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***Library Philosophy and Practice* 2011**

ISSN 1522-0222

Open Access, African Scholarly Publishing, and Cultural Rights: An Exploratory Usage and Accessibility Study

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Introduction

For much of the previous century, it was rare for individuals outside of the library and information science field to view information work within a context of social justice, democratization or human rights despite the long standing public awareness that journalism, another information field, holds a key place in these areas. However, there has been a shift in this first decade of the 21st century. Individuals and organizations across the globe not normally associated with the library and information science world are recognizing the need for access to information if local and global social inequalities are to be redressed. As a result, librarians and information workers in both industrialized and less-industrialized nations have new opportunities for increasing the significance of information work for achieving fundamental human rights. Similarly, the Open Access (OA) Movement has been praised by proponents as a way to reverse the unsustainability of traditional scholarly publishing economic models and to aid in the equalization of the flow of information between industrialized and less industrialized nations. The OA Movement is thus also seen as a means of helping achieve fundamental human rights as presented in the Universal Declaration of Human Rights (UDHR). When examining the place of information in the human rights framework, most focus on Article 19 of the UDHR and the corresponding Article 19 of the International Covenant on Civil and Political Rights (ICCPR) which codifies it:

> Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice. (United Nations General Assembly, 1966a, article 19)

While the relationships between Article 19, access to information, and human rights are fairly obvious, there is another piece of the human rights framework that is equally important with relation to information work yet it receives much less attention. Article 27 of the UDHR is codified in Article 15 of the International Covenant on Economic, Social, and Cultural Rights (ICESCR) where it states:

> 1. The States Parties to the present Covenant recognize the right of everyone:
>
> (a) To take part in cultural life;
>
> (b) To enjoy the benefits of scientific progress and its applications;
>
> (c) To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author. (United Nations General Assembly, 1966b, article 15)

In this paper, I report on an exploratory study that used data gathered during a forty day period to compare the OA journal usage of researchers in African countries with that of researchers in Latin American and Caribbean (LAC) countries. Indexing and abstracting of African scholarly journals is also a key necessity if a more even flow of information from Southern to Northern countries is to be achieved and if the journals themselves are to be truly accessible to other scholars. Therefore, the study also examines the accessibility of indexing and abstracting coverage of African scholarly OA journals and compares the data with that of non-OA journals from the continent. I examine the relationship between current African OA usage and content production and the cultural rights expressed in Article 27 of the UDHR. The data suggests that, in contrast to LAC countries, African researchers are being less active consumers and more passive contributors to the OA model. OA is thus not yet contributing significantly to the reversal of North to South information flows in the African context nor is it yet making a significant impact on achieving the rights guaranteed in Articles 19 and 27 of the UDHR. The results also indicate that African OA publications are more accessible in the abstracting and indexing services than non-OA African publications, so an increased shift from non-OA to OA publications in African scholarly publishing may contribute to improving information flow reversal in the future.

Defining Cultural Rights

Any definition of cultural rights must use as its base the international documents which constitute the International Bill of Human Rights: the UDHR, the ICCPR, and the ICESCR. The UDHR was adopted by the General Assembly of the United Nations (UN) on December 10, 1948 and laid the groundwork for the codification of the rights presented in the subsequent documents of the ICCPR and ICESCR, both of which were adopted by the UN General Assembly on December 16, 1966 and are legally binding to those states that have ratified them. While a specific mention to "cultural rights" is only found in one article in the UDHR (Article 22) and the term "cultural life" is used in only one article of both the UDHR (Article 27) and the ICESCR (Article 15), there are many linkages between what could be considered "cultural rights" and other specific rights presented in the International Bill of Rights (Eide, 2001). In effect, cultural rights refers not only to specific cultural products (books, artwork, historic artifacts), but to a wide range of processes that include such things as language, association, religion, and education. Additionally, many of the other rights presented in the UDHR (e.g. right to housing, food, and health) have strong and distinct cultural dimensions.

Taken broadly, if we are to consider cultural rights we must look beyond the explicit references to culture and consider all those rights that protect components of cultural identity and the dignity of individuals and communities (Donders, 2007). The United Nations Committee on Economic, Social and Cultural Rights (CESCR) further clarified the meaning of culture and "cultural life" in its General Comment No. 21 (UN CESCR, 2009). The Committee made clear that their interpretation of culture is broad, inclusive, and views culture as a living, dynamic, and evolving process of interrelated processes and manifestations in which individuals and communities give expression: "Culture shapes and mirrors the values of well-being, as well as the economic, social and political life of individuals, groups of individuals and communities" (UN CESCR, 2009, p. 3). While it was once common to believe that there was "one" culture within a nation or community, the contemporary understanding of the "right to participate in cultural life" is that there are many communities within a state (and sub-communities within communities) all of which have cultural rights (McGoldrick, 2007). The UN CESCR (2009) addresses this normative issue by stating:

> A decision by a person to exercise or not to exercise the right to take part in cultural life individually, or in association with others, is a cultural choice and as such, should be recognized, respected and protected on the basis of equality. (p. 2)

Previously, the Committee had specified that individuals have the right to take part in the cultural life which he or she considers pertinent and the right to manifest his or her own culture (McGoldrick, 2007).

Most importantly, the Committee has recently specified that there are three interrelated components of the right to take part in cultural life: participation, access, and contribution (UN CESCR, 2009). These correspond to the core elements of Article 15 of the ICESCR: the right to participate in cultural life; the right to benefit from scientific progress; and the right to benefit from the protection of moral and material interests resulting from any scientific, literary, or artistic production of which an individual is the author. In addition, Article 15 states that the signatories to the Covenant (i.e. nation-states) bear the responsibility to achieve full realization of this right by: taking the steps necessary for the conservation, development and diffusion of science and culture; respecting the freedom indispensable for scientific research and creative activity; and by recognizing the benefits to be derived from encouraging and developing international contacts and co-operation in the scientific and cultural fields (United Nations General Assembly, 1966b, article 15). Inherent in any discussion of cultural rights is a tension between individuals and communities. Culture does not exist without a "group" or a community; however, that group is, by definition, made up of individual parts. It is quite common that an individual as a "producer of culture" finds existing traditions unacceptable, insufficient, or even sometimes repressive. Thus, individual cultural rights can both coincide with collective human rights while also representing a challenge to them should the power structures that exist within a given state or sub-region be challenged by individuals negatively impacted by those cultural traditions (Eide, 2001).

Relationship between Cultural Rights and Library and Information Work

Given this understanding of cultural rights in the international framework, what relationship exists between cultural rights and information work? Why should librarians and information workers care about cultural rights – in Africa or elsewhere? Given the clarification of the term "culture" made by the CESCR, it is clear that information work relates to many aspects of culture – most obviously language, oral and written literature, music and song, methods of production and technology, and the arts. Less obvious perhaps are the ways that information (whether based in a physical space such as a library or spread over the Internet or through oral channels) plays a key role in other aspects of culture such as religion or belief systems, rites and ceremonies, sports and games, food production, and other customs. Information allows groups and individuals within a community to either perpetuate entrenched cultural traditions or develop new ones. Information and library work is thus never truly a neutral element in a cultural context. Librarians and information workers most often strive against censorship, work for intellectual freedom, and seek to provide balanced representation of ideas and resources. This tradition itself can be contrary to the particular cultural values of a given portion of a community. Thus the information worker must understand that he or she plays a critical role in cultural life. Shiraz Durrani (2007) has gone so far as to argue that the librarian is not neutral when he or she supports the status quo and remains silent on social and political issues, arguing that when information workers remain aloof from the political and social struggles of the community they alienate themselves from the people they intend to serve. If there is any doubt that the intersections of information, communication and culture constitute a complex set of relationships that encourages passionate national and international debate and disagreement, one has only to look at the U.S. opposition to the MacBride report in 1980 and the subsequent withdrawal of the U.S. from the United Nations Educational, Scientific and Cultural Organization (UNESCO) from 1984 until 2003 (Preston Jr., Herman, & Schiller, 1989).

