “awake” the right to science, which so far at best has been considered a “sleeping beauty”.<sup>13</sup> Even though the right also has a place in Art. 27 of the Universal Declaration of Human Rights<sup>14</sup> and many regional documents<sup>15</sup> and in the drafting negotiations there was broad consensus that it should be included in the ICESCR,<sup>16</sup> it so far played an only marginal role in practice,<sup>17</sup> to an extent that the autono-

<sup>10</sup> Cf. GC (n. 8), para. 78-79.

<sup>11</sup> GC (n. 8), para. 8.

<sup>12</sup> GC (n. 8), paras 77-84.

<sup>13</sup> Eibe Riedel, ‘Sleeping Beauty or Let Sleeping Dogs Lie? The Right of Everyone to Enjoy the Benefits of Scientific Progress and Its Applications (REBSPA)’ in: Holger Hestermeyer, Doris König, Peter-Tobias Stoll, Volker Röben, Silja Vöneky, Anja Seibert-Fohr and Nele Matz-Lück(eds), *Coexistence, Cooperation and Solidarity. Liber Amicorum Rüdiger Wolfrum* (Leiden: Brill / Nijhoff 2011), 503-519.

<sup>14</sup> Art. 27 of the Universal Declaration of Human Rights of 10 December 1948 reads: “(1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits. (2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.”

<sup>15</sup> See Art. 38 of the Charter of the Organization of American States; Art. 14 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights; Art. 42 of the Arab Charter on Human Rights; Art. II (2) of the Charter of the African Union; Art. 13 of the European Charter of Fundamental Rights (academic freedom) and Art. 2 of the Convention on Human Rights and Biomedicine of the Council of Europe. On the drafting history of the right to science see William A. Schabas, ‘Study of the Right to Enjoy the Benefits of Scientific and Technological Progress and Its Applications’ in: Yvonne Donders and Vladimir Volodin (eds), *Human Rights in Education, Science and Culture. Legal Developments and Challenges* (Farnham: Ashgate 2007).

<sup>16</sup> Schabas (n. 15), 275-276.

<sup>17</sup> Schabas speaks of the “neglected and obscure position” of the right. Schabas (n. 15), 273; Audrey R. Chapman, ‘Towards an Understanding of the Right to Enjoy the Benefits of Scientific Progress and Its Applications’, *Journal of Human Rights* 8 (2009), 1-36 (1); Amrei Müller, ‘Remarks on the Venice Statement on the Right to Enjoy the Benefits of Scientific Progress and its Applications (Article 15(1)(b) ICESCR)’, *HRLR* 10 (2010), 765-784 (765-766).

mous existence of the right was questioned.<sup>18</sup> One of the reasons for this neglect is that the right so far was mainly seen as an enabler for other economic and social rights such as the right to food or health.<sup>19</sup> Despite its non-binding legal nature, the GC thus offers important clarifications of the right which might make it more relevant in practice in the future.<sup>20</sup>

The aim of this paper is to doctrinally analyse and critically examine how the Committee links the question of OA to the right to science. The focus will be on OA rather than on Open Science more broadly. While the Committee uses both terms, its focus is on access to the outcomes of scientific research, which is the main concern of the OA movement. It will be argued that the added value of the GC, and indeed the independent meaning of the right to science, lies exactly in further elaborating on the “infrastructural” dimension of the right with its focus on the development and diffusion of knowledge. The global perspective the Committee takes, stressing the international dimensions of science and the global nature of the science system, offers the missing piece to the protection at the domestic level and is timely in the face of the Corona pandemic and the climate crisis. However, the GC has some important flaws, which is problematic in light of the fact that it is supposed to offer states guidance as how to implement the right. In particular, the Committee has a very one-sided perspective on OA and fails to address its darker sides. The paper therefore recollects the different routes to deliver OA and shows that they have very different human rights repercussions. In particular, the OA model that has the potential to become the global standard risks to further deepen existing gaps rather than to bridge them. The paper concludes that the fact that this OA model is the most successful one is symptomatic of the broader and systemic problems in the science system, and it is a missed opportunity that the Committee did not address this.

The paper will proceed as follows. In a first step, it will briefly trace back the genesis of the modern OA movement and give an overview of the key

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<sup>18</sup> Mikel Mancisidor, ‘Is There Such a Thing as a Human Right to Science in International Law?’, *ESIL Reflections* 4 (2015), 1-6.

<sup>19</sup> See for example Oliver De Schutter, ‘The Right of Everyone to Enjoy the Benefits of Scientific Progress and the Right to Food: From Conflict to Complementarity’, *HRQ* 33 (2011), 304-350; Yvonne Donders, ‘The Right to Enjoy the Benefits of Scientific Progress: In Search of State Obligations in Relation to Health’, *Medicine Health Care and Philosophy* 14 (2011), 371-381.

<sup>20</sup> The legal basis for the CESCR’s GCs is Economic and Social Council Resolution 1987/5 on the International Covenant on Economic, Social and Cultural Rights, UN Doc. E/RES/1987/5 of 26 May 1987; see on this e.g. Philip Alston, ‘The Committee on Economic, Social and Cultural Rights’ in Frédéric Mégret and Philip Alston (eds), *The United Nations and Human Rights. A Critical Appraisal* (Oxford: Oxford University Press 2020), 439 ff.

concepts and questions currently discussed (II.). The main part of the paper then examines and discusses the Committee's approach towards OA, showing that it has important flaws (III.). The last section concludes with some broader reflections on the human rights approach to the science system (IV.).

