Open Access and Global Inclusion:
A Look at Cuba

*Elizabeth Jardine, Maureen Garvey, and J. Silvia Cho**

> Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers. —Article 19 of the 1948 U.N. Declaration of Human Rights[1]

According to the open access (OA) movement's formal statements, global equity and inclusion are among its central concerns.[2] Still in question, however, is whether the scholarly community can make these goals a reality.[3] Though many stakeholders agree on the importance of equity and inclusion as philosophical principles of OA, there also is some disagreement about current approaches to achieve these goals.

This paper aims to summarize some of the current issues surrounding OA, focusing on global north-south differences. This discussion was inspired by our 2016 trip to Havana, Cuba, where we observed such differences first-hand. Even though the situation in Cuba is unique due to the US embargo, the contexts and circumstances we observed there were an extreme case that illustrated information needs and challenges in developing regions more broadly. Some of these challenges are relevant to scholarly communications and within the purview of the OA movement. With OA in the development stages, we're still in a period of opportunity where we can make choices for better outcomes for everyone.

We start this paper by presenting our observations about OA in Cuba. Then we discuss the larger context of OA in developing regions, including differing perspectives, technological challenges, and issues around scholarly communications. We end by summarizing our observations and recommendations for a more inclusive OA movement.

Our Visit to Cuba

During our week-long trip, ten librarians and archivists from institutions within the City University of New York system traveled to Havana and environs. There are probably as many perspectives as the number of people involved, but these represent the authors' own experiences and perceptions.

We visited several libraries and archives as well as museums and other cultural institutions, ranging in size, scope, focus, and resources. Despite this variety, a common thread among many of the librarians we met was the dedication, professional pride, and enthusiasm they showed for their work and mission.[4] At the University of Havana's Central Library, the National Health Sciences Information Center (CNICM), and the National Library, librarians spoke of the importance of making progress toward online accessibility to materials. All of

* *Elizabeth Jardine is Metadata Librarian at LaGuardia Community College, CUNY, ejardine@lagcc.cuny.edu; Maureen Garvey is Evening/Weekend Instruction Librarian, College of Staten Island, CUNY, maureen.garvey@csi.cuny.edu; J. Silvia Cho is Interlibrary Loan Supervisor, The Graduate Center, CUNY, jcho@gc.cuny.edu.*

these institutions, and Casa de las Américas, have made significant efforts to preserve and make their materials available digitally. Furthermore, the librarians at the University of Havana spoke to a great extent of their efforts to promote OA by facilitating access to open access databases like CLACSO (Consejo Latinoamericano de Ciencias Sociales), by building an institutional repository, *Scriptorium*, and by working with faculty and authors to promote open access. At the time of our visit in January 2016, that library had recently celebrated Open Access Week with a student contest ("Pregúntame sobre acceso abierto") as part of a grant obtained from the International Network for the Availability of Scientific Publications (INASP).[5] At the national level, Cuba has a national commission for the development of open access.[6]

It is not surprising that librarians we met expressed support for the open access movement. First, they felt the access barrier to scholarly journals abroad keenly, given the existing US economic embargo—which makes subscription to US-based commercial database packages very difficult, though not completely impossible. Although Cuban libraries are not as isolated by the blockade as the US policy might have aimed for, they do have to acquire material from the United States indirectly or through exchanges.[7] As a result, some librarians we met implied that open access publishing was a solution that would help circumvent this limitation and bring wider access to scholarly content to users in Cuba.

Secondly, some libraries we visited were often publishers on their own right, which enabled them to publish material open access. For example, the National Health Sciences Information Center is an OA publishing house for medical publications and provides information and technical support to Cuban doctors anywhere in the world. Its virtual health sciences library, Biblioteca Virtual de la Salud, offers full text content from both subscription and open access publications: digital books, journals, bulletins, catalogs, and databases.[8] Similarly, Casa de las Américas makes the most recent issues of its journals openly available in its website.[9]

Finally, some librarians spoke of digital libraries and repositories as a way to preserve and present national, local, or institutional patrimonies. Preserving patrimonies has long been recognized as one of the missions of libraries and archives, but the adoption of digital libraries and online repositories as key tools to achieve that mission perhaps suggests a readiness to embrace the changing role of libraries in a new information landscape. This is important because during our visit, closed stacks were the norm—and we were told that open stacks were still a relatively new concept in Cuba. The predominance of closed stacks, and the fact that catalogs are still largely available onsite only, means that librarians have a significant professional presence, visibly mediating discovery and access to materials. However, the ongoing efforts to digitize catalogs (though they can, at present, only be hosted in intranets due to limited server capacities), and initiatives to create digital libraries and online repositories, may make access to information more direct and transform the role of librarians in the process.