In their reporting guidelines concerning cultural rights, the CESCR (1991) specifically asks the States to report on the institutional infrastructure established for the implementation of policies to promote popular participation in culture -- including libraries. They also call on States to report: on the role of mass media and communications media in promoting participation in cultural life; the States efforts at aiding the preservation of and presentation of mankind's cultural heritage; and national legislation protecting the freedom of artistic creation and performance (including the freedom to disseminate the results of such activities). Thus we can see that the U.N. Committee clearly recognizes the responsibility of individual governments in providing the infrastructure necessary for information and library work in order that individuals and groups of individuals may participate in cultural life. Similarly, the *Convention on the Protection and Promotion of the Diversity of Cultural Expressions* (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2005) which entered into force on March 18, 2007 confirms the importance that traditional knowledge, diversity of cultural expressions, diversity of the media, linguistic diversity, and intellectual property rights play in the protection and promotion of the diversity of cultural expressions – all of which are aspects of information work. As Durrani (2008) has so often expressed, for libraries and information workers to be relevant to the communities they serve, they must not only have relevant content, but they must also provide that content in relevant media (e.g. oral/visual formats *as well as* written/text formats and relevant languages to the communities in question).

Finally, the *Declaration of Principles* of the United Nations World Summit on the Information Society (WSIS) provides important insight into key principles of an information society for all (UN WSIS, 2003). This document emphasizes that the information society must be founded on, and stimulate respect for, cultural identity, cultural and linguistic diversity, traditions and religions, and foster dialogue among cultures and civilizations. It can only do so by according high priority to the dissemination and preservation of content in diverse languages and formats and promoting the production of and accessibility to all content -- educational, scientific, cultural or recreational -- in diverse languages and formats. These are just a few examples of major international documents and conventions that clearly draw the connection between library and information work and the cultural rights guaranteed to communities and individuals in the UDHR and the ICESCR.

Library Development in Sub-Saharan Africa: What Place Cultural Rights?

Given this connection between cultural rights and library and information work, I will now turn to the historical dimension of library development in Sub-Saharan (SS) Africa and examine the role cultural rights have played. While libraries of printed materials existed prior to colonialism on the African continent (e.g. the famous desert libraries of Timbuktu, Mali), oral tradition and the arts were generally more responsible for the transmission of knowledge and cultural values (Kaungamno & Ilomo, 1979; Odi, 1991; Paulos, 2008). Human memory, speech, and collective activity served as the "libraries" and centers of learning for the majority of SS African communities. Along with the other major disruptions and changes that occurred during the colonial era, ideas of what constituted worthy "knowledge" and "information", and thus "libraries", changed. In some cases the colonial powers brought with them their own libraries, to serve their own communities exclusively (Sturges & Neill, 1998). In other cases, they used libraries as a tool to exert a type of intellectual control over local populations. Collections reflected the colonial mindset or what was deemed important or "appropriate" for the local population to know. Indigenous knowledge and local systems of knowledge exchange were either not recognized as such, or were intentionally dismissed as primitive and unworthy of consideration (Paulos, 2008).

The colonial libraries became propaganda tools in the war to demolish the African world view in favor of the European world view. The image of the library itself became inherently connected with colonial rule for most African populations (Odi, 1991). The physical architecture of these libraries, the underlying beliefs about information needs and information seeking, the procedures, collections, and training of staff all reflected European history and identity (Sturges & Neill, 1998). The oral tradition was viewed as a "problem" to be remedied and librarianship was viewed as strictly the preservation and documentation of the written word (Iwuji, 1990). This view of the oral tradition resulted in the dismissal of the social, literary, and historical relevance of the tradition and severely limited the understanding of African knowledge and the rich communication system that had developed over thousands of years (Alemna, 1996; Raseroka, 2006; Sturges & Neill, 1998). Print based containers for information were recognized as the only valid format for knowledge – and, even then, the print had to convey a certain world view and be in a European language. Cultural rights, as defined and discussed above, were not recognized, encouraged, or upheld.

The strong influence of colonialist thinking and behaviors resulted in a paternalistic attitude which persisted even after most countries achieved independence in the late 1950s and early 1960's. Throughout the better part of the second half of the 20th century, library discussions focused on the belief that if libraries, institutions, and associations from the global North simply "adopted" African libraries and assisted in the flow of information and resources from North to South, the problem of stunted library development and information poverty could be alleviated (Lor & Britz, 2005). The vision of a one-way flow of information was viewed as an acceptable dynamic by librarians and information workers outside of Africa and even some information professionals from the continent themselves, although a vocal and strong group of dissenting voices was developing, including such African library pioneers as Adolphe Amadi, Kingo J. Mchombu, B. Olabimpe Aboyade, Anaba A. Alemna, and Raphael Ndiaye. As the 21st century dawned, a greater number of information professionals, both African and European alike, began adding to the call for a more equitable flow of information and a reversal of straight North to South trajectories in favor of both South to North and South to South flows (Poppeliers, 2010). The roots of this movement can be found in Kingo J. Mchombu's (1982) revolutionary call for a "Librarianship of Poverty" and Peter Lor's subsequent paper (as cited in Sturges & Neill, 1998) *Africanisation of South African Libraries: A Response to Some Recent Literature* presented at the 1993 *Info Africa Nova Conference* in Pretoria. Lor's principles, which build off Mchombu's earlier writing, included librarians committing themselves to the values of the communities they serve, no discrimination against users based on levels of literacy, higher prioritization of communication than organization, and an acceptance that community information resources have a higher claim on funding than sophisticated information services.

These new visions of what African librarianship and information work can look like include more awareness of the cultural rights of the communities and sub-communities served. Other library and information scholars, such as Kay Raseroka (2006), B.J. Mostert (1998), and Jabulani Sithole (2007) have written about current efforts on the continent that reflect a new paradigm of African information work – one which reflects cultural rights (e.g. African languages, oral tradition, indigenous knowledge) as well as the concomitant right to enjoy the arts and share in scientific advancement and its benefits. Within this context, the OA movement can be viewed as a necessary piece of library and information work in SS Africa that is vital in helping achieve cultural rights.

The Open Access Movement: Definitions

I will now turn to a discussion of the OA Movement and examine its relationship with cultural rights. A very succinct and common OA definition is "free and immediate online access to peer–reviewed journal literature" (Crow, 2009, p. 2). Following the 2001 *Open Letter to Scientific Publishers* signed by tens of thousands of scholars worldwide which called for "…the establishment of an online public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely accessible, fully searchable, interlinked form" (Public Library of Science (PLOS), 2001) several international statements were released that have since formed the core of the OA Movement. Peter Suber, Senior Researcher at the Scholarly Publishing & Academic Resources Coalition (SPARC), and historian and researcher of the OA Movement, refers to these documents collectively as the BBB definition. This includes statements made about OA from the Budapest Open Access Initiative (BOAI, 2002), the Bethesda Statement on Open Access Publishing (Suber, 2003), and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (Conference, 2003). Suber (2007) defines OA literature as digital, online, free of charge, and free of most copyright and licensing restrictions. Suber (2007) also clarifies that:

> OA is compatible with copyright, peer review, revenue (even profit), print, preservation, prestige, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature. The primary difference is that the bills are not paid by readers and hence do not function as access barriers. (para. 2)

The two primary methods for delivering OA to research articles are through OA archives or repositories and OA journals (Suber, 2004). Crow (2009) emphasizes that OA is a distribution model, not an income model. Income models that can be used to support the OA distribution model can be either supply-side or demand-side income models; however, supply-side models dominate. Although many authors generally believe that their work will have wider readership if published through OA venues, studies to demonstrate the impact of OA articles are few; however, Antelman (2004), in her study examining OA articles in the disciplines of philosophy, political science, electrical and electronic engineering, and mathematics found that OA articles in these disciplines do indeed have a greater impact than articles that are not freely available.

From a philosophical perspective, Willinsky (2006) has discussed a broader "access principle", emphasizing that:

> A commitment to the value and quality of research carries with it a responsibility to extend the circulation of such work as far as possible and ideally to all who are interested in it and all who might profit by it. (p. xii)

Willinsky sees the OA Movement as both an extension of a long scholarly tradition concerned with extending the circulation of knowledge as far as possible and as a recent response to two conflicting current events in the history of scholarship: the steady escalation of journal prices at a rate greatly exceeding inflation over the course of two decades, and the advent of the Internet and digital publishing which created a viable alternative to a traditional publishing model. Willinsky (2006) draws attention to the fact that OA "speaks to extending the research capacities of developing nations, increasing public rights of access to knowledge, and furthering the policy and political contributions of research…" (p. xiii). Because of this, there is a great deal at stake when it comes to the potential impact of OA. In relating OA to human rights, Willinsky emphasizes that any discussion on OA essentially boils down to this one statement "At issue is who has a right of access to what is known" (p. 141). While Suber (2010) tracks the OA Movement's birth back to 1966 and the launching of the Educational Resources Information Center (ERIC) in the United States, it was not until the first decade of the 21st century that OA truly gained ground. The impact of OA has now been felt internationally in both industrialized and less industrialized nations, as evidenced by the fact that *Nature, Science, The Scientist,* and *the Wall Street Journal* all ranked OA among the top science stories in 2003 (Willinsky, 2006). Additionally, the Federation of Libraries Association's (IFLA) 2010 76th Conference theme "Open access to knowledge - promoting sustainable progress" is a further example of the widespread international acknowledgement that OA is changing the scholarly information landscape.

