

# OPEN ACCESS FOR ALL:

IS IT TIME TO CHANGE THE  
WAY WE PUBLISH AND TEACH  
AFRICAN ARCHAEOLOGY?

In the past 5 years, the Open Access movement has emerged, defined itself, and grown rapidly. What is Open Access and what does it offer to Africanist archaeology?

# What is Open Access?

Free flow of scientific knowledge via the internet,  
without obstacles of geography or fees,  
"uniting humanity in a common intellectual  
conversation and quest for knowledge"

Budapest Open Access Initiative, 2002

In 2002, the Budapest Open Access Initiative – convened by George Soros's Open Society Initiative – articulated the animating vision of Open Access: global communities of scholars, scientists, students and teachers among whom scientific knowledge flows freely and without barriers.

## In this talk

- ❖ Overview of Open Access initiative and developments in technology and copyright
- ❖ Consequences of Open Access
- ❖ Example of Open Access textbook publication using Connexions

In this talk, I want to provide an overview of the Open Access Initiative and the developments in technology and copyright that have given it considerable momentum. If Open access succeeds, it will have a transformative effect on how we exchange information and interact with colleagues globally, and how we interact with information itself. The picture I propose to paint includes the breakdown of the current Center-periphery structure of knowledge dissemination rooted in North-dominated publication and intellectual property regimes. I will use the possibilities offered by web-based, open access publication of textbooks in African archaeology to illustrate this. It has been argued that digital information technology is potentially as radically transformational as the printing press was in the 15<sup>th</sup> century. Recalling that the printing press was directly implicated in the Protestant Reformation and the emergence of a new historical period we call "modernity", we may expect that the outcome of the digital transition we are currently in will be momentous, even though we cannot possibly predict what particular forms it will take.

# Major sources of Open Access momentum

university communities

research libraries

alarmed by the soaring cost of academic journals, which threatens circulation and advancement of scholarly and scientific knowledge

# Scholarly Publishing and Academic Resource Coalition

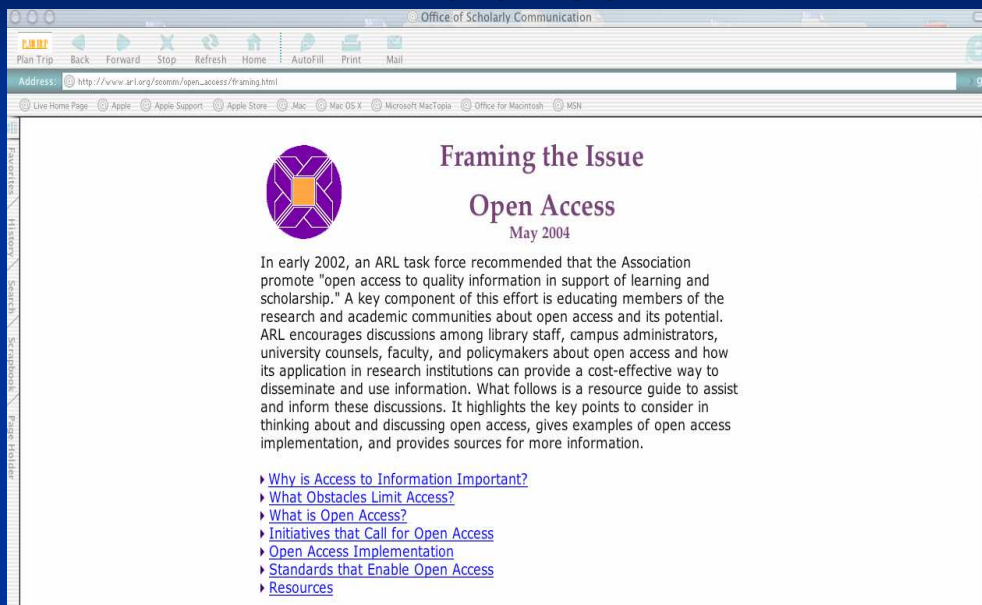


SPARC Search! **Go!**


SPARC®, the Scholarly Publishing and Academic Resources Coalition, is an alliance of academic and research libraries and organizations working to correct market dysfunctions in the scholarly publishing system. Developed by the Association of Research Libraries, SPARC has become a catalyst for change. Its pragmatic focus is to facilitate the emergence of systems that capitalize on the networked environment to disseminate research. Its strategies expand competition and support open access to address the high and rising cost of scholarly journals, especially in science, technology, and medicine—a trend which inhibits the advancement of scholarship.