On the other hand, while we found great enthusiasm for open access at some institutions, progress or prioritization of open access projects across libraries was uneven. At some libraries, open access was not discussed as a priority. At others, librarians discussed practical difficulties preventing speedier implementation. For example, at the National Library, administrators spoke of lack of technology (servers in particular) and metadata expertise. Though they aim toward the creation of a national digital library, and have already begun with a Cuban newspapers project, it is still in beginning stages due to the cited difficulties.

Nor was the National Library alone in this. Repeatedly, we encountered librarians telling us that the major factor limiting them was a lack of technological resources: servers, bandwidth, wifi, equipment, devices. In 2015, the World Bank found one secure Internet server in Cuba per 1 million people, against a world average of 208.[10] Lack of server capacity was cited at the University of Havana, at the public library, and at the National Library as the principal reason they couldn't provide various services, such as making the catalogs they are digitizing available on the Internet. Making open access repositories available online is no exception, given the technology

dependence of the open access scholarly communications model.[11] For example, we have found that *Scriptorium*, the University of Havana's institutional repository, cannot be reliably connected to.

In addition, potential researchers and users first need access to reliable Internet to access OA material online. Rapid change in Internet access is predicted in Cuba, but at present, it is limited. Based on 2015 data, the World Bank estimated the world average Internet penetration rate as 43.9%, and Cuba stood at 31.1%.[12] With the state monopolizing data service at high prices, cellular data subscription numbers are very low; whereas worldwide there is an average of 98.622 mobile cellular subscriptions per 100 people, Cuba averages 30 subscriptions.[13] Broadband subscriptions are exceedingly rare as well: it only became available on a limited basis in 2016, as a pilot project, in two neighborhoods in Havana.[14] Instead, Havana residents often congregate to use wifi in publicly provided hotspots and circulate downloaded Internet "paquetes" via flash drives.[15] The overall technological landscape limits libraries' capabilities to provide access to information on the Internet, though they try nonetheless: as of our visit, the Central Library of the University of Havana operated an "Internet room" with 50 computers. In addition, students reportedly receive a limited amount of Internet data access, and efforts are being made to improve the university wifi network.[16] The National Health Sciences Information Center (CNICM) also provides various Internet services, such as hosting, emails, etc.[17]

Keeping the extreme example of Cuba in mind, next we discuss some issues around OA and scholarly communications outside of the global north.

Open Access in the World: Differing Perspectives

Even within the OA movement, perspectives differ about future scholarly communications paradigms. In the United States and western Europe, commercial publishers have long played a central role in scholarly communications, and many stakeholders expect commercial publisher involvement to continue. However, in other parts of the world, commercial scholarly publishing is less dominant, and alternative models were less difficult to imagine. One reason is that in many developing regions, research has traditionally been almost exclusively funded by governments, and to a lesser extent, international agencies.[18] Secondly, though what we saw in Cuba is an extreme example due to the U.S. embargo, institutions in developing regions broadly suffer from relative unaffordability of commercial database packages from abroad. A report by the World Health Organization (WHO) revealed that at the beginning of the 21st century a little over half of the health and medical institutions in the poorest countries had no subscriptions to international journals.[19] Latin American OA stalwart Dominique Babini is perhaps rooted in this context when she states "that commercial publishers should no longer be allowed to set the agenda for scholarly communication."[20]

Babini's alternative model rests on OA repositories, especially those developed in Latin America.[21] This region was an early adopter of OA, organizing journals and networks to share its research starting in the late 1990s with the aforementioned CLACSO and Brazil-based Scientific Electronic Library Online (SciELO), followed by Mexico-based Red de Revistas Cientificas de America Latina y el Caribe, España y Portugal (RedALyC) a few years later. Estimates of the percentage of online OA journals in Latin America vary greatly, though they are consistently higher than 50%, based on figures from Scopus and Ulrich's among other sources, according to Alperin.[22] By contrast, a study of journals in three major indexes found that globally only 11.9% were completely open access.[23]

