

The open access movement or “edemocracy”¹: its birth, rise, problems and solutions²

Françoise Salager-Meyer

Universidad de Los Andes (Venezuela)

francoise.sm@gmail.com

Abstract

We start with a definition of the open access (OA) movement and the reason for its birth – that is, the 1980’s serials’ crisis. We then present and explain the two main OA roads (the Gold OA and the Green OA roads) as well as the target of the OA movement. Key concepts related to the OA movement are also explained, such as “institutional repository”, “self-archiving”, “institutional mandate” and “directory of OA journals”. We also examine the rise and the benefits of the OA movement and give suggestions as to what universities, university students and researchers worldwide could do to promote the OA movement and make science truly accessible to all.

Keywords: open access, scientific research, democracy, institutional repository, mandate.

Resumen

El movimiento de acceso abierto o la “e-democracia”: nacimiento, crecimiento, problemas y soluciones

Empezamos con una definición del movimiento “acceso abierto” (AA) y la razón por la cual nació. Luego, presentamos y explicamos en qué consisten las dos principales vías del AA (la vía dorada y la vía verde) así como el objetivo de dicho movimiento. Conceptos claves, tales como “repositorio institucional”, “auto-archivo”, “mandato institucional” y “directorio de revistas en AA”. También examinamos el crecimiento y los beneficios del movimiento AA, y damos sugerencias para que las universidades, los estudiantes universitarios y los investigadores ayuden a promover el movimiento AA y hacer que la ciencia sea verdaderamente universal.

Palabras clave: acceso abierto, investigación científica, democracia, repositorio institucional, mandato.

1. Preamble

The idea of creating a Spanish Association of Languages for Specific Purposes (AELFE) (the name was later changed to “European” Association, but the acronym remained the same) arose in the 1985 and 1986 Congresses of the Spanish Association of Applied Linguistics, but it was actually created during the first Language for Specific Purposes Congress that took place in Alcalá de Henares in November 1991. During the second AELFE General Assembly, the participants decided to launch a journal where the Association members could publish their research results. This is how *Ibérica* was born. At first, the researchers publishing in the journal were all based in Spain, but, because the journal had progressively acquired an excellent reputation, the proportion of contributors outside Spain became greater and greater to the point that the international visibility of the journal is now very well-established. But there is one important thing that is worthwhile mentioning here: *Ibérica* has become “Open Access” (OA) and all its issues, from the very first one, are today freely available online. It is because *Ibérica* undoubtedly represents an example to be followed that I decided to write about the OA movement, its birth, importance, rise, problems and solutions.

2. Definition

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the worldwide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge. (Budapest Open Access Initiative (BOAI), Open Society Institute, 2001: 1)

The above statement is a vision, a “subversive” (Harnad, 1994) or “controversial” (Kenneway, 2011) model proposed in 1994, written by OA activists to encourage scholarly authors to amend their publishing practice so as to enable the free distribution over the Internet of the research output usually published in peer-reviewed journals and conference proceedings. For the purpose of this paper, I will adopt Drott’s (2006) definition according to which OA is a concept, a movement and an economic model that refers to work that is freely available to users via the Internet without financial cost and without economic, legal or technical barriers other than those intrinsic to the Internet. Users can thus freely read, download, copy, distribute, print, search or link to the full text of OA works. It is expected that the integrity of authors’ work will be respected and that authors’ right will be correctly acknowledged and cited.

The concept of OA has been around for several decades (it celebrated its tenth anniversary on February 14th 2012), but it has only really gained traction in the past decade, particularly as it has begun to gain the support of governments, institutions and research funders. Today, OA is at the forefront of discussions about scholarly communications in the digital age. Open Access is taught at universities, debated in Parliaments, embraced or opposed by publishers. This rise to prominence is all the more remarkable when considering how ambitious the Budapest OA Initiative (Open Society Institute, 2001) was, as it sought to change an \$8 billion industry (further details in the next sections).