## II. Mapping the OA Landscape

### 1. The Revolutionary Potential of the Internet as Starting Point of the Modern OA Movement

Before analysing the Committee's position towards OA, it is important to take a closer look at some key concepts in the OA discourse. Even though the core idea of OA is simple, namely to use the communicative potential of the internet for the purpose of the diffusion of science, the reality today is much more complex, with a plethora of OA models existing and many actors involved in OA, which has long become a business on its own. Besides the question of access, the *affordability* and the *reusability* of scientific publications also play important roles in the debate, and the questions are often conflated. What complicates the situation even more is that the term OA today is normatively extremely loaded and used with goals no less ambitious than to transform the whole academic publishing system. Finally, OA is a part of the broader concept of Open Science, which lacks a clear definition but is generally understood as encompassing open practices during all stages of research (and not only to published research outcomes).<sup>21</sup>

The modern OA concept was born with the advent of the internet. In the early years of the internet, it was believed that this new technology would bring about some fundamental changes in science communication. As is well-known, the publication of research is an important, even defining part of science, which is an inherently collective endeavour. Only published research can be tested and refuted or built on. The internet now promised to make the dissemination of research around the globe much easier and accessible as never before and therefore also more democratic. Especially in the first years of the new millennium, the internet was believed to be immensely beneficial for scientific progress.<sup>22</sup>

<sup>21</sup> See Ruben Vicente-Saez and Clara Martinez-Fuentes, 'Open Science now: A systematic Literature Review for an Integrated Definition', *Journal of Business Research* 88 (2018), 428-436.

<sup>22</sup> See for an example of this early enthusiasm the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities of 22 October 2003, available at <<https://open-access.mpg.de>>.

Closely connected to, but technically speaking not identical with the question of access via the internet is the question of the *reusability* of published research, and therefore the restrictions posed by intellectual property (IP) rights. For the reusability of research as well the internet and especially digital publishing offers new possibilities. The use of IP rights in science has been accompanied with a critical debate since its very beginning and due to their much increased use over the last years they are increasingly considered to be an obstacle to knowledge production.<sup>23</sup> The classic OA definitions as contained in the 2002 Budapest Open Access Initiative,<sup>24</sup> the 2003 Bethesda Statement<sup>25</sup> and the already mentioned Berlin Declaration<sup>26</sup> all combine the questions of access and of reusability:

“By ‘open access’ to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.”<sup>27</sup>

Soon, the internet was not only seen as an opportunity to reduce technical and legal barriers to access scientific publications, but also to make publishing more affordable due to the lower publication costs of digital publishing. At the time when the internet became relevant, the so-called “serials crisis”<sup>28</sup> was in full swing – the subscription costs for many “serially” published scholarly journals for decades had increased significantly faster than the

<sup>23</sup> James Boyle, ‘The Second Enclosure Movement and the Construction of the Public Domain’, *Law and Contemp. Probs.* 66 (2003), 33–74. See in more length James Boyle, *Shamans, Software, and Spleens: Law and the Construction of the Information Society* (Cambridge MA: Harvard University Press 1996); Jerome H. Reichman and Ruth L. Okediji, ‘When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale’, *Minn. L. Rev.* 96 (2012), 1362–1480. See on this development from a human rights perspective Lea Shaver, ‘The Right to Science and Culture’, *Wisconsin Law Review* (2010), 121–184.

<sup>24</sup> Budapest Open Access Initiative (BOI) of 14 February 2002, available at <<https://www.budapestopenaccessinitiative.org>>.

<sup>25</sup> Bethesda Statement on Open Access Publishing of 20 June 2003, available at <<https://dash.harvard.edu>>.

<sup>26</sup> See n. 22.

<sup>27</sup> See n. 22.

<sup>28</sup> See Judith M. Panitch and Sarah Michalak, ‘The Serials Crisis. A White Paper for the UNC-Chapel Hill Scholarly Communications Convocation’, January 2005, available at <<https://ils.unc.edu>>.

Consumer Price Index – and the budgets of libraries and universities. As a consequence, many public libraries even in Western countries could not afford the subscription fees anymore.<sup>29</sup> The consequences are felt even worse in institutions of the so-called Global South. While for example the University of Harvard in 2008 subscribed to 98'900 serial journals, for the best-funded research institute in India it was only 10'600, and several sub-Saharan African university libraries only manage to offer access to donated journals.<sup>30</sup> However, despite the lower publication costs, rather than to go down, prices in the global publishing industry kept on rising. Some players in the commercial publishing industry, instead of losing ground with the advent of the internet and the diminished importance of print publications, managed well to adapt to the new digital environment by using technical barriers such as pay-walls. Today, with win-margins between 20-30 %, experts speak of a market concentration in the global publishing industry and an oligopolistic position of a handful powerful players, such as Elsevier and Springer.<sup>31</sup> This is considered to be particularly problematic for publicly funded research paid with tax-payers' money and has among other things led a quickly growing group of scholars to call for a boycott of the publisher Elsevier.<sup>32</sup> With digital publishing making the discrepancy between actual costs and profits even more visible,<sup>33</sup> the fight against the high prices became an important theme in the OA discourse.

## 2. Gold, Green and Diamond – the OA Colour Theory

Against this backdrop, different OA models our “routes” have evolved over the years, and they all have different ambitions regarding the three questions of accessibility, reusability and affordability. What they have in common is that they all focus on access to *articles* – even though with the internet new publication formats such as blogs, wikis and in recent times

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<sup>29</sup> A study commissioned by the European Commission found that between 1975 and 1995, the prices of scientific journals in Europe increased 200-300 % beyond inflation. See Mathias Dewatripont et al., ‘Study on the Economic and Technical Evolution of the Scientific Publication Markets in Europe’, final report of January 2006, available at <<https://ec.europa.eu>>.

<sup>30</sup> Suber (n. 1), 30-32.

<sup>31</sup> Vincent Larivière, Stefanie Haustein and Philippe Mongeon, ‘The Oligopoly of Academic Publishers in the Digital Era’, PLoS ONE 10 (2015).

<sup>32</sup> See the statement of purpose of the initiative “The Cost of Knowledge” at <<http://thecostofknowledge.com>>.

<sup>33</sup> See Richard Van Noorden, ‘Open Access: The True Cost of Science Publishing. Cheap Open Access Journals Raise Questions About the Value Publishers add for Their Money’, Nature 495 (2013), 426-429 (427).



videos and podcasts, to name just a few, have emerged, the traditional journal format until today remains the central cornerstone in the academic publishing system. So far somewhat left out in the debate is the question of access to monographs.