Babini's views are echoed, not only in developing regions, but also by some scholars in the developed world. For example, Hathcock argues that in the global scholarly communications community, the existing power structure of Western scholarship is still being reproduced.[24] This keeps OA content from the global south in the margins.[25] Consequently, as Crissinger observes, OA projects from the global south remain impactful primar-

ily at the regional or local level.[26] While developed-developing regions partner projects may have an increased reach, these are still likely to carry a strong focus on the Western institutions.[27] Thus, the OA movement should consider work to improve discoverability through means such as metadata and search engines that don't privilege what is already popular in order to bring attention to publications from the margins.[28]

Technological Barriers

The Budapest Initiative states, "By 'open access' to this literature, we mean its free availability on the public Internet… without financial, legal, or technical barriers *other than those inseparable from gaining access to the Internet itself*" (emphasis ours).[29] Many developing nations' scholars detail issues with accessing scholarly materials, including open access content, due to limited access to the Internet. One study examining African researchers' circumstances concludes that "open access is technology heavy, and its economic arrangements benefit mainly the developed world."[30] Other studies by African scholars list persistent issues barring access including slow Internet speeds, inadequate funding, staff with insufficient IT skills, and even irregular power supply.[31] In fact, over half the world's population still does not have access to the Internet.[32]

Though as librarians we are quite cognizant of the digital divide, how often are we aware of these disparities when developing OA tools? Those students and scholars with less ideal access conditions would benefit from more low bandwidth-friendly websites in order to search and access the Internet efficiently. Search pages and repositories can be designed for efficiency with fewer bells and whistles, focus on the most relevant content, and make scanning results easy. This version of a site can be a choice off the homepage or its own website in country domains where it would be most useful.[33] INASP has published a guide to best practices in the design of low bandwidth websites,[34] and the RedALyC repository offers a basic version specifically for low bandwidth users.[35] As an example from the corporate world, in Cuba (and other locations), Google has found a solution for its own content. It has made a deal with the state to overcome its slow Internet speed for Google-owned content such as YouTube and Gmail by caching this bandwidth-hungry material locally.[36]

Other technical issues are incompatible metadata and poor website structure, which impede indexing. As a result, Latin American repositories suffer from low indexing ratios in both Google and Google Scholar, leaving this OA scholarship approaching invisibility online.[37] Nonetheless, the success of the Latin American repository model is inspiring other regions,[38] although Zhong and Jiang still found impediments to emulating it.[39]

Hurdles in Scholarly Communications

Within academia, Western scholarly publishing indicators are considered to reflect academic quality and rigor as measured by "international" indexes such as Web of Science and Scopus and are used to evaluate faculty scholarly output.[40] This can be to the detriment of local publications that rank low or not at all. Given that publishing in known, Western journals often functions as the path to tenure and promotion due to their prestige, scholars in areas on the margins may choose research topics preferred by Western journals to improve an article's chances of acceptance.[41] If so, then local and regional journals could have difficulty finding authors or establishing the reputation to be useful for tenure, even though these journals, as well as publications by research centers and NGOs, may cover issues more relevant to developing region needs.[42] Scholarship needs new evaluative metrics, yet measures such as the impact factor persist even though they have little influence on researchers' choice of whether or not to read an article.[43]

In Latin America, SciELO worked to improve findability of its books and articles through major discovery services and integrate its citation index with Thomson Reuters Web of Science.[44] SciELO intends to better its journals' rankings by competing with the major Western publishers on impact factor. Vessuri, Guédon, and

Cetto were disappointed in SciELO's actions and would rather see Latin American science networking with other developing regions instead of looking to Western standards—if SciELO succeeds, it may find its best journals targeted for acquisition by large commercial firms sensing profit potential.[45] However, alternate metrics are available. RedALyC provides bibliometric indicators for articles limited to just its own journals.[46] Since 2011, authors needing citation metrics for web journals, including those from the developing regions, have been able to use Google Scholar.[47]