3. Reasons for the birth of the OA movement: the 1980’s serials’ crisis

In the 1980’s, scholarly journals (especially in Science, Technology and Medicine – or STM for short) were subject to rapid price escalations without any clear and consistent correlations between price, quality and impact. Even the most well endowed research libraries could not afford to purchase all of the content required by their faculty and students because the volume of published knowledge is always growing exponentially and will always grow faster than any library budget. It is indeed estimated that professional literature doubles every 12 years (Stix, 1994).

Let’s examine a few telling figures. According to a study by the Association of Research Libraries (cited in Keefer, 2007), serials pricing rose by 273%

between 1986 and 2004, as compared to the overall inflation rate of 73%, and in 2005, the average price of an STM journal was 178% more than that in the 10 previous years (for further details, see URL: <http://www.arl.org/stats/arlstat/graphs/2004/monser2004.pdf>).

The price of scholarly journals published by scientific societies and by universities also increased tremendously in the 1980's, over 200%, although prices were initially lower (Goodman, 2004; Look, 2004). Thus, at the outset, we have a tension between the aim of two core groups of actors, authors and publishers, in scholarly publishing: one group interested in maximizing access and readership, and the other in maximizing profit.

The situation is particularly critical for small colleges and universities and unacceptable for institutions in the developing world with severely limited or no budget. According to the World Health Organization (WHO), for example, of the 75 countries with a gross domestic product (GDP) less than USD 1,000, 56% of the medical institutions have not subscribed to any scientific journals in the past five years, and over 34% of medical institutions subscribed to an average of two journals per year. Unsurprisingly, researchers in developing and transition countries rank access to the research literature as one of their most pressing problems (Aronson, 2004).

The widespread sharing of research results should thus be an essential component of governments' investment in science. Faster and wider sharing of knowledge fuels the advancement of science and, accordingly, the return of health, economic, and social benefits back to the public who, with its taxes, has supported the research. Fortuitously, just as journal prices were becoming unbearable, the Internet emerged to offer an alternative.

4. The two main OA roads

There are two distinct ways of obtaining open accessibility to scientific research results: "Gold OA" and "Green OA". It is very important to keep that distinction in mind when talking about OA. The adoption of either or both routes leads to a transformation in the means of disseminating research output across the globe.

(1) Gold OA has been defined as journal publishing operating with a business model not based on subscription, but rather on either publication

charges where the author (or an organization on behalf of the author) funds the publishing costs or on subsidy.

The Gold OA category can be subdivided based on the degree or extent of journal content availability. The most basic form of Gold OA is the "direct OA" (62% of all Gold OA) where the whole journal is published Open Access without any limitations. Papers are then freely accessible online for all immediately upon publication, but at a very high price. For example, direct Gold OA journals charge between USD 1,500 to USD 3,000 for publishing a paper in Molecular Biology and High-energy Physics, a discipline that has reached 100% OA years ago. The funding required to make a journal direct Gold OA derive from article-processing charges, such as the maintenance of a functioning mechanism for peer review, composition, web hosting and archiving. It is important to mention, however, that direct Gold OA journals that charge publication fees waive them in cases of economic hardship, and OA journals with institutional subsidies tend not to charge publication fees (for example, *Ibérica*).

Other Gold OA journals keep the most recent content accessible only to paying subscribers, but as time passes, the embargo – typically 6 to 12 months³ – is lifted and the content is made available to all. This variant is called "delayed OA" and accounts for 14% of all Gold OA.

Sometimes, an author or the author's institution can pay for an article to be made freely available in an otherwise subscription-based journal – that is, some of the articles in a journal are OA and some are not. This is referred to as "hybrid OA" or "author-sponsored road" which makes up 24% of all Gold OA. The choice is the author's.

(2) The Green road consists in self-archiving authors' work in institutional repositories or personal websites. "Self-archiving" involves depositing a free copy of a digital document – be it a manuscript, a pre-print version of a manuscript accepted to be published in a scientific journal, or the actual published version itself – on the World Wide Web in order to provide open access to it. It is estimated that 11.9% of all scholarly articles published in 2008 were available through some form of Green OA (Laakso et al., 2011).