Open Access and Africa: A Brief Review

Given this increased attention to OA, it is no surprise that the literature on OA and its potential for libraries in SS Africa has also increased; however, when compared to the full backdrop of literature on OA, there is still relatively little available. Much of the literature on African OA efforts has emphasized the obstacles and challenges to the realization of these efforts (Baker, 2004; Lwoga & Chilimo, 2006; Nwagwu and Ahmed, 2009; Masango, 2006). Obstacles identified include the lack of: awareness about OA and copyright issues; a peer-review process which inhibits authors from wanting to deposit their work; clear institutional policies for OA; coordination among academic libraries; African library consortia; strong institutional infrastructures; adequate funding; a critical mass of scientists to form a viable research community, and the participation of government. Christian (2008), in discussing the issues and challenges facing OA in developing countries, emphasizes that OA will not reverse the flow of information from North to South unless economic and technological obstacles are addressed. Otherwise:

> The noble objective of open access initiative will not be realized if scholars in developing countries merely constitute "active consumers" and "passive contributors" under this initiative, reading only research works and publications by scholars and academics from developed countries published in the open access journals and archives. (p. 5)

Nwagwu and Ahmed (2009), in their detailed discussion of building OA in Africa, argue that the major obstacle is that electronic resources are generally inaccessible to most Sub-Saharan countries and they do not have the technological infrastructure to receive and distribute OA publications effectively. This is part of a larger problem in which there is little African influence in the Internet at all levels of governance and contribution. Nwagwu and Ahmed also emphasize cultural issues inherent in Information Communication Technologies (ICTs) (for example, language issues) that impact use and adoption in many situations: "Software carries with it a view of the world, of people, of reality, of time, of the capabilities of users, which may or may not be compatible with any given and social context" (p. 96). They also point to the lack of an intellectual property law framework and enforcement mechanism which thus devalues the economic benefit of open source products by falsely reducing the price of proprietary software. Like Christian, Nwagwu and Ahmed emphasize that for OA to succeed in SS Africa, national governments must invest in building the infrastructure required for OA including the designing of tools, providing platforms for management, and making the technology available. They argue that OA must be seen as an extension of Research and Development (R&D) investments. Dulle et al. (2010), in their study examining the adoption of OA for scholarly communication in Tanzanian public universities, found that the majority of both policy makers (90.5%) and researchers (72.1%) were aware of OA; however, more of the researchers (62%) simply accessed free online content more than those (20%) who also disseminated their scholarship through OA. While the majority of researchers expressed the enthusiastic willingness to disseminate their content through OA outlets, the researchers identified the two main obstacles to this as current poor research conditions in Tanzania and the researchers low Internet self-efficacy. Additionally, inadequate online publishing skills and slow Internet connectivity were other major deterrents for researchers wishing to disseminate their findings through OA platforms. Gbaje (2010), in a study of the scholarly journals published in Ahmadu Bello University in Zaria, Nigeria, found that only 9.5% of the scholarly journals published in the university were OA journals. The reasons given by the respondents were: lack of ICT infrastructure and skilled personnel to host and maintain their presence online (47.6%), lack of funds to pay for webhosting and maintaining a website for the journal (19.1%), concerns about copyright and plagiarism (9.5%); and lack of interest in electronic and web publishing (9.5%). Additionally, in sharp contrast to Dulle et al. (2010), 76% of respondents were not aware of OA initiatives at all.

Beyond these articles, there has not yet been a large body of literature focusing specifically on OA *content* and its use and adoption in SS Africa. Goldstein (2008) has written about the OA movement in terms of ICT infrastructure and has drawn attention to the need for development practitioners, economists, and local entrepreneurs to form a common agenda to make increased ICT access a reality. Additionally, the United Nations ICT Task Force Working Group on the Enabling Environment (Danofsky, 2005) published a collection of articles intended to "raise awareness among stakeholders in the development field of the opportunities and possibilities that exist in bringing access and connectivity to the African continent" (p. 1). While this is a rich resource for discussing many aspects of OA in SS Africa, it focuses on the technological infrastructure necessary for OA rather

than the actual content of OA. There is a great need for more scholarship and investigation focusing on OA *content* from and to SS Africa.

Goals of the Study: Measuring Use and Accessibility of OA Content in Africa

Due to this general lack of available literature on the use and creation of OA content on the continent, I designed the following exploratory study with several goals in mind. First, I wanted to examine the use of OA journals from within Africa and compare that with use from another world region, Latin America and the Caribbean (LAC). The reasons for this choice of regions is explained below. I also wanted to compare the use of OA journals with the actual production of content from within Africa. Finally, as Yontz and Fisher (2007) have pointed out: "If open access journals are to fulfill their promise, their inclusion in the indexing and abstracting services used by scholars and researchers is essential" (p. 126), so my final goal was to measure the extent to which African OA journals are being included in abstracting and indexing (A&I) services. I also measured the extent to which these journals are accessible in Google Scholar, a free scholarly search service more likely to be used in many African countries due to the prohibitory expense of commercial A&I products. To achieve these goals, I gathered data from the following resources: the Directory of Open Access Journals (DOAJ), OpenJournals Publishing (OJP), African Journals Online (AJOL), Bioline International, and the Sabinet Open Access Journal Collection.

DOAJ Use and Contribution: Methodology of Study

DOAJ provides a unique opportunity to examine the extent to which usage from African countries compares with usage from other parts of the world because the home website uses a geo-localization tool "geocounter" to track the location of visitors coming to the site (Geovisite, 2010). DOAJ grew out of the 2002 First Nordic Conference on Scholarly Communication with the goal to create a comprehensive directory of OA journals that would be of service to the global research and education community. The aim of the DOAJ is "to increase the visibility and ease of use of open access scientific and scholarly journals thereby promoting their increased usage and impact and to cover all open access scientific and scholarly journals that use a quality control system (peer-review or editorial quality control) to guarantee the content" (DOAJ, 2010). At the time of this writing, it contained a total of 4,773 journals from all areas of the world, with 1889 of these journals searchable at the article level.

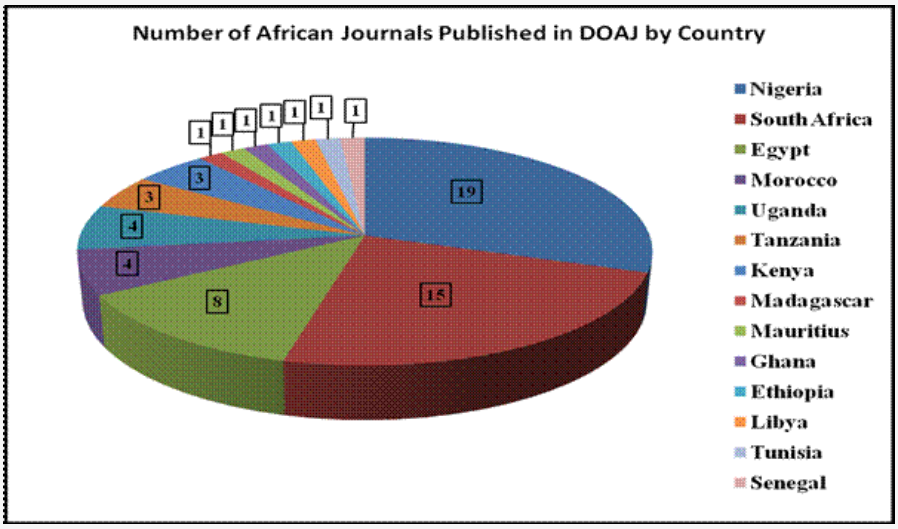

Figure 1: African journals published in DOAJ. Source: DOAJ, 2010

To track the usage of the DOAJ, I recorded the geocounter data on the DOAJ website for forty non-consecutive, random days in the months of December 2009 and January and February 2010. I recorded the daily data between the hours of 12 to 16 h U.S. Eastern Standard Time. I choose to compare the data with countries in LAC because of historical and political similarities, levels of development, ICT development, and population. The African population is roughly twice that of LAC which allowed for a convenient measurement comparison. In addition, Latin American, Caribbean, and African countries share common concerns of marginalization and inadequate access to means of production under globalization. Regions were defined based on the definitions used by the United Nations Population Division (2008).