Originally, mainly two models to deliver OA can be distinguished, namely the so-called green and the gold model.<sup>34</sup> While within these models a certain range of varieties exists, the main characteristic of gold OA is that it is delivered by journals and means immediate access to the original article from the moment of the publication on. Green OA, on the other hand, refers to the practice of self-archiving of a digital copy in a (personal or institutional) repository, typically after the expiration of a legal embargo period.<sup>35</sup> Here, access is not immediate and usually not to the original article. Within the gold model, there exists a further distinction between “libre” and “gratis” OA. Only the first one, libre OA, also removes permission barriers, while gratis OA only refers to access barriers.<sup>36</sup> In recent years, a sub-category of gold OA evolved, the so-called diamond or platinum model, which will be explained in further detail below. Another more recent keyword in the OA vocabulary is *hybrid* OA, which designates journals that publish both OA and pay-walled articles.

Over the years, OA became a business model of its own. Again, the publishing industry was successful in adapting to the new circumstances and undertook an “economic re-interpretation of OA”.<sup>37</sup> Today, gold OA is mainly understood as the business model of commercial publishers in which the publication costs are borne by the author (instead of the readers) via so-called “Article Processing Charges” (APCs).

This development led to new criticism. A first point concerns the fact that authors are the ones bearing the costs for publishing, which can have an exclusive effect, given that not all authors can afford the costs.<sup>38</sup> Funders and institutions have reacted to this criticism, and in Germany, for example, the costs today are usually covered in an unbureaucratic way by authors’ institu-

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<sup>34</sup> These terms are said to have been coined by Stevan Harnad. See Stevan Harnad, Tim Brody, Francois Vallieres, Less Carr, Steve Hitchcock, Yves Gingras, Charles Oppenheim, Heinrich Stamerjohanns and Eberhard Hilf, ‘The Green and the Gold Roads to Open Access. Nature Web Focus of 14th September 2004’, available at <<https://eprints.soton.ac.uk>>.

<sup>35</sup> See in more detail Suber (n. 1), 49-75.

<sup>36</sup> Suber (n. 1), 65-75.

<sup>37</sup> Niels Taubert and Peter Weingart, ‘Changes in Scientific Publishing: A Heuristic for Analysis’ in: Niels Taubert and Peter Weingart (eds), *The Future of Scholarly Publishing. Open Access and the Economics of Digitisation* (Cape Town: African Minds 2017), 1-33 (16).

<sup>38</sup> Toby Green, ‘Is Open Access Affordable? Why Current Models do not Work and Why we Need Internet-era Transformation of Scholarly Communications’, *Learned Publishing* 32 (2019), 13-25.

tions via centralised funds. However, authors with no affiliation to a research institution and authors from less wealthy institutions that do not have agreements with publishers in place are still affected by the exclusionary effect. This is even more the case since the cost-problem that gave rise to the “serials crisis” has shifted from unaffordable prices for subscriptions to unaffordable prices for APCs. Studies find a hyperinflation in APCs and conclude that market competition and authors’ choice are not suitable means to control the high prices because the demand for journal publications is similar to the demand for prestige goods.<sup>39</sup> Critics even argue that by supporting the gold model, research funders and institutions further strengthen the oligopoly of a few powerful publishers.<sup>40</sup> According to some, a consequence of this powerful position is that commercial publishers heavily influence the direction of research.<sup>41</sup>

Against this backdrop, voices asking for a more fundamental transformation of the science publishing system have become more numerous over the last years. A sub-group in the OA movement for example asks for “Fair Open Access”, demanding to “return the control of the publication process to the scholarly community”.<sup>42</sup> From these discourses, the so-called “platin” or “diamond” OA model has emerged. Journals under this model offer immediate OA without charging authors. They are often run on a non-commercial basis and sustained by scholars themselves. However, their success is limited, since the gold/APC model has a “systemic” advantage. The value the academic evaluation system puts in publishing in renowned publication outlets drives scientists seeking to advance their careers to publish in the already established “mainstream” journals. Studies indeed show that globally, the majority of articles published OA are published in APC-funded journals.<sup>43</sup> The process is further driven by large-scale initiatives such as cOAlition S or the German “Projekt DEAL”, under the heading of which a consortium consisting of all German research institutions currently negotiate “transformative OA agreements” with the largest commercial publishers of academic journals.<sup>44</sup> The aim of these initiatives is no less than to transform

<sup>39</sup> Shaun Yon-Seng Khoo, Article Processing Charge Hyperinflation and Price Insensitivity: An Open Access Sequel to the Serials Crisis, *Liber Quarterly* 29 (2019), 1-18.

<sup>40</sup> See in the context of the German “Projekt DEAL” Thomas Thiel, Die HRK verkauft die Wissenschaft, *Frankfurter Allgemeine Zeitung* (FAZ) of 20 November 2019, <<https://www.faz.net>>.

<sup>41</sup> Taubert and Weingart (n. 37), 1.

<sup>42</sup> <<https://www.fairopenaccess.org>>.

<sup>43</sup> Walt Crawford, *GOAJ3: Gold Open Access Journals 2012-2017* (Livermore, California: Cites & Insights Books 2018).

<sup>44</sup> See <[www.projekt-deal.de](http://www.projekt-deal.de)>. Similar initiatives also exist in other countries; see <<https://esac-initiative.org>>.

the whole academic publishing system. Critics argue that given the global ambitions of these large-scale OA initiatives, they should have undertaken consultations and considered regional differences. By way of example, in comparison to the global average, in Latin America OA is much more widespread.<sup>45</sup> Some voices even argue that decades-old OA efforts in Latin America are at risk of being undermined by initiatives such as Plan S.<sup>46</sup>

### III. The Right to Science and OA

As already mentioned, the CESCR now took up the OA vocabulary and asks states to promote OA. The aim of this section is, first, to take a closer look at the GC and how the Committee links the question of OA to the right to science, which illustrates well some of the innovative features of the GC (1.). The second section will turn to the more problematic aspects of the GC and shows how these might end up having the opposite effects from the ones intended by the Committee (2.)

#### 1. The Committee's Link Between the Right to Science and OA

The GC is innovative in at least two ways. First of all, it highlights the value of access to science as such and shifts the focus from the question of individual access rights to state duties to ensure the conditions that allow a functioning science system. Furthermore, the Committee underlines the global nature of the science system. This brings to attention two specific obligations of states in implementing the right to science. As will be discussed in the following, the Committee deems both of them to be directly relevant for the question of OA: the duty of states to preserve, develop and diffuse science (a) and the duty to encourage international cooperation in science (b).