An "Institutional Repository" is an online locus for collecting, preserving, and disseminating – in digital form – the intellectual output of an institution, particularly a research institution. Repositories, then, are archives of academic-scientific material available on the web containing articles published by researchers of a given institution or from a given field of

knowledge (Chan, 2004).⁴ For a university, this would include materials, such as research journal articles, before (pre-prints) and/or after (post-prints) undergoing peer review, and digital versions of theses and dissertations.⁵ The permission for self-archiving should be granted by journal publishers.

In short, what is called a Green publisher is a publisher that endorses immediate self-archiving of their authors' accepted final drafts (but not the publishers' version of record), free for all on the web, immediately upon acceptance for publication. "That's all it takes for a publisher to be Green and to be on the side of the angels", ironically remarked Steven Harnad (BOAI Forum email, June 24 2011, available at URL: <http://www.soros.org/openaccess/forum>).

However, if a journal adopts the Green road to OA, allowing some form of self-archiving by the authors, this does not mean that articles published in it are actually deposited or self-archived. As a matter of fact, just 10% to 20% of the articles in Green journals are self-archived (Harnad et al., 2008).

A complete OA access (100%) could be an almost immediate reality by means of the Green OA road/self archiving (Harnad et al., 2008; Harnad, 2011b; Miguel et al., 2012). The greatest obstacle to OA is the belief that OA is equivalent to the Gold road – that is, to publishing in OA journals. According to the Alma Swan's (2006) survey, 95% of researchers agree with OA, but will only self archive if they are obliged to do so (81% willingly, 14% reluctantly) via an institutional mandate. Hence, the solution for a 100% OA is institutional mandates (more on this point later).

5. Target of the OA movement

The target of the OA movement is the 5,000 scientific articles that are published daily (89% in English) or the c. 2.5 million peer reviewed scientific articles that are published yearly in our planet's c. 25,000 peer reviewed research journals across all scientific and scholarly disciplines in all languages the world over (URL: <http://www.ulrichsweb.com/ulrichsweb/>). To a lesser extent, the OA's target is made up of software, videos, audios, but never royalty-producing literature – that is, books and textbooks that are still written with the (slender) hope of some royalty income, novels, monographs, etc. An exception is Springer, a leading publisher in Europe, especially in Germany and The Netherlands, that publishes about 2,000 scientific journals and more than 7,000 books each year. In August 2012, indeed, Springer expanded its

OA program by offering full OA for the books it publishes across all disciplines⁶. It should be reminded that Springer acquired BioMedCentral in 2008, making it one of the world’s largest OA publishers.

Regarding the 25,000-30,000 peer-reviewed research journals I mentioned above, the trouble is that only a quarter of them is Gold OA, and that the majority of leading scientific journals – that is, the ones with the highest quality standard – are not OA journals. A study conducted by the Pontificia Universidad Católica de Valparaíso (2009), Chile, found that, of the total number of journals registered under the *Journal Citation Reports, Science and Social Sciences Editions* (Thomson Reuters), just 5% are Gold OA.

Björk, Roos, and Lauri (2008) estimated that in 2006 the total number of articles published was approximately 1,350,000. Of this number, 4.6% became immediately openly available (Gold), and an additional 3.5% were so after an embargo period of typically one year (delayed Gold). Moreover, usable copies of 11.3% could be found in subject-specific institutional repositories or on the home pages of the authors (Green access/self-archiving). Thus, the total OA was 19.4%. A breakdown by discipline showed that in the Social Sciences, Arts and Humanities, 17% of articles were OA *versus* 25.9% in Earth and Environmental Sciences which are noteworthy for their use of self-archiving, and, as I said before, 100% in Physics.

6. The rise of the OA movement

6.1. Celebrations

In October 2008, the “day of the OA movement” was celebrated with the participation of 120 universities in 27 countries. In October 2009, the “week of the OA movement” was celebrated with the participation of 200 universities in 49 countries. In October 2011, the 4th year of the event was celebrated, and it will be celebrated this year in October 2012.