DOAJ Use and Contribution: Results

Table 1 and Figure 2 show a comparison of the percentages between the number of journals coming from each world area, the usage of the DOAJ during the tracking period, and the percentage of regional population to world population. While SS Africa and North Africa combined are close to twice the population of LAC, their percentage of use of the OA resource (SS Africa – 1.6%; North Africa – 1.1%) and their production of OA content (SS Africa – 1.1%; North Africa -- .3%) is significantly lower than that of LAC (use – 11.3%; production – 18.7%). It is also striking that while both SS African and North African countries contributed a smaller percentage of journals to the DOAJ than their actual percentage of use of the service, the LAC countries production of OA journals was almost twice the percentage of their use of the service during the tracking period. This result implies that Christian's (2008) concern is in fact a real one, the objective of OA cannot be met if the African scholars are simply being "active consumers" while remaining "passive contributors". This appears to be primarily what is occurring with the DOAJ. In comparison, scholars in LAC countries appear to be both active consumers and contributors.

	Sub-Saharan Africa (SSA)	Non Sub-Saharan Africa (i.e. North Africa)	Latin America and Caribbean (LAC)	Rest of World
Percentage of Total World Population (2010)*	12.5	2.5	8.5	76.5
Percentage of Total DOAJ Use During Tracking Period	1.6	1.1	11.3	86
Percentage of Total DOAJ Journals Produced from Region (2009)**	1.1	0.3	18.7	79.9

Table 1: Comparison of population, DOAJ use, and production of DOAJ journals between SSA, North African, and LAC countries

Sources: *United Nations Population Division (2008). ** DOAJ (2010)

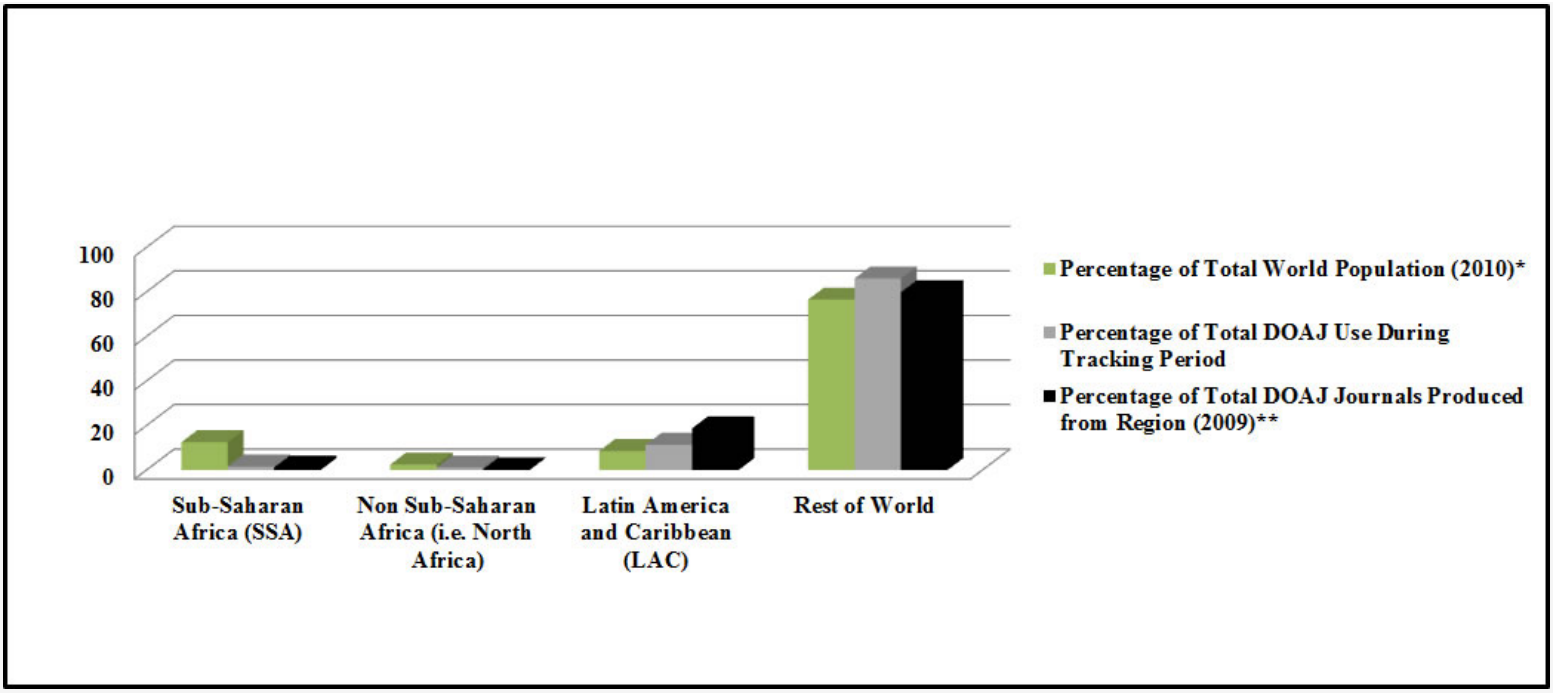

Figure 2: Graphical representation of comparisons in Table 1

A likely explanation for these differences between the regions is due to the discrepancies between the ICT levels of African and LAC countries. In March 2009, the International Telecommunication Union (ITU) presented the ICT Development Index (IDI) in response to requests made during the WSIS for benchmarking information society developments (ITU, 2009a). This tool is also being used as a method to monitor the digital divide between regions and countries. The IDI is a composite index which groups eleven indicators into three sub-indices: ICT infrastructure and access; ICT use and intensity of use; and the capacity to use ICTs effectively. Comparing the IDI scores for Africa and LAC (see table 2 and figure 3 below) point to a possible explanation of why the DOAJ is receiving more use from the LAC countries. The lowest IDI score for SS Africa (Niger at .82) is significantly lower than the lowest score for LAC (Haiti at 1.27). The Seychelles, which has the highest African IDI score at 3.6, does not come close to Argentina which has the highest IDI score for LAC at 4.12. Surprisingly, South Africa's score (2.7), one of the highest in SS Africa, is below both the median score (3.10) and the average score (2.99) for LAC countries. This points to just how serious and significant the digital divide is between Africa and LAC despite that both regions are considered part of the "Global South" and among developing nations. Table 3 below shows the DOAJ usage and 2007 IDI scores of individual African countries. Further nuanced analysis of these results is necessary (taking into account language, population, number of universities, etc.) to see what, if any, correlations can be found that will explain why some African countries are witnessing higher use of the DOAJ than others.

NORTH AFRICA*	IDI 2007	SUB-SAHARAN AFRICA**	IDI 2007	LATIN AMERICA AND CARIBBEAN***	IDI 2007
Mauritania	1.36	Niger	0.82	Haiti	1.27
Morocco	2.34	Chad	0.83	Nicaragua	2.03
Algeria	2.51	Guinea-Bissau	0.90	Guatemala	2.28
Egypt	2.54	Congo, Democratic Republic of the	0.95	Honduras	2.28
Tunisia	2.73	Burkina Faso	0.97	El Salvador	2.43
Libya	2.84	Eritrea	1.00	Bolivia	2.45
		Mozambique	1.02	Paraguay	2.52
		Ethiopia	1.03	Cuba	2.53
		Mali	1.12	Dominican Republic	2.65
		Tanzania	1.13	Ecuador	2.75
		Comoros	1.17	Mexico	3.09
		Malawi	1.17	Peru	3.11
		Rwanda	1.17	Colombia	3.25
		Uganda	1.21	Venezuela	3.34
		Benin	1.28	Costa Rica	3.41
		Madagascar	1.36	Panama	3.46
		Congo, Republic of the	1.37	Brazil	3.48
		Senegal	1.38	Trinidad and Tobago	3.61
		Nigeria	1.39	Jamaica	3.78
		Zambia	1.39	Uruguay	3.88
		>Cote d'Ivoire	1.41	Chile	4.00
		Cameroon	1.46	Argentina	4.12
		Zimbabwe	1.46		
		Lesotho	1.48		
		Gambia, The	1.49		
		Sudan	1.56		
		Kenya	1.62		
		Ghana	1.63		
		Swaziland	1.73		