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<sup>45</sup> See e. g. Dominique Babini and Juan D. Machin-Mastromatteo, 'Latin American Science is Meant to be Open Access: Initiatives and Current Challenges', *Information Development* 31 (2015), 477-481.

<sup>46</sup> Eduardo Aguado López and Arianna Becerril García, 'Latin America's Longstanding Open Access Ecosystem Could be Undermined by Proposals from the Global North', *LSE Latin America and Caribbean blog*, 6 November 2019, <<https://blogs.lse.ac.uk>>; for a rejoinder see Johan Rooryck, 'The Plan S Open Access Initiative Creates more Opportunities than Threats for Latin America', *LSE Latin America and Caribbean blog*, 3 December 2019, <<https://blogs.lse.ac.uk>>.

### a) OA as Part of the Duty to Conserve, Develop and Diffuse Science (Art. 15(2) ICESCR)

In its GC No. 25 on the right to science, the CESCR explicitly takes up the OA vocabulary. Already prior to that, some states in their periodic reports have made the link between OA and the right to science. For example, Denmark reported in 2018:

“The Danish Ministry of Higher Education and Science is working to provide Open Access to scientific publications in order for the public to profit from publicly financed research. To this end, Denmark’s National Strategy for Open Access was announced by the Danish Minister of Higher Education and Science in 2014. The Strategy aims to create free access for all citizens, researchers and companies to all research articles from Danish research institutions financed by public authorities and/or private foundations. The Danish Ministry of Higher Education and Science also initiated the Danish Open Access Indicator, which monitors how the Danish universities fulfil the targets of the National Strategy for Open Access”.<sup>47</sup>

Also the Special Rapporteur in the field of cultural rights, Farida Shaheed, in her 2012 report already recommended that “States [...] promote open access to scientific knowledge and information on the Internet”,<sup>48</sup> and UNESCO as part of its recommendations on science suggests that member states “ensure equitable and open access to scientific literature, data and contents including by removing barriers to publishing, sharing and archiving of scientific outputs”.<sup>49</sup> In its long-awaited GC, now also the CESCR states that “[r]esearch findings and research data funded by States should be accessible to the public”.<sup>50</sup> According to the Committee, the right to science in principle requires that the results of publicly funded research should become freely available over the internet. It asks states to “make every effort to ensure equitable and open access to scientific literature”.<sup>51</sup> However, the Committee does not go as far as the Special Rapporteur, who had explicitly recommended mandatory open access policies.<sup>52</sup> The Committee, by contrast, only

<sup>47</sup> Sixth periodic report submitted by Denmark under Articles 16 and 17 of the Covenant, due in 2018, para. 227, available at <<https://digitallibrary.un.org>>.

<sup>48</sup> Report Special Rapporteur (n. 8), para. 74 c).

<sup>49</sup> UNESCO, Recommendations on Science and Scientific Research of 13 November 2017, adopted at the 39th General Conference, Records of the Conference Vol. I Resolutions, Annex II, No. 13(e).

<sup>50</sup> GC (n. 8), para. 16.

<sup>51</sup> GC (n. 8), para. 49.

<sup>52</sup> Report Special Rapporteur (n. 8), para. 74 d): “Universities, research and funding institutions adopt mandatory open-access policies for journals and repositories of research(;)”.

asks states to “*promote* open science and open source publication of research”.<sup>53</sup>

Doctrinally, the CESCR construes the obligation to promote OA as part of states’ duty to fulfil the Convention rights, which requires states to take positive steps to meet their convention obligations. According to the Committee, “[t]he obligation to fulfil is particularly important in creating and guaranteeing access to the benefits of the applications of scientific progress”.<sup>54</sup> The fact that this dimension plays a particular role in the context of the right to science is reflected in Art. 15(2) ICESCR, which provides that states must take steps for the conservation, the development and the diffusion of science and which therefore contains a “reinforced and specified” duty to fulfil.<sup>55</sup> The Committee now clarifies that this obligation requires “approving policies and regulations that foster scientific research, allocating appropriate resources in budgets and generally creating an enabling and participatory environment for the conservation, the development and the diffusion of science and technology”.<sup>56</sup>

While the Special Rapporteur rather phrased the question of OA as an access right of individual researchers,<sup>57</sup> the Committee thus relies on the more “objective” dimension of the right to science as spelled out in Art. 15 (2) ICESCR. Understudied at the international level, this dimension is well-known to some domestic systems. For example, in Germany it is construed as complementary aspect of the subjective dimension of academic freedom under Art. 5(3) of the Basic Law. The idea is that in order to maintain individual academic freedom, states need to ensure an overall functioning science system, which includes providing (material) conditions, such as funding and institutions.<sup>58</sup>

The Committee’s considerations on the duty to fulfil according to Art. 15 (2), even though not being nearly as extensive and elaborate as the jurisprudence in domestic contexts, point to a similar direction. In order to make the right to science “available”, it considers that certain “infrastructural” measures are necessary, including “a strong research infrastructure with adequate resources”. Furthermore, it lists libraries, museums and “Internet networks” as tools for the diffusion of science, and asks states for “adequate financ-

<sup>53</sup> Report Special Rapporteur (n. 8), para. 16 (emphasis added).

<sup>54</sup> GC (n. 8), para. 47.

<sup>55</sup> GC (n. 8), para. 46.

<sup>56</sup> GC (n. 8), para. 46.

<sup>57</sup> Report Special Rapporteur (n. 8), paras 26 ff., linking access to science to the right to information and the right to education.