6.2. The Directory of Open Access Journals (DOAJ) in all disciplines and all languages

To increase visibility and promote the use of Gold road journals – those that do not charge readers and their institutions for access – the Directory of Open Access Journals (DOAJ) was created (URL: <http://www.doaj.org>). It is the most comprehensive and detailed index of OA journals available today

that takes in all the international journals that ascribe to the OA movement, “a number that is growing by leaps and bounds” (Miguel et al., 2012), from 1,400 titles in early 2005 to 5,138 as of June 2010, 7,500 titles as of March 2012 and 8,098 in September 2012. Yet, as I said before, these 8,098 OA journals represent 25% only of the total number of academic-scientific peer-reviewed research journals currently put out worldwide (Ulrich’s International Periodicals Directory 2010, cited in Miguel et al., 2012). Hence, 75% of all journal articles (and almost 100% of the top journals) can only be accessed by researchers whose institutions can afford to subscribe to the journals in which they are published. The problem is that no institution can afford to subscribe to all or most journals, and because of the high and rising costs of journal subscriptions, most institutions can only afford to subscribe to a small and shrinking number of them.

In the field of linguistics, 199 journals are at present (September 17th, 2012) OA: the only high-quality LSP journal that is OA is *Ibérica*. Other pedigreed LSP-related journals, such as *English for Specific Purposes*, *Journal of English for Academic Purposes*, *Teachers of English for Speakers of Other Languages Quarterly*, *Applied Linguistics*, *Journal of Second Language Writing*, etc. are not OA.

6.3. The Directory of Open Access Repositories (DOAR)

The worldwide situation as far as OA repositories are concerned is as follows: in 2007 there were 830 repositories worldwide; in 2009 that number jumped to 1,300 (about 250 new ones per year), and in September 2012, their number reached 2,406. Table 1 shows more detail.

Continents	No. of countries	No. of OA repositories	Examples
Africa	17	58	South Africa = 23
Asia	26	484	Japan = 104 China = 79 India = 85
Europe	33	1,041	UK = 229 Spain = 114 France = 67
North America	11	522	USA = 410 Mexico = 24
Oceania	4	82	Australia = 61 New Zealand = 18
South America	9	219	Brazil = 105 Argentina = 24 Venezuela = 14
Total	100	2,406	

Table 1. Worldwide Registry of Open Access Repositories (data extracted from URL: <http://roar.eprints.org/cgi/search/advanced> [03/09/12])

This means that in three years, we have witnessed a twofold increase in the number of OA repositories worldwide. Forty four percent of them are located in Europe, 21.7% in North America, and 82.6% are institutional. As for the language in which they are written, 72% are in English, and 11.4% in Spanish, the second most frequent OA repository language.

6.4. Worldwide situation of institutional repository mandates

As of September 2012, according to the Registry of OA Repositories Mandatory Archiving Policies (ROARMAP), out of a total of 429 OA repository mandates worldwide (see Table 2 for their worldwide distribution), 190 (44%) are (multi- or sub-) institutional mandates, 93 (22%) are thesis mandates, and 53 (12%) are funder mandates. The remaining 22% correspond to either unspecified or proposed mandates.

Continents	No. of countries	No. of repository mandates	Examples
Africa	4	10	South Africa = 5
Asia	8	27	China = 9 China = 7 Japan = 1
Europe	22	235	UK = 53 Spain = 14 France = 11
North America	2	103	USA = 58 Canada = 25
Oceania	2	34	Australia = 31 New Zealand = 3
South America	16	16	Brazil = 4 Colombia = 4 Argentina = 2 Venezuela = 2
International		4	CERN (European Organization for Nuclear Research) Wellcome Trust
Total	52	429	

Table 2. Worldwide Registry of Open Access Repository Mandates (data extracted from URL: <http://roarmap.eprints.org/> [03/09/12])

The first mandate was created in the year 2000 at the University of Southampton, School of Electronics and Computer Sciences. The most important ones are, of course, in STM disciplines where research is heavily funded. We can cite, for example, the NIH (National Institute of Health, UK), the Max Plank Institute (Germany), the Research Council in the UK, the National Institutes of Health in the USA (PubMed Central), the European Research Council, the Canadian Institutes of Health Research,

Harvard University, MIT (Massachusetts Institute of Technology), and the Wellcome Trust (UK).