		Namibia	1.92		
		Botswana	2.10		
		Gabon	2.14		
		Cape Verde	2.18		
		South Africa	2.70		
		Mauritius	3.45		
		Seychelles	3.60		

Table 2: Comparison of the ITU's ICT Development Index between North Africa, SS Africa, and Latin America and the Caribbean

Sources: *ITU (2009c). **ITU (2009a). ***ITU (2009b)

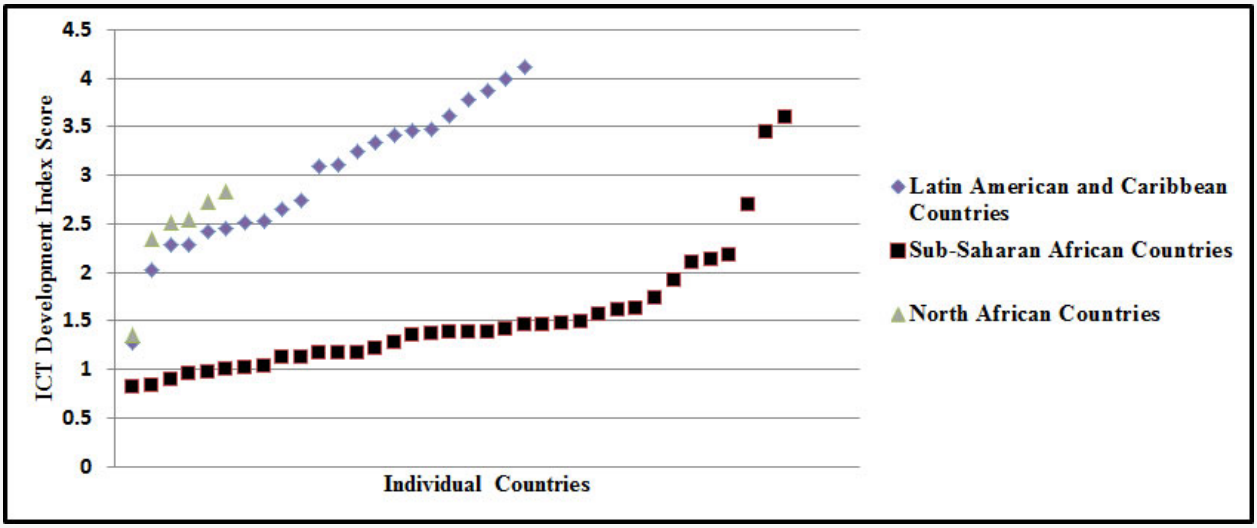

Figure 3: Graphical Representation -- Comparison of the ITU's ICT Development Index between North Africa, SS Africa, and Latin America and the Caribbean

Sources: ITU (2009c). ITU (2009a). ITU (2009b)

Country	Number of Times DOAJ Accessed During Tracking Period	ICT Development Index Score (2007)*
Algeria	425	2.51
Angola*	24	N/A
Benin*	10	1.28
Botswana	53	2.1
Burkina Faso*	17	0.97
Burundi*	2	N/A
Cameroon	55	1.46
Cape Verde*	17	2.18
Central African Republic*	1	N/A
Congo (DRC)*	8	0.95
Congo, Republic of the	3	1.37
Cote d'Ivoire	62	1.41
Djibouti*	1	N/A
Egypt	1514	2.54
Eritrea*	4	1
Ethiopia*	147	1.03
Gabon	2	2.14
Gambia, The*	2	1.49
Ghana	188	1.63
Kenya	284	1.62
Lesotho*	8	1.48
Liberia*	4	N/A
Libya	89	2.84
Madagascar*	15	1.36
Malawi*	29	1.17
Mali*	3	1.12
Mauritania*	3	1.36
Mauritius	177	3.45
Morocco	261	2.34
Mozambique*	47	1.02

Namibia	13	1.92
Niger*	6	0.82
Nigeria	905	1.39
Reunion*	8	N/A
Rwanda*	62	1.17
Sao Tome and Principe*	1	N/A
Senegal*	21	1.38
Sierra Leone*	3	N/A
South Africa	694	2.7
Sudan*	140	1.56
Swaziland	14	1.73
Tanzania*	255	1.13
Togo*	5	1.26
Tunisia	233	2.73
Uganda*	84	1.21
Zambia*	34	1.39
Zimbabwe	33	1.46
* Considered Least Developed Countries by the United Nations (source: UN-OHRLSS, 2010)		

Table 3: DOAJ Use and ICT Development Index Score for individual African countries

The African DOAJ use and participation results when compared with that of the LAC countries imply that the aspects of ICT development measured by the ITU's IDI score must improve in African countries if the hope and promise of OA is going to be achieved on the continent and if African scholars and communities are going to truly benefit from cultural rights and the scientific progress occurring both within and outside Africa.

Measuring African OA Accessibility in A&I Databases: Methodology

In addition to examining the levels of use and contribution to the DOAJ, I wanted to investigate other OA projects specific to African publishers and examine the extent to which these scholarly journals are being included in A&I databases. While OA journals can aid in rectifying the imbalances of information flows from North to South, they cannot make a substantial impact in reversing information flows unless the journals are being abstracted and indexed in the major sources scholars use to identify relevant research. Because most of these A&I sources are produced in industrialized countries and are prohibitively expensive for African institutions, I also wanted to investigate the extent to which the OA journals are being picked up by Google Scholar, the free search engine index for scholarly literature, which would be more likely to be used by African researchers as a way of identifying relevant literature – thus increasing South to South information flows. Since many scholars in industrialized nations are also becoming frequent users of Google Scholar's search capabilities, this may also make an impact on South to North flows.

To measure the indexing of the OA content from Africa, I used the journal lists of the following OA services: DOAJ (African titles), Bioline International, Sabinet, and OJP. I compared indexing between journals in these services and those in AJOL. I used the Ulrichsweb Global Serials Directory to determine the A&I sources for each journal title. Ulrichsweb is an authoritative source of bibliographic and publisher information for more than 300,000 periodicals of all types. I used the AJOL as a comparison point against models that are strictly OA because AJOL is currently a mixed-model of scholarly distribution; however, AJOL is increasingly supporting OA publishing as a viable model for its journal partners, and with its recent upgrade to Open Journal Systems 2.2.2 from the Public Knowledge Project, it will be offering all OA partner journals free hosting of the entire publishing work flow process in 2010 (Murray, 2008). During the study, I found that 17.6 % of the journals in AJOL had some OA content available. Bioline International is a not-for-profit scholarly publishing cooperative that provides OA to peer-reviewed research journals published in developing countries. The goal of Bioline International is to reduce the South to North knowledge gap in areas of health, biodiversity, the environment, conservation, and international development. The service itself it managed by scientists and librarians in a collaborative initiative between Bioline Toronto and the Reference Center on Environmental Information, Brazil. It not only contains African journals, but also journals from South America and Southeast Asia (Bioline, 2010). Sabinet, based in South Africa, has been in operation since 1983 and provides a wide range of products and services with the goal of providing information access, library support, and information management tools both within South Africa, other parts of Africa, and the United States (Sabinet, 2010). The Open Access Journal Collection is a relatively recent addition to the host of Sabinet services and is still in Beta mode at the time of this writing. And finally, OJP is a division of the African Online Scientific Information Services (AOSIS) Ltd company also based in South Africa. OJP was established in 2005 as an OA online publisher with the objective of becoming the leading OA scientific publisher in Africa. In addition to publishing their own journal titles, they offer a variety of OA support to other publications (OpenJournals Publishing, 2010). For the purposes of this study, I examined the five title lists and measured the number of titles not available from any commercial A&I source, the percentage not listed in Ulrich's, and those not available in Google Scholar

Measuring African OA Accessibility in A&I Databases: Results

The data revealed that the Bioline OA service fared the best across all categories in terms of accessibility (see figure 4 below). The African journals in DOAJ came in second in terms of accessibility. DOAJ, Bioline and OJP (all strictly OA services) as a group fared much better than the titles in AJOL. However, Sabinet, also a strictly OA service, fared worst of all in terms of commercial A&I titles accessibility. This was a surprising result; however, I hypothesize that this is due to the relatively recent release of the Sabinet OA collection. If we remove Sabinet from the findings, the OA publications are more accessible in commercial A&I services; however, the comparison of availability of the resources through Google Scholar does not reveal significant difference between DOAJ, Bioline, Sabinet and the AJOL sources. Why OJP had a higher percentage of titles not covered in Google Scholar is unclear and was an unexpected result, given the high rate of inclusion of other OA sources.