Peer review is a key Western standard for scholarly publications. SciELO and RedALyC both publish peer-reviewed journals only,[48] although Alperin found a surprising number of Latin American journals lacked consistent workflow for peer review and reviews conducted by scholars other than the editorial board. To address this issue, regional OA portals provide training in editorial best practices.[49]

Funding by article processing charges (APCs), levied by publishers to support open access, also perpetuates a developed-developing region divide around participating in the global scholarly community. For example, the APC for *PLOSBiology* will cost an assistant professor in India over two month's earnings while a professor working in the United States will only be out half a month's salary.[50] Some people have questioned the ethics of this "pay to publish" model. Outside the sciences, scholars in disciplines that infrequently receive outside funding or researchers from developing economies encounter difficulty affording publication in APC journals.[51] Although APC discounts for developing region researchers are available from major publishers, these fees still hinder authors; however, some publishers grant complete waivers.[52] Also APCs contribute to the problem of true predatory journals.[53] However, Suber points out the APC approach to open access isn't the most common: most peer-reviewed OA journals—about 70%—charge no APCs at all.[54]

How precious access to OA resources is funded may be beyond the control of global south researchers even though they can lose this access when budgets are cut. Funds can be precarious. For instance, funding models for larger projects such as contracting with a for-profit company or relying on philanthropic support have implications around sustainability of these ventures.[55] Moreover, much international support comes as project funding that may not be renewable.[56] In some Latin American countries, both national and organizational monetary support may be unreliable due to tenuous funding policies.[57]

Language poses an additional barrier to developing region scholars. Western publishing, especially in science, primarily uses English; however, not all scholars have sufficient command to publish in this language.[58] English is a second language for many African and Asian researchers, learned in school only and not spoken at home. Its entrenched role in producing and disseminating science privileges researchers from the United States and many current/former British Commonwealth nations. Even reading English language articles can challenge nonnative speakers. In a survey by Gossa, Fisher, and Milner-Gulland, respondents suggested less complicated language in peer-reviewed literature, such as simpler titles and less jargon-filled vocabulary, or translations. The publication *Science* was held up as a model of accessible language.[59] In the humanities and social sciences, English is still privileged, although other languages are better represented.[60] Still there is no clear, practical alternative to the language problem.

Conclusion

Our visit to Cuba not only showed us the history and culture of our Caribbean neighbor but also highlighted barriers to full participation in open access that we anticipated may be shared by others in the global south. Some of these barriers included the digital divide, inequalities in relative purchasing power, global power structures as reflected in scholarly publishing, the dominance of Western scholarly standards, and the privileging of English language scholarship.

While there may be little the OA movement can do directly to influence the Internet infrastructure or the tenure process in developing regions, nonetheless, it can find ways to improve those scholars' access to OA materials and participation in OA publishing. The OA movement can hold firm to its philosophical underpinnings of global inclusion by taking actions mentioned throughout this paper: it can encourage OA websites to accommodate low bandwidth users; develop more inclusive web discovery tools, publishing standards, and evaluative metrics; assist repositories and journals in creating metadata and websites that aid indexing by search engines; help OA publications and initiatives find funding; and find ways to ease the language gap for those who aren't English native speakers.

All these observations aren't intended to trivialize the progress and impact open access has achieved thus far. They're meant to encourage the OA movement in the West to come even closer to the goal of global inclusion, although what we've outlined is by no means all the challenges scholars in Cuba and developing regions face around OA. We give the last thoughts to Maha Bali, an Egyptian academic at the American University, Cairo: "But as a scholar from the global South… what is one to do? Wait until the North listens? Because, really, so far the only way to make them listen has been to write in *their* language, *their* journals, to *their* standards of scholarship and hope for the best."[61]