Regarding the present situation in Spain, the country has 14 repository mandates (11 of them are institutional), but an Act of Parliament called *Ley de la Ciencia, la Tecnología y la Información* (“Science, Technology and Innovation Act”) voted in May 12, 2011, urges researchers to deposit their research papers produced with public funding in institutional digital OA repositories. There is a national repository mandate nowadays in Spain. There is also a Bill in Argentina on the creation of a digital institutional repository mandate for all publicly-funded research.

However, the fight for OA has not yet been won. Indeed, on December 16th 2011, a Bill (called the “Research Work Act”) that contained provisions to prohibit OA mandates for federally funded research and to effectively revert the NIH’s Public Access Policy (that requires taxpayer-funded research to be freely accessible on line) was introduced to the US Congress. If enacted, the Bill, backed by traditional publishers, would severely restrict the sharing and dissemination of scientific data. Similar bills were introduced in 2008 and 2009, but have not been enacted since.

What is more, in spite of the fact that the vast majority of research activities is conducted within universities, and that OA is a “win, win, win” situation for students, researchers and readers (see Section 7 below), only 0.007% of the world’s universities have mandates (153 over a total of about 17,000 universities in the world have such mandates). This led Steven Harnad (2008) to say that “The world’s universities are OA’s sleeping giant”, precisely because they are not aware of that “win, win, win” situation.

7. Benefits of OA

Why should we expect authors to make their work OA? There is the altruistic vision espoused in the definition of OA by the Budapest Open Access Initiative (see Introduction of this paper) and many others, but also there are arguments that increased access to their research output may potentially increase the use of their work, its visibility, and therefore its impact and citations, especially for higher quality, hence more citable, articles (Lawrence, 2001; Brody, Harnad & Carr, 2006; Gargouri et al., 2010; Swan, 2010; Hitchcock, 2011; Kenneway, 2011). Eysenbach (2006), for example, taking into account the number of authors, the country of origin and the discipline,

found that OA articles were cited twice as much, and Brody and Harnad (2004) and Harnad (2008) have shown that OA can increase citations from 25% to over 250%.

A caveat is in order here: whilst Gold OA has been shown to increase “usage”, the issue about “citation” increase is controversial. Some studies, as those mentioned above, do point out to a decisive increase in the number of citations, while others (for instance, Davies & Walters, 2011; or Miguel et al., 2012) are not as categorical. Many full OA journals indeed are young journals that do not have the same profile or impact factor than those of their traditionally established competitors, but this does not reflect their future influence. Miguel et al. (2012) point out, for example, that paper quality is a more important determinant than OA, whilst Craig et al. (2007) argue that the large citation effects reported in prior studies are simply artefacts of improper analysis (mainly methodological flaws) and not the result of a causal relationship.

Be that as it may, OA also increases the potential to collaborations (Kennan, 2011; Kenneway, 2011) as well as the “social value of science”. By “social value of science”, I mean that research is published to be accessed, used, applied and built upon in further research. Research is done by researchers, for uptake by researchers, for the benefit of the public that funds that research, including those whose work or personal interest depend on having access to the global pool of scientific knowledge. As Dickson (2011: 3) asserts, “putting this social value of science into measurable terms is much more difficult than the relatively simple calculations of citation rates”.

OA also helps to publicize institutions’ research strengths. For publishers, open access brings maximum visibility, increased readership and impact for the contents; it means that a greatly improved dissemination service is being provided for research (Harnad, 2011a). It is interesting to mention here that the latest university ranking (available at URL <http://www.webometrics.info/>) for the first time does not only take into consideration universities’ academic and research performance, prestige and international visibility, but also their commitment to OA policies. An interesting move forward.