Open Resource initiative developed by the Association of Research libraries

# Association of Research Libraries



The screenshot shows a web browser window with the title "Office of Scholarly Communication". The address bar contains the URL "http://www.arl.org/foam/open\_access/framing.html". The page content includes the ARL logo, the title "Framing the Issue: Open Access", the date "May 2004", a paragraph of text, and a list of links.



## Framing the Issue

### Open Access

May 2004

In early 2002, an ARL task force recommended that the Association promote "open access to quality information in support of learning and scholarship." A key component of this effort is educating members of the research and academic communities about open access and its potential. ARL encourages discussions among library staff, campus administrators, university counsels, faculty, and policymakers about open access and how its application in research institutions can provide a cost-effective way to disseminate and use information. What follows is a resource guide to assist and inform these discussions. It highlights the key points to consider in thinking about and discussing open access, gives examples of open access implementation, and provides sources for more information.

- ▶ [Why is Access to Information Important?](#)
- ▶ [What Obstacles Limit Access?](#)
- ▶ [What is Open Access?](#)
- ▶ [Initiatives that Call for Open Access](#)
- ▶ [Open Access Implementation](#)
- ▶ [Standards that Enable Open Access](#)
- ▶ [Resources](#)

## Open Access is enabled by technology

- ❖ Familiar WWW and search engines
- ❖ Expanding Web and search capabilities

Currently, the Web is very limited. The language used to create documents – HTML – is concerned mainly with the format of the material displayed – headings, tables, lists, font style, etc. and with the implementation of linking. Search engines such as Google that search HTML documents do it by word matching – there is no way for them to distinguish meaning, between the surname Cook, the verb cook, and the noun. They cannot, for example, identify documents that are articles about Ethiopian archaeology, because HTML has no identifying tags for type of document or subject. Using Google to search for Ethiopian archaeology nets us 276,000 hits, many of them tourism and book vendor sites. Surely, there is a full-text article or conference paper of interest to an archaeologist in there, but good luck finding it.

Expanded web and search capabilities that are just now emerging depend on the tagging of information about the information in a web site - Metadata.

# Metadata

Literally, “data about data”

Library card catalogue - metadata system permitting us to locate resources

Digital metadata serve the same function



# Metadata - DSpace

The screenshot shows a web browser window displaying a DSpace metadata record. The browser's address bar shows the URL: <http://www.dspace.cam.ac.uk/handle/1810/33743>. The page header includes the DSpace logo and the University of Cambridge logo. The main content area displays a 'Full metadata record' for an item in the 'Archaeology' collection, specifically 'Kilise Tepe'. The metadata is organized into a table with three columns: 'DC Field', 'Value', and 'Language'. The table lists various metadata fields such as 'contributor.author', 'coverage.spatial', 'date.accessioned', 'description', and 'rights'. The 'description' field contains the text: 'P97/88 (H20 Level V/4, Rm 53; see Fig. C3:10 for location)'. The 'rights' field is set to 'Open'. Below the table, it states 'Appears in Collections: Kilise Tepe'. On the left side of the page, there are navigation links for 'Home', 'Browse', 'Sign on to:', 'Search DSpace', and 'SHERPA'. The browser's taskbar at the bottom shows the system clock as 'Tue 4:58 PM' and various application icons.