Notes

1. UN General Assembly, Universal Declaration of Human Rights.
2. "Budapest Open Access Initiative."
3. To clarify, our discussion of OA relates to access in the broader sense of freely available, whether that is in OA journals (gold OA), or in repositories (green OA). The BOAI specifies that to be truly OA materials must have a CC-BY license.
4. Many of the libraries we visited were leaders, developing and disseminating best practices to other libraries of their kind: the National Library (Biblioteca Nacional José Martí, http://www.bnjm.cult.cu); the National Archives (Archivo Nacional de la República de Cuba, http://www.arnac.cu/); the National Health Sciences Information Center (Centro Nacional de Información de Ciencias Médicas, or CNICM, http://www.sld.cu/cnicm.html), comprising a physical National Library of Medicine (Biblioteca Médica Nacional, or BMN) and a virtual library, Infomed; the central library of the University of Havana (Biblioteca Central "Rubén Martínez Villena", http://www.uh.cu/node/1632); and the public library in downtown Havana (Biblioteca Pública Provincial "Rubén Martínez Villena"). In addition, we visited libraries at the Museum of Fine Arts (Museo Nacional de Bellas Artes), and at the Casa de las Américas, a cultural institution, research center and publishing house (www.casa.co.cu/).
5. A UK organization that offers financing and training around scholarly communications to developing region institutions.
6. Inclán et al., "Los repositorios institucionales," 324; Casate Fernández, "El panorama del acceso abierto," 14.
7. Chepesiuk, "Cuban Libraries," 996: In 1990, Cuban libraries had relationships with over 2000 libraries worldwide. During our visit, we heard about continuing exchange programs, and several Cuban colleagues were engaged with the then-upcoming IFLA conference.
8. Centro Nacional de Información de Ciencias Médicas, "Biblioteca Virtual en Salud de Cuba."
9. See, e.g., Casa de Las Américas, "Revista Casa."
10. World Bank, "Secure Internet Servers."
11. Nwagwu, "Open Access in the Developing Regions," 72.
12. World Bank, "Internet Users."
13. World Bank, "Mobile Cellular Subscriptions."
14. Weissenstein, "Cuba Says It Will Launch Broadband."
15. Fenton, "Black Markets."
16. Ibid.
17. Infomed, "Servicios."
18. Alperin, "Open Access Indicators," 15.
19. Aronson, "Improving Online Access to Medical Information."
20. Poynder, "Dominique Babini."
21. As examples, she lists the aforementioned SciELO, RedALyC and, South Africa-based African Journals Online (AJOL).
22. Alperin, "Open Access Indicators," 17.
23. Fuchs and Sandoval, "Diamond Model of Open Access," 431–32.
24. Hathcock, "Making the Local Global."
25. Hathcock, "Open but Not Equal."
26. Crissinger, "Critical Take on OER."

27. Sharma, "(Anti)Social Life of a Digital Journal."
28. Hathcock, "Open but Not Equal."
29. "Budapest Open Access Initiative."
30. Nwagwu, "Open Access in the Developing Regions."
31. Fyneman, Idiedo, and Ebhomeya, "Use of Electronic Resources"; Fagbola, "State of Information and Communication Technologies."
32. World Bank, "Internet Users."
33. Zelnio, "Bandwidth and Open Access in Developing Countries." For example, plos.tz/biomedcentral.tz for plos.org/biomedcentral.com in Tanzania.
34. Jackson, "Bandwidth Friendly Websites."
35. http://www.RedALyC.org/homeBasic/oa.
36. Weissenstein, "Google to Give Cubans Faster Access."
37. Orduña-Malea and López-Cózar, "Dark Side of Open Access," 844.
38. Madhan et al., "Should Indian Researchers Pay."
39. Zhong and Jiang, "Institutional Repositories in Chinese Open Access." A China-based study cited lack of comprehensive understanding of the purpose and benefits of IRs, scholars' concerns about copyright and plagiarism, insufficient staff within libraries with the requisite IT knowledge, and a parallel lack of understanding of libraries amongst the IT staff with the skills.
40. Alperin, "Open Access Indicators," 16. Alperin notes "only a small fraction of journals from developing regions are included."
41. Vessuri, Guédon, and Cetto, "Excellence or Quality?," 650–51. See also Waal, "African Academics" for more on this in the African context.
42. Patterson, "Open Access Could Address Inequalities"; Alperin, "Open Access Indicators," 19.
43. Gossa, Fisher, and Milner-Gulland, "Research-Implementation Gap," 85.
44. Packer, "SciELO Network Model," 88.
45. Vessuri, Guédon, and Cetto, "Excellence or Quality?," 660, 657.
46. Aguado-López and Becerril-García, "Redalyc: A Platform of Visibility," 124.
47. Alperin, "Open Access Indicators," 36.
48. Babini and Becerril, "Open Access in Latin America."
49. Alperin, "Open Access Indicators," 37.
50. Madhan et al., "Should Indian Researchers Pay."
51. Rizor and Holley, "Open Access Goals Revisited," 329.
52. Shuva and Taisir, "Bangladesh Perspective," 45."
53. Williams-Jones et al., "Ethical Challenges."
54. Peter Suber on the State of Open Access; Poynder, "Dominique Babini" Note: Crotty's quick estimate that included hybrid journals come to a different conclusion. David Crotty. "Is it True that Most Open Access Journals Do Not Charge an APC? Sort of. It Depends." The Scholarly Kitchen (blog). August 26, 2015, https://scholarlykitchen.sspnet.org/2015/08/26/do-most-oa-journals-not-charge-an-apc-sort-of-it-depends/.
55. Crissinger, "Critical Take on OER."
56. Swan and Sutton, "Sustainability of an OA Infrastructure," 13.
57. Packer, "SciELO Network Model," 85.
58. Vessuri, Guédon, and Cetto, "Excellence or Quality?," 656."
59. Gossa, Fisher, and Milner-Gulland, "Research-Implementation Gap," 83.
60. Vessuri, Guédon, and Cetto, "Excellence or Quality?," 656.
61. Bali, "Amplifying the Voices of Global-South Scholars."