Last but not least, OA also enhances the flow of knowledge between North and South and also between South and South, but the digital divide still keeps billions of people offline, including millions of serious scholars working in heavily under-funded research institutions.

8. What can university students do to promote OA?

University students and junior researchers can help improve the OA situation even further. They can indeed require that their universities adopt the OA model, and they can make pressure upon their governments so that the national research centers that fund research require the products of that research to be OA (Green road/self-archive). They can also convince their professors 1) to support the OA movement; 2) to publish in Gold OA journals or in journals whose publishers back up the Green road to OA; and 3) to self-archive their research output in their institutional repository or in their personal homepage.

As Kennan (2011) points out, the vision of a freely available scholarly corpus has led to the increasing proliferation of institutional repositories. However, OA content in these repositories is not increasing at the same rate. Adoption of the vision and the technology is slow, not among the institutions developing them, but slow to gain traction among academics (Thomas & McDonald, 2007). The reasons researchers are so loathe to deposit their work in international repositories have prompted a plethora of studies, most of them based on surveys, some on interviews, some analyzing repository content (Houghton, Steele & Henty, 2004; Nicholas, Jamali & Rowlands, 2006; Jantz & Wilson, 2008). These studies have shown that in spite of the improvements mentioned in the previous sections of this essay, what we observe, worldwide is a generalized “inertia”. That inertia syndrome even has a name: Stevan Harnad (2006) calls it “Zeno’s paralysis”⁷ or the 34-headed monster, a list of 34 groundless psychological reasons or phobias why not to self-archive.

Let me give just a few of them, all spurious, but persistent and recurring. We can mention:

- the lack of cooperation from the researchers themselves;
- their indifference;
- lack of knowledge about OA;
- “center” scholar’s lack of awareness of and/or indifference to the immense difficulties scientists from developing countries have to face in order to find the appropriate bibliography for conducting their research (and this is just one of their difficulties, see section 10 below);

- fear of plagiarism;
- fear that plagiarism be discovered (!);
- the excuse that they have no time to self-archive – according to Carr and Harnad (2005), it takes 6 to 10 minutes only to self-archive a paper;
- fear that OA will violate copyrights;
- fear that OA will destroy scholarly journals; and
- fear of bypassing peer-review.

The actors working against OA indeed proclaim that peer review and quality will suffer. Kennan (2011) points out that there is no evidence yet for this in the disciplines that are enacting OA. Indeed, Green OA, through repositories, is specifically designed to work in conjunction with the existing traditional publishing network. If a university has an institutional repository, then this is a good way for researchers to showcase their research, and for the university to showcase the full breadth of its research.

Factors such as age, professional status, field of study, type of research, and nationalities can also influence the degree to which authors accept or reject OA (Keefer, 2007). Because of these various “reasons” and according to calculations by Harnad (2006), by 2020 only about a quarter of scientific articles will be freely available.

9. How to overcome that inertia?

There are several possibilities:

- 1) Raise awareness about OA through education campaigns, writing essays, and training workshops, emphasizing the various advantages of OA, not only the greater number of citations, but also the greater impact, wider access and visibility and long-term preservation of research.
- 2) Help authors to self-archive. In that sense, librarians have a major role to play. According to the *IFLA World Report 2010* (Bothma, 2010), the vast majority of library associations support OA.
- 3) Install stimulation and compliance policies or cash rewards.

But Sale’s study (2006) has unfortunately shown that at most these extra inducements only increase the deposit rate to about 30%. Thus, the formula

for change and the cure for Zeno's paralysis is 100% requirement (mandate, see Section 6.4 above). This is possible if the major players are convinced of the benefits OA brings, and if scholars, the world over, stop publishing in journals that do not permit their peer-reviewed post-prints to be OA. As Harnad (2011b) emphatically puts it, researchers' institutions and funders need to mandate OA self-archiving as a natural extension of their existing publish or perish mandate, upgraded for the online era, as a growing number of institutions (including Harvard, MIT, NIH, UK Researcher Councils and over 200 other institutions and funders worldwide) are already doing. Indeed, without a mandate, the OA message is ambiguous. It does not appear as if the university has unconditional support for OA or its own institutional repository. An institutional mandate or policy promoting OA signals the university's support for OA to the scholarly corpus. It flags the centrality of research and access to that research as part of that university mission.