DC Field	Value	Language
contributor.author	J Gower	en_GB
contributor.author	L Seffen	en_GB
contributor.author	JN Postgate	en_GB
contributor.author	DC Thomas	en_GB
coverage.spatial	Kilise Tepe (Europe, Turkey)	en_GB
coverage.temporal	Bronze Age, Iron Age, Roman, Byzantine	en_GB
date.accessioned	2005-04-27T11:19:50Z	-
date.available	2005-04-27T11:19:50Z	-
date.created	07-Jan-04	en_GB
date.issued	07-Jan-04	en_GB
description	P97/88 (H20 Level V/4, Rm 53; see Fig. C3:10 for location)	en_GB
format	pdf	en_GB
format.extent	148690 bytes	-
format.mimetype	application/pdf	-
language.iso	en_GB	-
publisher	Kilise Tepe Project	en_GB
relation.isformatof	Drawing	en_GB
rights	Open	en_GB
rights	Kilise Tepe Project, Cambridge University	en_GB
title	KT Monograph Fig. C 2 4b	en_GB
type	Drawn image	en_GB

Software is being developed that encodes metadata about a document or file, or tags metadata within it. Search tools can scan these tags electronically, making it possible to identify and locate, for example, all digital articles written by a particular author, or about archaeological sites in a particular region. Increasingly powerful search tools will facilitate the identification and collection of Web content from many different sources. This emerging, Semantic web will be a much more powerful vehicle for sharing scientific knowledge than the current WWW.

## **Open Access also enabled by new arrangements to protect content, making it safe to share**

Copyright exists for public good

Can restrict free flow of information when copyright holder impose high fees

Open access recognizes that copyright exists for the public good

Encouraging the advancement of knowledge while protecting the rights of authors and copyright owners

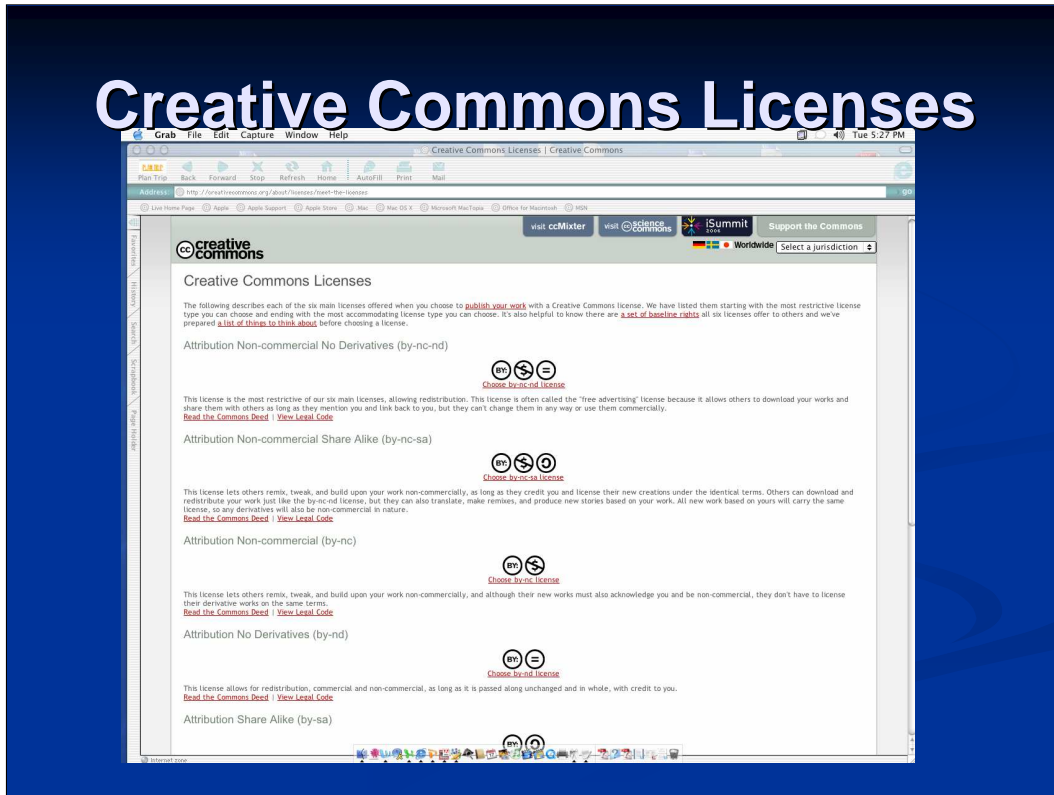
Meant to balance competing interests of authors, publishers, users