<sup>58</sup> Ex plurimis Klaus F. Gärditz, ‘Art. 5 Abs. 3 Wissenschaftsfreiheit’ in: Theodor Maunz et al. (eds), *Grundgesetz-Kommentar* (München: C. H. Beck 92. Aufl. 2020), paras 194 ff.

ing”.<sup>59</sup> The rationale is, for one thing, that the Committee considers “citizen science”, i.e. access and participation by citizens to be important (“the duty of states to disseminate science and to foster citizen participation cannot be underestimated”).<sup>60</sup> In the eyes of the CESC, in the information age “[b]asic knowledge of science, its methods and results, has become an essential element for being an empowered citizen and for the exercise of other rights, such as access to decent work”.<sup>61</sup> Secondly, infrastructural measures are necessary in order to “actively promote the advancement of science”.<sup>62</sup> In other words, to create an environment where research can take place by *inter alia* building or supporting institutions and providing adequate funding is a precondition for scientific progress.

Both these shifts away from the concrete outcomes of research to the process of science and the focus on the infrastructure and environment that enable science are innovative and might make the right to science more relevant in practice in the future. The fact that the Committee insists on the importance of the accessibility of science to broad parts of society does justice to the wording of the Covenant, which explicitly speaks of the right of “everyone” – and not just scientists – to enjoy the benefits of science. This interpretation therefore opens up a space of application for the right to science independent of other rights such as the right to food and the right to health. The clarification of the measures required to fulfil the right to science will offer states guidance and facilitate the dialogue with the Committee. From this perspective, the GC certainly offers added value in comparison to previous attempts to clarify the right.

## b) OA as a Facilitator of International Cooperation (Art. 15(4) ICESCR)

Another noteworthy aspect of the GC is that the Committee highlights the borderless nature of science. According to the Committee, states need to “promote an enabling *global* environment for the advancement of science and the enjoyment of the benefits of its applications”.<sup>63</sup> This reflects the universal character of the scientific endeavour, which has been called “the most international of all activities”.<sup>64</sup> Scientific research is not confined to national borders; it rather benefits from participation as broad as possible.

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<sup>59</sup> GC (n. 8), para. 16.

<sup>60</sup> GC (n. 8), para. 49.

<sup>61</sup> GC (n. 8), para. 49.

<sup>62</sup> GC (n. 8), para. 46.

<sup>63</sup> GC (n. 8), para. 77, emphasis added.

<sup>64</sup> Chapman (n. 17), 27.

The drafters of the ICESCR paid tribute to this defining feature of science by including what the Committee calls a “reinforced” duty to cooperate internationally.<sup>65</sup> While Art. 2 of the Covenant stipulates a general duty of international cooperation and assistance,<sup>66</sup> Art. 15(4) ICESCR states that “States Parties to the present Covenant recognize the benefits to be derived from the encouragement and development of international contacts and co-operation in the scientific and cultural fields”.

The explanations of the Committee show that it sees international cooperation primarily as instrumental to scientific progress. In the words of the Committee, “international cooperation among scientists should be encouraged in order to foster scientific progress”.<sup>67</sup> The Committee highlights that states should take steps to enable researchers to participate in the “international scientific and technological community”,<sup>68</sup> and one way to achieve this is via policies that enable practices of “free sharing” of resources.<sup>69</sup> One of the core arguments of the OA movement is that making research outcomes openly available is a driver for scientific progress,<sup>70</sup> and the GC seems to follow this line of argument. In this context, the Committee makes the only (indirect) reference to the Corona pandemic and highlights the advantages of sharing knowledge globally in order to speed up the process of finding a vaccine.<sup>71</sup> It furthermore mentions other crises such as the climate crisis and biodiversity loss that require global scientific efforts.

However, besides the instrumental argument for OA as a facilitator for international cooperation and scientific progress, the Committee makes another case for OA. Throughout the GC, it becomes clear that the Committee recognises the huge economic stakes behind access to knowledge and its repercussions for the global allocation of wealth. By way of example, the Committee deems important that “[a]ll States should contribute [...] to this

<sup>65</sup> GC (n. 8), para. 77. See on the drafting history of Art. 15 Schabas (n. 15).

<sup>66</sup> See on this Magdalena Sepúlveda Carmona, “The Obligations of “International Assistance and Cooperation” Under the International Covenant on Economic, Social and Cultural Rights. A Possible Entry Point to a Human Rights Based Approach to Millennium Development Goal 8”, *The International Journal of Human Rights* 13 (2009), 86-109.

<sup>67</sup> GC (n. 8), para. 78.

<sup>68</sup> GC (n. 8), para. 78.

<sup>69</sup> The wording is not entirely clear; OA is not explicitly mentioned. The GC speaks of policies enabling “[...] scientific researchers to freely share data and educational resources internationally, for example, by means of virtual universities[.]” (para. 78).

<sup>70</sup> See e.g. European University Association (EUA), “Towards Full Open Access in 2020. Aims and Recommendations for University Leaders and National Rectors’ Conferences”, Report of June 2017, at 1: “A more efficient use of public research funds and swifter scientific progress could be achieved by opening access (OA) to research outcomes.” (Available at <<https://eua.eu>>).

<sup>71</sup> GC (n. 8), para. 82.

common task of developing science” and continues that “[r]ecommending that poor States focus exclusively on applied science actually increases the gap and unfair distribution of knowledge and power between States”.<sup>72</sup> The Committee furthermore refers to the “deep international disparities among countries in science and technology”.<sup>73</sup> One consequence it draws from this is that it deduces from Art. 15(4) ICESCR a duty to regulate access to research results and their applications “in a form that allows developing countries and their citizens adequate access to these products in an affordable manner”.<sup>74</sup> Even though in this context it also refers to concrete applications of science, the fact that it also means access to knowledge as such becomes clear in that it states that “the excessive price of some scientific publications is an obstacle for low-income researchers, especially in developing countries”.<sup>75</sup> In other words, making research openly accessible can be seen as a form of benefit sharing and OA as a tool to narrow the global knowledge gap and contribution to global justice between citizens and states.

The recognition of the global nature of the science system and the unfair allocation of scientific knowledge in the global science system is another important feature of the GC. However, as will be discussed in the next section, the Committee’s approach ultimately is not enough to contribute to more equality in the science system.