10. Epilogue and latest developments

It is hard to argue that research, often funded out of the public purse, should not be a public good, and should not be equally accessible to rich and poor. I hope I have made clear here that OA access to research maximizes research access and thereby also research impact, thus making research more productive and effective and increasing its social value. In other words, OA opens the door to some hope and help correct some inequalities between center and periphery as far as access to information is concerned. As Kennan (2011: 312) emphatically points out: "OA is a powerful vision that is congruent with the ideals of research and scholarship".

Morris (2007), from the Association of Learned and Professional Society Publishers, posits that change is inevitable and resistance to change is futile. Repositories and OA are only the beginning of potential changes to scholarly publishing enabled by technologies. Keefer (2007: 17) echoes this opinion by asserting that "the road to OA through the Green Road may be slow and with obstacles, but it is inevitable."

Mandates, both institutional and funder, are growing apace. For the foreseeable future at least, OA, institutional repositories and mandates will become an increasingly prevalent part of the scholarly landscape, asserts Kennan (2011).

Regarding the situation in developing countries, Karen Shaschock cogently reminds us (EASE Forum, May 30 2011, available at URL: <http://www.ease.org.uk/>) that, in these parts of the world, researchers not only have to deal with software and hardware problems, but also with connectivity issues, and most of them have to juggle multiple commitments to survive since salaries are very low even for university teaching or research positions. Paying 30-50 US dollars to buy a single article is beyond these researchers' reach. Therefore, the demands on these researchers' time are very challenging, and the need to work as efficiently as possible (before the power cuts off again, or the net goes down again) is ever-present.

Citing Elizabeth Wager (Chair of the Committee on Publication Ethics) and referring to scientific paper abstract, Shaschock (personal communication) forcefully adds that in many parts of the world, researchers only have access to research paper abstracts. Even in the developed world, doctors working outside academic centers (which means the majority of them) will not have access to full text for many papers and therefore use abstracts without reading the full paper. OA is the solution to such a negative and counterproductive situation because by making work available in OA, researchers are helping to create a global knowledge commons so that all may benefit, not just the relatively wealthy. Moreover, since a university mission is to create and disseminate knowledge, OA helps universities to fulfil their mission.

Support for public access policies is growing by the day. In May 2012, a petition in support of public access policies on the White House's "We the people" website received, over the course of less than 2 weeks, more than 25,000 signatures, enough to prompt White House consideration. And on June 28 2012, 13 Members of Congress sent a letter to the Office of Science and Technology Policy at the White House in support of policies promoting greater public access to the results of federally funded research. According to *The Guardian* (July 25 2012), the results of scientific research that tackles disease, food security issues and poverty in the developing world will become freely available as part of the UK government's plans to open up access to publicly funded studies. This applies to all work funded by the Department for International Development (DfID). Moreover, last July, UK Science Minister David Willetts announced that all published scientific research funded by the UK Research Councils would be immediately available for anyone to read free of charge by 2014.

Finally, in July 2012 as well, the Higher Education Funding Council for England (HEFCE) announced plans to require OA for research submitted to the next Research Excellence Framework in 2014 (see URL: www.hefce.ac.uk/news/newsarchive/2012/name.73613.en.html). As Peter Suber, Director of the Harvard OA Project, asserts, these announcements signal a massive shift towards OA for publicly funded research in the UK, which is extremely good for researchers and taxpayers (Suber, 2012). The day after these important announcements in the UK, the European Commission announced a new OA policy for the European Union and recommended OA policy for member states.