Bibliography

Aguado-López, Eduardo, and Arianna Becerril-García. "Redalyc: A Platform of Visibility for the Scientific Production." In Open Access Indicators and Scholarly Communications in Latin America, edited by Alperin, Juan Pablo, Dominique Babini, and Gustavo Fischer, 97–142. Buenos Aires: CLACSO, 2014. Accessed on February 1, 2017, http://www.biblioteca.clacso.edu.ar/clacso/se/20140917054406/OpenAccess.pdf.

Alperin, Juan Pablo. "Open Access Indicators: Assessing Growth and Use of Open Access Resources from Developing Regions; The Case of Latin America." In Open Access Indicators and Scholarly Communications in Latin America, edited by Alperin, Juan Pablo, Dominique Babini, and Gustavo Fischer, 15–78. Buenos Aires: CLASCO, 2014. Accessed on February 1, 2017, http://www.biblioteca.clacso.edu.ar/clacso/se/20140917054406/OpenAccess.pdf.

Aronson, Barbara. "Improving Online Access to Medical Information for Low-Income Countries." New England Journal of Medicine 350, no. 10 (March 4, 2004): 966–68. doi:10.1056/NEJMp048009.

Babini, Dominique, and Arianna Becerril. "Open Access in Latin America & the Case of CLACSO-REDALYC." webinar presented at the Latin American Studies Association Meeting, New York, N.Y., May 31, 2016.

Bali, Maha. "Amplifying the Voices of Global-South Scholars." Al-Fanar Media, October 7, 2016. http://www.al-fanarmedia.org/2016/10/amplifying-the-voices-of-global-south-scholars/.

Budapest Open Access Initiative. "Read the Budapest Open Access Initiative," February 14, 2002. http://www.budapestopenaccessinitiative.org/read.

Cano Inclán, Anisley, Raiza Ana De Dios Arias, Ognara García García, and Floriselda Cuesta Rodríguez. "Los repositorios institucionales: situación actual a nivel internacional, latinoamericano y en Cuba." Revista Cubana de Información en Ciencias de la Salud 26, no. 4 (2015): 314–29.

Casa de Las Américas. "Revista Casa," accessed on January 30, 2017, http://www.casa.co.cu/revistacasa.php.

Casate Fernández, Ricardo. "El panorama del acceso abierto en Cuba: estrategias y modelo para su desarrollo," (paper presented at the IFLA satellite conference Social Science Libraries: A Bridge to Knowledge for Sustainable Development, Havana, Cuba, August 8, 2011. Accessed on January 31, 2017, http://hdl.handle.net/2142/25884.

Centro Nacional de Información de Ciencias Médicas. "Biblioteca Virtual en Salud de Cuba." Accessed January 30, 2017. http://bvscuba.sld.cu/.