## 2. The Blind Spots in the GC

As seen in the last section, the GC addresses important challenges in relation to science and makes some important clarifications which might make the right more relevant in practice. However, as will be shown in this section, the GC also leaves blind spots. Without closer scrutiny the Committee assumes that OA is beneficial to the right to science. The aim of this section is to show how the different OA models have very different repercussions in terms of human rights and that the model about to become the global standard risks to deepen existing inequalities in the global science system (a). It will be argued that the consequence from this cannot be to correct the course of this development by imposing one model, but rather to pay closer attention to the dynamics that give rise to this development (b).

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<sup>72</sup> GC (n. 8), para. 48.

<sup>73</sup> GC (n. 8), para. 79.

<sup>74</sup> GC (n. 8), para. 79.

<sup>75</sup> GC (n. 8), para. 61.



## a) The Dark Sides of OA

While there are many “prophets of openness”<sup>76</sup> in the debate around OA, criticism also comes from many sides. At the most fundamental level, the basic dichotomies that underlie the OA discourse are being put into question. “If science is opened now, then how was it being closed before, by whom or by what?”<sup>77</sup> It is argued that the “closedness” caused by the deep enmeshment of the oppressive societal structures in science as pointed out by for instance feminist or postcolonial thinkers<sup>78</sup> has not been fundamentally questioned by the OA movement.<sup>79</sup> Others argue that OA “can become a tool of neocolonialism if it only gives students and academics better access to science from the North”.<sup>80</sup>

While this criticism does not put into question that more openness in science in the sense of OA can be beneficial in at least some ways, it makes clear that OA is no panacea for all the problems in the global science system. In particular, having access to knowledge alone is not enough – participation in the knowledge production is equally important. Predominantly exposed to this type of criticism is the gold OA model. While it grants access and therefore serves the “consumption” side, at the same time it has exclusionary effects on the “production” side due to the often very high publication costs for authors. The consequences are particularly felt by researchers from less well-endowed institutions, and voices from other regions already criticise the push for the gold/APC model which they consider to be mainly in the interest of European institutions and researchers.<sup>81</sup>

This exclusionary effect is relevant from a human rights point of view: the Committee makes clear that the cross-cutting obligation to eliminate discrimination in the enjoyment of economic, social and cultural rights also applies to the right to science.<sup>82</sup> It highlights that “special attention should be paid to groups that have experienced systematic discrimination in the enjoyment of

<sup>76</sup> Philip Mirowski, ‘The Future(s) of Open Science’, *Social Studies of Science* 48 (2018), 172, 193.

<sup>77</sup> Jutta Haider, ‘Openness as Tool for Acceleration and Measurement: Reflections on Problem Representations Underpinning Open Access and Open Science’ in: Joachim Schöpfel and Ulrich Herb (eds), *Open Divide: Critical Studies on Open Access* (Sacramento, California: Library Juice Press 2018), 17–28.

<sup>78</sup> Sandra Harding, *Science and Social Inequality: Feminist and Postcolonial Issues* (Urbana/Chicago: University of Illinois Press 2006).

<sup>79</sup> Jutta Haider, ‘Of the Rich and the Poor and Other Curious Minds: On Open Access and “Development”’, *Aslib Proceedings: New Information Perspectives* 59 (2007), 449–461.

<sup>80</sup> Florence Piron, ‘Postcolonial Open Access’ in: Joachim Schöpfel and Ulrich Herb (eds), *Open Divide: Critical Studies on Open Access* (Sacramento: Litwin Books 2018).

<sup>81</sup> See section II. 2.

<sup>82</sup> GC (no. 8), para. 25.

the right”<sup>83</sup> and names women and economically disadvantaged persons among other systematically underrepresented groups.<sup>84</sup> In relations to the issue of economic inequality and access to science, the Committee considers that “States must make every effort to break this vicious circle between substantive inequality and unequal access to the right to participate in and enjoy the benefits of scientific progress and its applications”.<sup>85</sup> This mainly requires states to ensure that their science laws and policies have no discriminatory effects in their domestic settings. However, in light of the international obligations of states under the Covenant the obligation not to discriminate arguably is also relevant in an extraterritorial setting, i. e. vis-à-vis citizens of other states. In our context here, this should at least mean to consider the effects of policies outside a state’s own territory and to choose among different options the one with the least exclusionary effects.

Another line of criticism concerns what is often used as an argument for OA publishing, namely that OA increases the visibility of research and citation rates. This advantage can of course become problematic if it works in a way that it only increases the opportunities of some – the already privileged – and not others, which, as just seen, is an important criticism against the gold model. But in the eyes of critics, the downside furthermore is that this drives neo-liberal performance absolutism in science and that the increasing use of metrics supports the trend of corporate ownership in science and “platform capitalism”.<sup>86</sup> The performance-increasing aspect concerns all OA models, but – as will be discussed in more detail below – also goes beyond questions of publication methods.<sup>87</sup> In the eyes of the author it should not be used as an argument to discard OA altogether. The second point again mainly exposes the gold model. While both green and diamond OA are run by numerous not-for-profit or public actors, therefore enhancing the “bibliodiversity”, the reality of gold OA today is that it is the new business model of a handful powerful private publishers.<sup>88</sup>

OA therefore clearly also has darker sides with direct human rights repercussions, and this is more the case for some OA models than for others. This puts into question the Committee’s approach which considers OA *per se* to be beneficial to the right to science. One could argue that this is mitigated by the fact that the Committee only formulates a “soft” duty to promote OA. It did therefore not follow the model of the Special Rapporteur, which recom-

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<sup>83</sup> GC (n. 8), para. 28.

<sup>84</sup> GC (n. 8), paras 29-40.

<sup>85</sup> GC (n. 8), para. 37.

<sup>86</sup> Mirowski (n. 76), 171-203.

<sup>87</sup> See below section III. 2. c).

<sup>88</sup> See above section II. 2.

mended mandatory OA policies.<sup>89</sup> This softer approach leaves room for states to decide for themselves which OA models they support. However, clearer guidance would have been preferable, particularly in light of the ongoing national and transnational initiatives massively pushing for OA that in the eyes of critics go in the wrong direction. The indiscriminate endorsement of the Committee of all OA models therefore risks to give the human rights blessing to developments for good reasons deemed problematic by many. By implicitly endorsing the gold model, the GC might even end up contributing to deepening existing gaps and perpetuating inequalities in the global science system – wrongs that it set out to reduce.