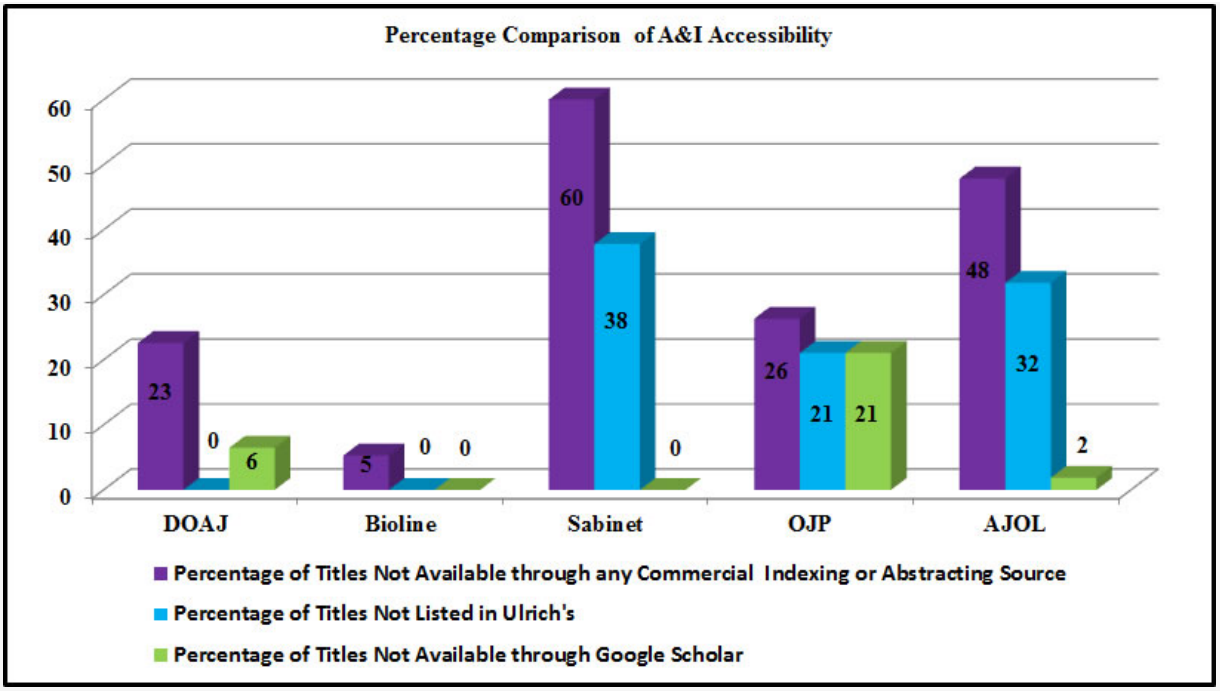

Figure 4: Percentage comparisons of access indicators

When I compared the average number of A&I sources per journal from each platform (see figure 5 below), all the OA sources with the exception of Sabinet fared better than those of AJOL, with Bioline and DOAJ revealing significantly more accessibility. Sabinet's poor results could again possibly be attributed to its recent emergence in OA publishing. I hypothesize that AJOL has a lower average number of A&I sources per journal because the purely OA sources are more easily accessible to commercial A&I companies.

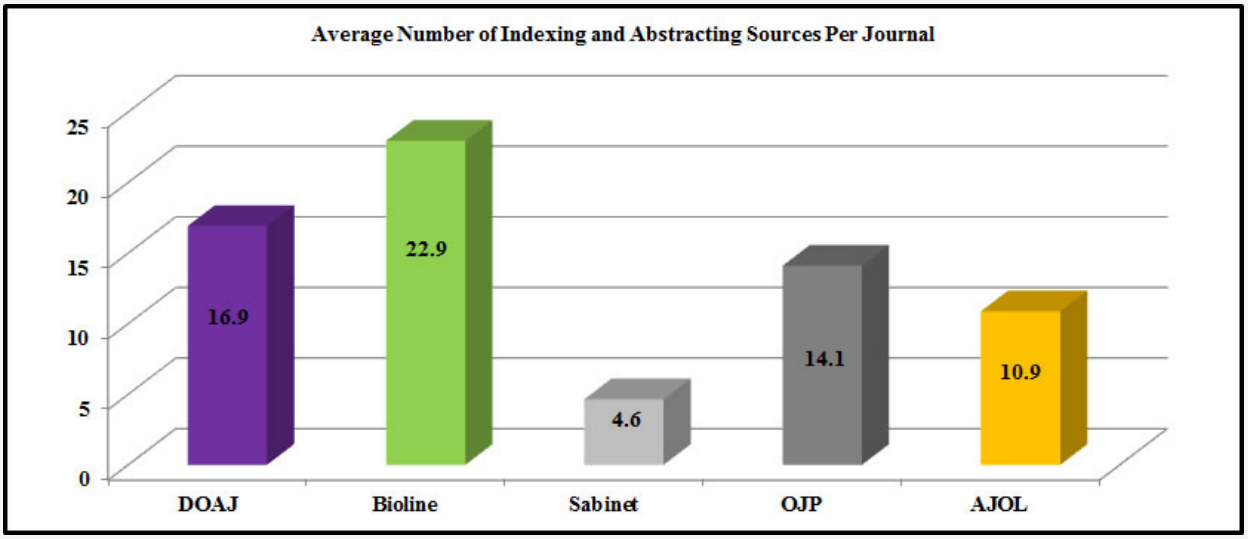

Figure 5: Comparison of the average number of A&I sources per journal across the five journal platforms

Discussion and Suggestions for Further Research

The results of this exploratory study indicate that, in SS Africa, there is a real danger of the dilemma that Christian (2008) highlighted, that OA will not reverse the flow of information from North to South unless economic and technological obstacles are addressed. Otherwise scholars in SS Africa may be active consumers but their contribution to the scholarship will remain passive. This is evident in the fact that the percentage of total DOAJ journals produced from the region was less than the percentage of use of the service. This is also evident in the comparison between the use and production of DOAJ journals in LAC against that of SS Africa. While the African continent has almost double the population of LAC, its use of the OA service during the study was only 22% that of LAC countries and African production of OA journals was only 7.5% that of LAC. I conclude that, because LAC has a higher ITU IDI rating, researchers in the region are able to be more active participants in the OA movement, and thus are contributing more significantly to reversing the inequitable flow of information from North to South. However, the results of the study also indicate that those OA journals produced *in* SS Africa have a better chance of being abstracted and indexed by commercial A&I services than those which are not OA – thus potentially aiding in the reversal of flow from South to North – if not necessarily from South to South.

Due to the limitations of this study, there are areas for further investigation that should be explored. The use data from the DOAJ was gathered for 40 days between December 2009 and February 2010. A longer study, and one that includes different periods of the year, would provide an important comparison. In addition, as a non-administrator of the DOAJ service, I only had access to that information presented via the geo-localization tool "geocounter". I was thus only able to see which regions and countries were visiting the site but not which journals they were visiting. This additional information would be very useful in examining whether scholars from African countries are using journals from other African or LAC countries (thus contributing to South-South information flows) or if they are primarily looking at journals and articles from researchers in the global North (thus continuing the traditional North-South information flow). Also, because neither Bioline, Sabinet nor the OJP have the geocounter enabled for their site, the information on usage was unavailable for their services. This additional information would help greatly in providing a comparison point for the DOAJ service. As AJOL moves to more OA journals, it would be very useful to track whether their rate of coverage in commercial A&I resources increases. Additionally, the data gathered concerning coverage of the OA journals in

Google Scholar was very raw information and did not examine the number of individual articles available from each journal. A more thorough and subtle analysis of the extent to which these OA journals are accessible via Google Scholar should be performed. And finally, since the study was concluded, the author became aware of academicjournals.org which is another OA service featuring several scholarly publications from the African continent. Examining the A&I coverage of these journals would give additional data points for comparison with those used in this exploratory study.