It is then undeniable that freely accessible publishing has passed from an early experimental phase to a period of consolidation, with the number of OA papers showing steady growth. The model has been shown to work, writes Peter Webster (2012) in his article entitled “Humanities left behind in the dash for open access”. However, Webster rightly argues that few of the top journals in the humanities (and, I would add, in the Arts and Social Sciences as well) are OA. There is indeed no Public Library of History to match the phenomenally successful Public Library of Science. What is more, institutional repositories (the Green road to OA) in the Arts, Humanities, and Social Sciences have shown very slow progress.

There is one OA site for the Social Sciences, though, that enables authors to post working papers as well as those accepted for publication: it is the “Social Sciences Research Network” which also includes categories for the Humanities. It is not entirely OA, though: publications that are copyrighted only show the paper abstracts. However, I know that people who cannot access the journals or books tend to email authors, requesting electronic copies of the papers they are interested in.

All the disciplines stand to gain from a successful move to OA. However, as stated above, much of the discussion about OA has been driven so far by the needs of the Hard and Natural Sciences. “Let’s not allow the humanities, arts and social sciences to be collateral damage along the way”, concludes Webster (2012: 2).

I would like to conclude this essay by citing Steven Harnad (2011b: 5) who forcefully asserts:

Full speed ahead with mandating and providing Green OA in order to maximize research usage and progress today. Both the research and the

economic benefits are all in favor of the research community as well as the tax-paying public that support their research. Publishers are performing a service to research, not vice versa. It's time for the publishing tail to stop trying to wag the research dog.

As I argued all along this essay, knowledge societies can be built around the world much more strongly and effectively if knowledge is easily accessed and spread. OA is a key to this transformation.⁸

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Françoise Salager-Meyer was educated at the University of Lyons, France, and the University of Texas at Austin. She is the author of numerous publications on written medical discourse, mostly from a diachronic, cross-linguistic and cross-generic perspective. In 1994 and 2004, she was awarded the Horowitz Prize for her works on the pragmatics of written scholarly communication. She was the section editor of the "Language and Medicine section" of the second edition of the *Encyclopedia of Language and Linguistics* (Elsevier) and is currently coordinating the *Multilingual and Multidisciplinary Research Group on Scientific Discourse Analysis*.

NOTES

¹ I have taken the expression "edemocracy" from a recent paper written by Steven Harnad (2011a), one of the pioneers of the Open Access (OA) movement in the early 1990's and, since then, one of its most fervent advocates and closest observers.

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³ Elsevier journals have a typical embargo period of 12 months in the Health and Life Sciences, whereas Mathematics and Social Sciences journals have an embargo period of 24 to 36 months.

⁴ Good examples of subject repositories are ArXiv that started with Physics but has since expanded its scope to cover a variety of research topics, and PubMedCentral for Biomedical and Life Sciences research.

⁵ E-prints (the former paper reprints) can be both "pre-prints" (pre-peer review) and "post-prints" (post-peer review). "Post-prints" are all post publication works including the official published version, although what is self-archived is usually the final author's version of the post-peer reviewed or copy-edited paper (Harnad, 2003) which is estimated to be "good enough for use by scholars and by teachers" (Durenceau, 2011: 1).

⁶ For more information, visit Springer's website at URL: www.springeropen.com/books.

⁷ Steven Harnad (2006) coined the expression Zeno's paralysis after the philosopher who thought that one could not walk across a room because before walking the whole distance, one must first walk half the distance, and before that, half the half-distance, etc. Hence, one could not even get started at all.

⁸ For those interested in the OA situation in Southern Europe (Italy, France, Spain, Portugal, Greece and Turkey), see the Alhambra Declaration (May 2010, available at URL: http://www.accesoabierto.net/sites/accesoabierto.net/files/OASouthEurope_10_AlhambraDeclaration.pdf) and the report recently published by the FECYT (Spanish Foundation for Science and Technology) in 2010 titled *Open Access in Southern European Countries* available at URL: http://oaseminar.fecyt.es/Resources/Documentos/OASouthern_Vweb.pdf. For those interested in the situation in Northern European countries (Norway, Finland, Iceland, Denmark and Sweden), see Hedlund & Rabow (2007).