## b) Stemming the Tide by Imposing OA Policies?

This raises the question whether the Committee should have been more specific as to how states are to promote OA or, put differently, about which OA models it deems preferable from the viewpoint of the right to science. Given that the problematic gold model is already about to become the standard OA model, the question even arises whether the Committee should have asked states to adopt mandatory green or diamond. However, good reasons suggest that such policies would currently not be in the interest of the science system and therefore violate the academic freedom of individual researchers.

Let's first have a look at the green model. A case on the tensions between OA and individual academic freedom, albeit concerning domestic constitutional guarantees, is currently pending before the German Constitutional Court: When the University of Konstanz adopted a regulation holding that its researchers, after the expiration of the legal embargo period of 12 months, under certain circumstances were obliged to publish their research in the university's repository,<sup>90</sup> a number of members of the law faculty attacked the rule before the competent local court, arguing that it violates their freedom to decide about the publication modalities as one aspect of their academic freedom.<sup>91</sup>

<sup>89</sup> See above, n. 52.

<sup>90</sup> See Satzung zur Ausübung des wissenschaftlichen Zweitveröffentlichungsrechts gemäß § 38 Abs. 4 UrhG of 10 December 2015, available at <<https://www.uni-konstanz.de>>.

<sup>91</sup> The administrative court (Verwaltungsgerichtshof) Baden-Württemberg decided on 26 September 2017 to suspend the proceeding and ask the Constitutional court for a preliminary ruling. See VGH Baden-Württemberg, Decision of 26 September 2017, 9 S 2056/16. The question before the Constitutional Court now, however, relates to the powers to adopt said regulation rather than to academic freedom.

Given that policies concerning the publication modalities constitute an infringement of the academic freedom of individual researchers, they need to be justified. In this case, this could be done with reference to the interest in an overall functioning science system as protected under the “objective” dimension of academic freedom.<sup>92</sup> In the particular case concerning the University of Konstanz, the infringement of the individual academics’ rights seems quite small. The policy only concerns the so-called “secondary” publication in a repository (green OA) and does not touch upon the original decision where to publish. Nonetheless, it is not entirely clear whether the infringement is justifiable relying on the interest in an overall functioning science system. At least in case of policies that foresee an embargo period between the initial publication and the openly accessible publication in an archive, there are reasons that put this into doubt. Of course, having access after the embargo period is better than nothing; however, and to use the Corona pandemic as an example, in fields where research advances very fast an embargo of a year like in the German example does considerably hamper progress in research. This means that in these cases, green OA is only of little value. For this very reason many OA proponents and among them many scientists consider that immediate OA is the preferable solution. The answer might be different for green policies without an embargo period or for disciplines that are less dependent on immediate access, like social sciences and legal studies. In this sense, in the case currently pending before the German Constitutional Court, good reasons can be brought forward to justify the infringement of the law professor’s academic freedom. But to argue that green policies are always in the interest of the science system would not withstand closer scrutiny.

These considerations therefore support mandatory policies requiring immediate OA publication of research findings. Given that gold OA is no solution, this leaves us with the diamond model. In this case, the infringement of academic freedom would be greater because it concerns publication modalities of the initial publication.<sup>93</sup> In addition, property rights of commercial publishers might come into play. Given the widespread criticism that the current publication system and the too powerful position of private publishers distort the search for truth and therefore hamper scientific progress,<sup>94</sup> one could argue that possible rights infringements are nonetheless necessary in order to uphold a functioning science system. This solution would therefore at

<sup>92</sup> See also Nikolas Eisentraut, ‘Die Digitalisierung von Forschung und Lehre – auf dem Weg in eine “öffentliche” Rechtswissenschaft?’, *Ordnung der Wissenschaft* 3 (2020), 177-190 (186).

<sup>93</sup> Similarly Eisentraut (n. 92), 187.

<sup>94</sup> See for example Taubert and Weingart (n. 37), 1.

the same time speed up scientific progress and help to cut back the distortive effect of commercial publishers on the science system deplored by many.<sup>95</sup>

However, many studies show that researchers' preferences lie elsewhere. They prefer to publish their work in the renowned journals published by commercial publishers and therefore in reality tend to choose the gold model which many consider to be more beneficial in terms of career advancement.<sup>96</sup> It is therefore at least questionable whether imposing the diamond model at the moment would be in the interest of the science system.

This suggests that ultimately, none of the existing OA models provides for the publication model in the digital age able to accommodate all rights and interests involved – those of scientists, citizens, publishers, and the interest in an overall functioning science system. This makes clear once more that OA is no panacea for all the problems in the global science system and shows that the criticism that the concept “prompts the suspicion of snake oil”<sup>97</sup> is not entirely unfounded. No OA model will be successful unless the scientific community accepts it, and in this sense the Committee was right in not singling out a single model that is preferable over the others.

### c) Deeper Underlying Issues in the Global Science System

The scholarly community is well aware of this conundrum and the fact that, while many scholars deplore the current situation in the publishing system, they are at the same time the ones maintaining it. Proponents of OA therefore regularly state that a “change of culture” is needed in academia in order to solve the access problem. One passage of the GC resonates this need of “change of culture”:

“[...] open science cannot be achieved by the State alone. It is a common endeavour to which all other stakeholders should contribute, nationally and internationally, including scientists, universities, publishers, scientific associations, funding agencies, libraries, the media and non-governmental institutions. All these stakeholders play a decisive role in the dissemination of knowledge, especially when it comes to outcomes of research financed with public funds.”<sup>98</sup>

The Committee stops short, however, of examining the root causes of the current culture and leaves the main responsibility to bring about the necessary changes with the involved scientists and other stakeholders. This is

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<sup>95</sup> See above, section II. 2.

<sup>96</sup> See above, section II. 2.

<sup>97</sup> Mirowski (n. 76), 173.