Conclusion: Intersections between human rights, cultural rights and OA African Scholarly Publishing

As Willinsky (2006) has boiled down the discussion of OA and human rights to this one statement, "At issue is who has a right of access to what is known" (p. 141), so too can we boil down the issue of cultural rights to this question, "Who has the right to take part in cultural life, who has the right to enjoy the benefits of science and its application, and who has the right to the protection of moral and material interests resulting from any scientific, literary, or artistic production of which he is the author?". Because the UDHR and the ICESCR address the rights of *all* persons, the answer to the second set of questions is "everyone".

This answer must then inform the answer to the first question. If subscription prices for scholarly journals are so exorbitantly priced that a huge portion of the world population in the global South cannot access them, then their right to benefit from science and its application is being curtailed. Additionally, the broader "cultural life" of the human community is virtually closed to them. Similarly, if researchers from the global North are doing research in African countries on African literary, artistic, or scientific developments (including indigenous knowledge) but are publishing their findings in venues that are not accessible to the peoples of the countries studied, then the third aspect of cultural rights mentioned above is being ignored. Finally, if a viable ICT infrastructure is developed, yet it remains that SS African researchers, students and community members are primarily using OA resources as consumers rather than as active participants, then the cultural rights expressed in the UDHR and the ICESCR are not being fully realized.

As the CESCR in their General Comment No. 21 (UN CESCR, 2009) emphasized, there are three interrelated main components of the right to take part in cultural life: participation, access, and contribution. Access without contribution or active participation is not the full realization of cultural rights. To truly benefit from OA as a fulfillment of cultural rights, the infrastructure and opportunity for both *consuming* and *creating* open access content must be more widespread throughout African communities. Lor and Britz (2010) have made a strong case for looking beyond an "information society" to a "knowledge society" in which the emphasis is on creation, distribution and use of information and knowledge in society rather than on the more limited focus on ICT in information processing and distribution. In defining this process of access to knowledge, Lor and Britz have identified three equally important dimensions, which they refer to as the "last Ms": the last Mile (physical infrastructure), the last Million (the political-economic, legal and ethical dimension), and the last Micron (the epistemological dimension). In doing so, they pose an important question:

> Let us imagine that worldwide there is widespread access to the Internet, the access to knowledge activists have marched around the WIPO Headquarters in Geneva seven times, blowing their rams' horns, and WIPO has caved in…What will be different? The affordability of certain forms of information will be greatly improved. The cost of accessing scholarly journals and educational texts etc. will come tumbling down. Will the lives of individuals and the livelihood of communities be improved? Not automatically. (p. 9)

In envisioning this hypothetical future and posing this question, they distinguish strongly between "access to information and the knowledge created by others" and "the creation and application of new knowledge by those who read and understand the published books and articles". This latter process is what is essential for the realization of a true knowledge society. The results of the exploratory study of usage and accessibility presented in this paper call attention to the importance of the "third M" – the epistemological dimension. While OA content on DOAJ and other platforms have facilitated the packaging, supplying, delivery and access of scholarship *to* African scholars, it has not yet made significant inroads in allowing for the facilitation, response, interaction, and growth *from* African scholars *to* the rest of the global scholarly community as it has in other regions such as LAC. It is this later aspect (facilitation, response, interaction, and growth) which Britz and Lor appropriately emphasize as essential for us (as information and library workers) to pay attention to if we are going to move from notions of an "information society" to the more meaningful "knowledge society" that is crucial for human development.

It is not merely enough to have access to information as presented in Article 19 of the UDHR. Full cultural rights must also be present if the full spectrum of human rights are to prevail. This requires that *all* are participating in cultural life (e.g. that publications in OA are not restricted to European languages or worldviews), that *all* are enjoying the benefits of scientific progress and the arts (not just those scientific and artistic research and creations that are generated from the global North but those from the global South as well), and that *everyone* is being protected from the moral and material interests resulting from scientific, literary, or artistic production rather than being exploited by outside researchers who then package the research and publish it in forums and products that are inaccessible to the people themselves. The cultural rights presented in Article 27 of the UDHR and Article 15 of the ICESCR are equally important for the achievement of full human rights. Without the observance and promotion of cultural rights, societies have but one leg on which to stand. The OA movement, if it can effectively transition from mere delivery of scholarship to the facilitation of creation of further OA content, can play a major role in the achievement of these cultural rights, and thus help societies and communities, in Africa and elsewhere, build a better future.

Note: This article is a revised and expanded version of a paper accepted for the XIXth Meeting of the Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL) 2010. Gaborone, Botswana, 6-9 December 2010.

Works Cited

Alemna, A A. (1996). *Issues in African librarianship.* Kaneshie, Accra: Type Co.

Antelman, K. (2004). Do open-access articles have a greater research impact? *College & Research Libraries, 65*(5), 372-382.

Baker, K. (2004). The information divide: Publishing and access issues. *Innovation, 29*, 24-31.

Bioline International. (2010). *Bioline International.* n.l.: Brazil: Reference Center on Environmental Information (CRIA). Retrieved from the Bioline International website: http://www.bioline.org.br/

Budapest Open Access Initiative (BOAI) (2002). *Budapest Open Access Initiative*. Retrieved from Budapest Open Access Initiative website: http://www.soros.org/openaccess/read.shtml

Christian, G. E. (2008). Open access initiative and the developing world. *African Journal of Library, Archives & Information Science, 18*(1), 1-11.

Conference on Open Access to Knowledge in the Sciences and Humanities. (2003). *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*. Berlin, Germany: Max Planck Digital Library. Retrieved from the Max Planck Digital Library website: http://oa.mpg.de/openaccess-berlin/berlindeclaration.html

Crow, R. (2009). *Income models for open access: An overview of current practice.* Washington, DC: Scholarly Publishing & Academic Resources Coalition. Retrieved from the Scholarly Publishing & Academic Resources Coalition [SPARC] website: http://www.arl.org/sparc/bm~doc/incomemodels_v1.pdf

Directory of Open Access Journals (DOAJ) (2010). *Directory of Open Access Journals: About*. Lund, Sweden: Directory of Open Access Journals. Retrieved from the Directory of Open Access Journals website: http://www.doaj.org/doaj?func=loadTempl&templ=about#background

Danofsky, S. (2005). *Open access for Africa : Challenges, recommendations and examples*. New York, NY: United Nations Information and Communication Technologies Task Force.

Donders, Y. (2007). The legal framework of the right to take part in cultural life. In Y. Donders & V. Volodin (Eds.), *Human rights in education, science and culture: Legal developments and challenges* (pp. 231-272). Aldershot, Hampshire, UK: Ashgate.

Dulle, F.W., Minish-Majanja, M.K., & Cloete, L.M. (2010). *Factors influencing the adoption of open access scholarly communication in Tanzanian public universities.* Paper

presented at the World Library and Information Congress: 76th IFLA General Conference and Assembly. Gothenburg, Sweden. Retrieved from the International Federation of Library Associations website: http://www.ifla.org/files/hq/papers/ifla76/138-dulle-en.pdf

Durrani, S. (2008). *Information and liberation: Writings on the politics of information and librarianship.* Duluth, MN: Library Juice Press.

Durrani, S. (2007). Politics of information and knowledge in Africa: The struggle for an information inclusive society in a globalized world. In A. Mcharazo & S. Koopman (Eds.), *Librarianship as a bridge to an information and knowledge society in Africa [IFLA Publications 124]* (pp. 47-70). Munchen: K.G. Sauer.

Eide, A. (2001). Cultural rights as individual human rights. In A. Eide, C. Krause, & A. Rosas (Eds.), *Economic, social and cultural rights: A textbook* (2nd ed.) (pp. 289-301). Dordrecht: Martinus Nijhoff.

Gbaje, E.S. (2010). *Open access journal publishing in Ahmadu Bello University, Zaria, Nigeria.* Paper presented at the World Library and Information Congress: 76th IFLA General Conference and Assembly. Gothenburg, Sweden. Retrieved from the International Federation of Library Associations website: http://www.ifla.org/files/hq/papers/ifla76/138-gbaje-en.pdf

Geovisite. (2010). *What is geolocation?* Retrieved from the Geovisite website: http://www.geovisite.com/en/index.php

Goldstein, J. (2008). Embracing "Open Access" in East Africa: A common internet infrastructure policy agenda for human security and economic development. *JPLA: Journal of Public and International Affairs 19*, 139-150.