Chepesiuk, Ron. "Cuban Libraries: 30 Years after the Revolution." American Libraries 21, no. 10 (1990): 994–97.

Crissinger, Sarah. "A Critical Take on OER Practices: Interrogating Commercialization, Colonialism, and Content." In the Library with the Lead Pipe, October 21, 2015, http://www.inthelibrarywiththeleadpipe.org/2015/a-critical-take-on-oer-practices-interrogating-commercialization-colonialism-and-content/.

Fagbola, Bolanle Oluyemisi. "The State of Information and Communication Technologies (ICTs) in Research Institute Libraries in Southwestern Nigeria." Information Technologist 13, no. 1 (2016): 15–24.

Fenton, William. "Black Markets and Secret Thumb Drives: How Cubans Get Online." PC Magazine, March 21, 2016, http://www.pcmag.com/article2/0,2817,2499712,00.asp.

Fuchs, Christian, and Marisol Sandoval. "The Diamond Model of Open Access Publishing: Why Policy Makers, Scholars, Universities, Libraries, Labour Unions and the Publishing World Need to Take Non-Commercial, Non-Profit Open Access Serious." tripleC: Communication, Capitalism & Critique 11, no. 2 (2013): 428–43.

Fyneman, Biokuromoye, Victor O. Idiedo, and Loveth Ebhomeya. "Use of Electronic Resources by Undergraduates in Two Selected Universities in the Niger Delta Region of Nigeria." Information Impact: Journal of Information and Knowledge Management 5, no. 2 (2014): 170–86.

Gossa, Céline, Martin Fisher, and E. J. Milner-Gulland. "The Research-Implementation Gap: How Practitioners and Researchers from Developing Countries Perceive the Role of Peer-Reviewed Literature in Conservation Science." Oryx 49, no. 1 (2015): 80–87. doi:http://dx.doi.org/10.1017/S0030605313001634.

Hathcock, April. "Making the Local Global: The Colonialism of Scholarly Communication." At the Intersection, September 27, 2016, https://aprilhathcock.wordpress.com/2016/09/27/making-the-local-global-the-colonialism-of-scholarly-communication/.

———. "Open but Not Equal: Open Scholarship for Social Justice." At the Intersection, February 8, 2016. https://aprilhathcock.wordpress.com/2016/02/08/open-but-not-equal-open-scholarship-for-social-justice/.

Hodgson, Cynthia. "Open Access Infrastructure: Where We Are and Where We Need to Go." Information Standards Quarterly 26, no. 2 (2014): 4–6. doi:10.3789/isqv26no2.2014.02.

Infomed. "Servicios," accessed on Feburary 1, 2017. http://www.sld.cu/servicios-de-infomed.

Jackson, Alan. "When It Comes to Websites... Small Is Beautiful: A Guideline for Making Bandwidth Friendly Websites." Oxford: INASP, 2009. http://www.inasp.info/uploads/filer_public/2013/02/27/website_guidelines_jackson.pdf.

Madhan, Muthu, Siva Shankar Kimidi, Subbiah Gunasekharan, and Subbiah Arunachalam. "Should Indian Researchers Pay to Get Their Work Published?" Centre for Internet & Society, October 2016. http://cis-india.org/openness/eprints-iisc-ernet-october-29-2016-muthu-madhan-siva-shankar-kimidi-subbiah-gunasekaran-subbiah-arunachalam-should-indian-researchers-pay-to-get-their-work-published.

Nwagwu, W.E. "Open Access in the Developing Regions: Situating the Altercations about Predatory Publishing." Canadian Journal of Information and Library Sciences 40, no. 1 (March 2016): 58–80.

Orduña-Malea, Enrique, and Emilio Delgado López-Cózar. "The Dark Side of Open Access in Google and Google Scholar: The Case of Latin-American Repositories." Scientometrics 102, no. 1 (2015): 829–46. doi:10.1007/s11192-014-1369-5.

Packer, Abel L. "The Metrics Used in the Development of the SciELO Network Model." In Open Access Indicators and Scholarly Communications in Latin America, edited by Alperin, Juan Pablo, Dominique Babini, and Gustavo Fischer, 81–96. Buenos Aires: CLACSO, 2014. http://www.biblioteca.clacso.edu.ar/clacso/se/20140917054406/OpenAccess.pdf.