<sup>98</sup> GC (n. 8), para. 49.

regrettable, because at closer look it becomes quickly clear that the direction in which the publishing system currently develops is part of a much deeper-lying systemic issue in the science system. In this sense, the debate around OA is symptomatic of the broader issues in the science system that are described as increasing commercialisation and competition in science along the lines of “publish or perish”.<sup>99</sup>

It would be wrong to assume that this development is simply a natural feature of science, and that it is in the hands of scientists alone to change the dynamics. It is rather very much driven by reforms of the higher education system with the aim to make universities more competitive and in this sense is closely connected to the way the science system is organised and regulated today. In other words, this development does not take place in the absence of the state – rather, it is very much the result of the state being “actively intervening in order to reshape the landscape of higher education”.<sup>100</sup> An obvious example is the United Kingdom where the higher education system has been remodelled along neoliberal criteria.<sup>101</sup> But it is also visible in states which rely on public funding of the higher education system. By way of example, the salary system for professors in Germany since some years in parts is based on performance, such as the number of articles published in renowned journals per year.<sup>102</sup>

Studies show that not only this development has a negative impact on the health of scholars;<sup>103</sup> it furthermore directly influences science itself. One example is that the pressure to publish increases scientists’ bias – the fact that negative findings are deemed less “publishable” and “citable” than positive findings is mirrored in greater numbers of publication containing positive findings.<sup>104</sup> All of this has been shown to be to the detriment of women in

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<sup>99</sup> See above section II. 1.

<sup>100</sup> Ntina Tzouvala, ‘The Future of Feminist International Legal Scholarship in a Neoliberal University: Doing Law Differently?’ in: Susan Haris Rimmer and Kate Ogg (eds), *Research Handbook on Feminist Engagement with International Law* (Cheltenham: Edward Elgar 2019), 269–285 (274).

<sup>101</sup> Ben R. Martin, ‘The Research Excellence Framework and the “Impact Agenda”: Are We Creating a Frankenstein Monster?’, *Research Evaluation* 20 (2011), 247–254.

<sup>102</sup> Max-Emanuel Geis, ‘Eigengesetzlichkeit als Strukturprinzip der Wissenschaft. Einige kritische Begriffsreflexionen’, *Glanzlichter der Wissenschaft* (2015), 39–46 (40); see on the “competition of the university” in Germany more generally Max-Emanuel Geis, ‘Universitäten im Wettbewerb’, *Veröffentlichungen der Vereinigung der Deutschen Staatsrechtslehrer* 69 (2010).

<sup>103</sup> Melissa S. Andersonn, Emily A. Ronning, Raymond de Vries and Brian C. Martinson, ‘The Perverse Effects of Competition on Scientists’ Work and Relationships’, *Science and Engineering Ethics* 13 (2007), 437–461.

<sup>104</sup> Daniele Fanelli, ‘Do Pressures to Publish Increase Scientists’ Bias? An Empirical Support from US States Data’, *PLoS ONE* (2010), e10271.

science,<sup>105</sup> and similar arguments could be made for other marginalised groups.

It is a missed opportunity that Committee did not address these structural issues, in particular in light of the fact that it does ask states to create an “enabling environment” for science and addresses the issue of discrimination and the structural exclusion of women, persons with disabilities, and other minorities in science.<sup>106</sup> Even though it is certainly true that reducing inequalities is a “subject that goes beyond the scope of this general comment”,<sup>107</sup> the Committee could have addressed the dynamics behind the inequalities persisting in the science system. This is particularly true in times where human rights are criticised to be “not enough” to tackle structural problems in an unequal world.<sup>108</sup> According to the former United Nations Special Rapporteur on extreme poverty, Philipp Alston, addressing economic inequalities in and through human rights law becomes a matter of survival for human rights themselves.<sup>109</sup> What is sure in our context here is that simply calling upon the responsibility of scientists who in their situation of dependency have little room of manoeuvre will not help to change these dynamics. Rather, the structures themselves need to be changed and made more inclusive. This would also make the transition to a fair publishing system in the digital age easier.

## IV. Conclusion

The much-awaited GC No. 25, published in the midst of the Corona pandemic which in unprecedented ways illustrates the importance of science, contains some important clarifications of the right to science and is likely to make this right more relevant in the future. Taking up arguments of the OA movement, the Committee states that the right to science in principle requires that publicly funded research is published OA. It highlights the importance of access to knowledge as such, rather than only to the material outcomes of scientific research, and furthermore highlights the global nature of the science system.

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<sup>105</sup> Tzouvala (n. 100).

<sup>106</sup> GC (n. 8), paras 25 ff.; see already section III. 2. b) above.

<sup>107</sup> GC (n. 8), para. 37.

<sup>108</sup> Samuel Moyn, *Not Enough: Human Rights in an Unequal World* (Cambridge, Mass.: Belknap Press 2018).

<sup>109</sup> Human Rights Council, Report of the Special Rapporteur on extreme poverty and human rights of 22 March 2017, A/HRC/35/26, 1.

This article has argued that the added value of the GC, and indeed the independent meaning of the right to science, lies exactly in further elaborating on the “infrastructural” dimension of the right with its focus on the development and diffusion of knowledge. The global perspective the Committee takes, stressing the international dimensions of science and the global nature of the science system, offers the missing piece to the protection at the domestic level and is timely in the face of the Corona pandemic and the climate crisis.

However, the GC has problematic flaws. In particular, the Committee’s one-sided perspective on OA fails to address its darker sides. The paper recollected the different routes to deliver OA and showed that they have very different human rights repercussions. In particular, the OA model that is about to become the global standard risks to further deepen existing gaps rather than to bridge them and is being criticised from members of the science community in the Global South.

But this does not mean that the Committee should have more explicitly asked states to promote alternatives to gold OA, possibly even through mandatorily proscribing them. The paper showed that also the other models are not unconditionally in the interest of the science system, one reason being that scientists themselves, despite the fact that many members of the scholarly community deplore the current situation in the publication system, prefer to publish in the problematic gold model. Imposing OA models that are not in the interest of scientists will do little to solve the actual problem which lies deeper and is closely connected to the increasingly competitive and marketised science system. In this sense, the success of the gold model is symptomatic of the broader and systemic problems in the science system, and it is a missed opportunity that the Committee did not address these interlinked dynamics. In order to remain meaningful in the face of the fundamental criticism it faces, human rights law should address systemic issues and inequalities – in the science system and beyond.