International Telecommunication Union. (2009a). *Information society statistical profiles 2009: Africa*. Geneva, Switzerland: International Telecommunication Union. Retrieved from the International Telecommunication Union website: http://www.itu.int/ITU-D/ict/material/ISSP09-AFR_final-en.pdf

International Telecommunication Union. (2009b). *Information society statistical profiles 2009: Americas*. Geneva, Switzerland: International Telecommunication Union. Retrieved from the International Telecommunication Union website: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-RPM.AM-2009-E09-PDF-E.pdf

International Telecommunication Union. (2009c). *Information society statistical profiles 2009: Arab states*. Geneva, Switzerland: International Telecommunication Union. Retrieved from the International Telecommunication Union website: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-RPM.AR-2009-R1-PDF-E.pdf

Iwuji, H.O.M. (1990). Librarianship and oral tradition in Africa. *International Library Review*, *22*(1), 53-59.

Kaungamno, E. E., & Ilomo, C. S. (1979). *Books build nations (Vol. 1): Library services in west and east Africa.* London: Transafrica Book Distributors.

Lor, P.J. & Britz, J. (2010). To access is not to know: A critical reflection on A2K and the role of libraries with special reference to sub-Saharan Africa. *Journal of Information Science*, *36,* 655-667.

Lor, P.J., & Britz, J. (2005). Knowledge production from an African perspective: International information flows and intellectual property. *International Information and Library Review, 37,* 61-76.

Lwoga, E. T., & Chilimo, W. (2006). Open access and open source: Considerations for agricultural academic libraries in promoting collaboration and sharing of information and knowledge. *Quarterly Bulletin of the International Association of Agricultural Information Specialists, 51*(3/4), 177-185.

Masango, C. A. (2006). South African scholars' and commercial publishers' perceptions of open access sources. *Mousaion, 24*(2), 249-268.

McGoldrick, D. (2007). Culture, cultures, and cultural rights. In M. A. Baderin & R. McCorquodale (Eds.), *Economic, social and cultural rights in action* (pp. 447-473). Oxford: Oxford University Press.

Mchombu, K.J. (1982). On the librarianship of poverty. *Libri, 32*(3), 241-250.

Mostert, B.J. (1998). Community libraries: The concept and its application - with particular reference to a South African community library system. *International Information and Library Review, 30,* 71-85.

Murray, S. (2008). Moving Africa away from the global knowledge periphery: A case study of AJOL. *Africa: The Journal of the International African Institute, 2008 Bibliography,* vii-xxiv. doi: 10.1353/afr.0.0146

Nwagwu, W. E., & Ahmed, A. (2009). Building open access in Africa. *International Journal of Technology Management, 45*(1-2), 82-101.

Odi, A. (1991). The colonial origins of library development in Africa: Some reflections on their significance. *Libraries and Culture*, *26*(4), 594-604.

OpenJournals Publishing. (2010). *OpenJournals Publishing: Unlocking journal content. Welcome.* Cape Town, South Africa: African Online Scientific Information Services Ltd. Retrieved from the OpenJournals Publishing website: http://openjournals.net/

Paulos, A. (2008). Library resources, knowledge production, and Africa in the 21st century. *International Information and Library Review*, *40*, 251-256.

Poppeliers, N.T. (in press). Cultural rights and library development and discourse in Sub-Saharan Africa: Is the colonial legacy still alive?. In J.B. Edwards & S.P. Edwards (Eds.), *Beyond Article 19: Libraries and Economic, Social, and Cultural Rights*. Westport, Conn.: Library Juice Press.

Preston Jr., W., Herman, E. S., & Schiller, H. I. (1989). *Hope & folly: The United States and UNESCO, 1945-1985.* Minneapolis: University of Minnesota Press.

Public Library of Science (2001). *Open letter to scientific publishers.* Retrieved from the Public Library of Science [PLOS] website: http://www.plos.org/about/letter.php

Raseroka, K. (2006). Access to information and knowledge. In R. F. Jørgensen (Ed.), *Human Rights in the Global Information Society* (pp. 91-105). Cambridge, MA: MIT Press.

Sabinet. (2010). *About Sabinet – Overview.* Centurion, South Africa: Sabinet. Retrieved from the Sabinet website: http://www.sabinet.co.za/?page=overview

Sithole, J. (2007). The challenges faced by African libraries and information centres in documenting and preserving indigenous knowledge. *IFLA Journal 33*(2), 117-123.

Sturges, P., & Neill, R. (1998). *The quiet struggle: Information and libraries for the people of Africa.* London: Mansell.

Suber, P. (2010). *Timeline of the open access movement*. Boston, MA: Open Access Directory. Retrieved from the Open Access Directory website: http://oad.simmons.edu/oadwiki/Timeline

Suber, P. (2007). *Open access overview*. Retrieved from Peter Suber's website: http://www.earlham.edu/~peters/fos/overview.htm

Suber, P. (2004). *A very brief introduction to open access.* Retrieved from Peter Suber's website: http://www.earlham.edu/~peters/fos/brief.htm

Suber, P. (2003). *Bethesda statement on open access publishing*. Retrieved from Peter Suber's website: http://www.earlham.edu/~peters/fos/bethesda.htm

United Nations Educational, Scientific and Cultural Organization (UNESCO), General Conference, Thirty-third session 3-21 October 2005. (2005). *Convention on the protection and promotion of the diversity of cultural expressions* (UNESDOC. CLT-2005/CONVENTION DIVERSITE-CULT REV). Retrieved from United Nations Educational, Scientific and

Cultural Organization website: http://portal.unesco.org/en/ev.php-URL_ID=31038&URL_DO=DO_TOPIC&URL_SECTION=201.html

United Nations Educational, Scientific and Cultural Organization (UNESCO) & International Federation of Libraries Association [IFLA]. (1994). *Public Library Manifesto*. Paris, France: UNESCO. Retrieved from UNESCO website: http://portal.unesco.org/ci/en/ev.php-URL_ID=4638&URL_DO=DO_TOPIC&URL_SECTION=201.html.

United Nations, Economic and Social Council, Committee on Economic, Social and Cultural Rights (UN CESCR), Forty-third session 2-20 November 2009. (2009). *General comment no. 21: Right of everyone to take part in cultural life (art. 15, para. 1 (a), of the International Covenant on Economic, Social and Cultural Rights)* (UN doc. E/C.12/GC/21). Retrieved from Office of the United Nations High Commissioner for Human Rights website: http://www2.ohchr.org/english/bodies/cescr/comments.htm

United Nations, Economic and Social Council, Committee on Economic, Social and Cultural Rights (UN CESCR). (1991). *Revised general guidelines regarding the form and contents of reports to be submitted by states parties under articles 16 and 17 of the International Covenant on Economic, Social and Cultural Rights : . 17/06/91.* (UN doc. E/C.12/1991/1). Retrieved from Office of the United Nations High Commissioner for Human Rights website: http://www.unhchr.ch/tbs/doc.nsf/(Symbol)/E.C.12.1991.1.En?Opendocument

United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLLS). (2010). *Least developed countries: Country profiles.* Retrieved from UN-OHRLSS website: http://www.unohrlls.org/en/ldc/related/62/

United Nations Population Division. (2008). *World population prospects: The 2008 revision population database*. New York, NY: United Nations Population Division. Retrieved from the United Nations Population Division website: http://esa.un.org/unpp/index.asp?panel=1

United Nations, World Summit on the Information Society (UN WSIS). (2003). *Declaration of Principles: Building the Information Society: A Global Challenge in the New Millennium* (WSIS-03/GENEVA/DOC/4-E 12). Retrieved from United Nations website: http://www.un-documents.net/wsis-dop.htm

United Nations General Assembly. (1966a). *International covenant on civil and political rights*. Retrieved from Office of the United Nations High Commissioner for Human Rights website: http://www2.ohchr.org/english/law/ccpr.htm

United Nations General Assembly. (1966b). *International covenant on economic, social and cultural rights*. Retrieved from Office of the United Nations High Commissioner for Human Rights website: http://www2.ohchr.org/english/law/cescr.htm

United Nations General Assembly. (1948). *Universal Declaration of Human Rights*. Retrieved from the United Nations website: http://www.un.org/en/documents/udhr/

Willinsky, J. (2006). *The access principle: The case for open access to research and scholarship*. Cambridge, Mass: MIT Press.

Yontz, E., & Fisher, J. R. (2007). Are they being indexed? Tracking the indexing and abstracting of open access journals. In B. R. Bernhardt, T. Daniels, & K. Steinle (Eds.), *Charleston Conference proceedings 2007* (pp. 126-130). Westport, CT: Libraries Unlimited.