Patterson, Mark. "Meeting Considers How Open Access Could Address Inequalities." Research Information, no. 75 (2014): 8.

Poynder, Richard. "Dominique Babini on the State of Open Access: Where Are We, What Still Needs to Be Done?" Open and Shut? (Blog), July 25, 2013. http://poynder.blogspot.com/2013/07/dominique-babini-on-state-of-open.html.

Right to Research Coalition. Peter Suber on the State of Open Access, transmitted live October 18, 2016. Youtube video, 1:01:35. https://www.youtube.com/watch?v=ahADSfuB73E.

Rizor, Sara L., and Robert P. Holley. "Open Access Goals Revisited: How Green and Gold Open Access Are Meeting (or Not) Their Original Goals." Journal of Scholarly Publishing 45, no. 4 (July 2014): 321–35.

SciELO. "SciELO in the Major Discovery Services." SciELO in Perspective, April 13, 2016. http://blog.scielo.org/en/2016/04/13/scielo-in-the-major-discovery-services/.

Sharma, Ashwani. "The (Anti)Social Life of a Digital Journal in the Era of Global Info-Capitalism." Small Axe 20, no. 2 (2016): 76–84.

Shuva, Nafiz Zaman, and Radia Taisir. "Faculty Members' Perceptions and Use of Open Access Journals: Bangladesh Perspective." IFLA Journal 42, no. 1 (2016): 36–48. doi:10.1177/0340035216628879.

Swan, Alma and Caroline Sutton. "Sustainability of an OA Infrastructure." Information Standards Quarterly 26, no. 2 (2014): 13. doi:10.3789/isqv26no2.2014.02.

UN General Assembly. Universal Declaration of Human Rights, Pub. L. No. Resolution 217 A (1948). http://www.un.org/en/universal-declaration-human-rights/.

Vessuri, Hebe, Jean-Claude Guédon, and Ana María Cetto. "Excellence or Quality? Impact of the Current Competition Regime on Science and Scientific Publishing in Latin America and Its Implications for Development." Current Sociology 62, no. 5 (2014): 647–65. doi:10.1177/0011392113512839.

Waal, Alex de. "African Academics Face a Huge Divide between Their Real and Scholarly Selves." Conversation, March 10, 2016. http://theconversation.com/african-academics-face-a-huge-divide-between-their-real-and-scholarly-selves-55899.

Weissenstein, Michael. "Cuba Says It Will Launch Broadband Home Internet Project." Miami Herald, January 31, 2016. Accessed on February 1, 2017. http://www.miamiherald.com/latest-news/article57672808.html.

———. "Sources: Google to Give Cubans Faster Access to Content." Toronto Star, December 12, 2016. Accessed on February 1, 2017. https://www.thestar.com/business/2016/12/12/google-to-give-cubans-faster-internet-access-to-content-sources-say.html.

Williams-Jones, Bryn, Jean-Christophe Belisle Pipon, Elise Smith, and Renaud Boulanger. "Ethical Challenges of Open-Access Publishing." University Affairs, January 15, 2014. Accessed on February 1, 2017. http://www.universityaffairs.ca/opinion/in-my-opinion/ethical-challenges-of-open-access-publishing/.

World Bank. "Internet Users (per 100 People)," accessed January 28, 2017. http://data.worldbank.org/indicator/IT.NET.USER.P2.

World Bank. "Mobile Cellular Subscriptions (per 100 People)," accessed January 28, 2017. http://data.worldbank.org/indicator/IT.CEL.SETS.P2.

World Bank. "Secure Internet Servers (per 1 Million People)," accessed January 28, 2017. http://data.worldbank.org/indicator/IT.NET.SECR.P6.

Zelnio, Kevin. "Bandwidth and Open Access in Developing Countries." EvoEcoLab (Blog), Scientific American, September 23, 2012. http://blogs.scientificamerican.com/evo-eco-lab/bandwidth-and-open-access-in-developing-countries/.

Zhong, Jing, and Shuyong Jiang. "Institutional Repositories in Chinese Open Access Development: Status, Progress, and Challenges." Journal of Academic Librarianship 42, no. 6 (2016): 739–44. doi:10.1016/j.acalib.2016.06.015.