Copyright can restrict the free flow of information when copyright holders are publishers who:

Charge high license fees to libraries,

Charge high one-time use/purchase fees to readers

# Creative Commons Licenses



Solution: New licensing arrangements such as Creative Commons that operate within the current legal framework of copyright and permit authors to:

own the original copyright in their works and specify uses that can be made under the license, whether it can be used in a commercial enterprise, such as a textbook or trade book, and whether attribution is required

can take out a Creative Commons license on any work you make available on the Web

# Scholars Copyright Project addendum

## ADDENDUM TO PUBLICATION AGREEMENT

1. THIS ADDENDUM hereby modifies and supplements the attached Publication Agreement concerning the following Article:

\_\_\_\_\_

(manuscript title)

\_\_\_\_\_

(journal name)

2. The parties to the Publication Agreement as modified and supplemented by this Addendum are:

\_\_\_\_\_

(corresponding author)

\_\_\_\_\_

\_\_\_\_\_

(Individually or, if one than more author, collectively, Author)

\_\_\_\_\_

(Publisher)

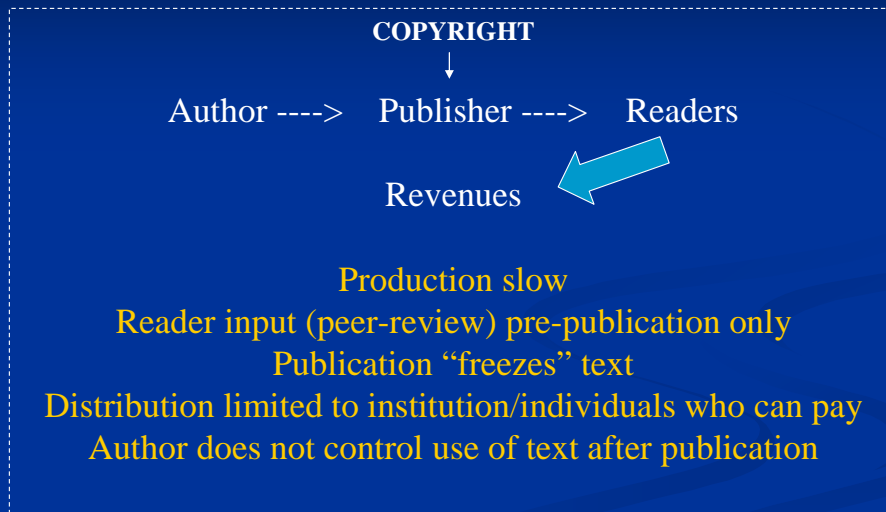
3. This Addendum and the Publication Agreement, taken together, allocate all rights under copyright with respect to all versions of the Article. The parties agree that wherever there is any conflict between this Addendum and the Publication Agreement, the provisions of this Addendum are paramount and the Publication Agreement shall be construed accordingly.

4. **Author's Retention of Rights.** Notwithstanding any terms in the Publication Agreement to the contrary, AUTHOR and PUBLISHER agree that in addition to any rights under copyright retained by Author in the Publication Agreement, Author retains: (i) the rights to reproduce, to distribute, to publicly perform, and to publicly display the Article in any medium for non-commercial purposes; (ii) the right to prepare derivative works from the Article; and (iii) the right to authorize others to make any non-commercial use of the Article so long as Author receives credit as author and the journal in which the Article has been published is cited as the source of first publication of the Article. For example, Author may make and distribute copies in the course of teaching and research and may post the Article on personal or institutional Web sites and in other open-access digital repositories.

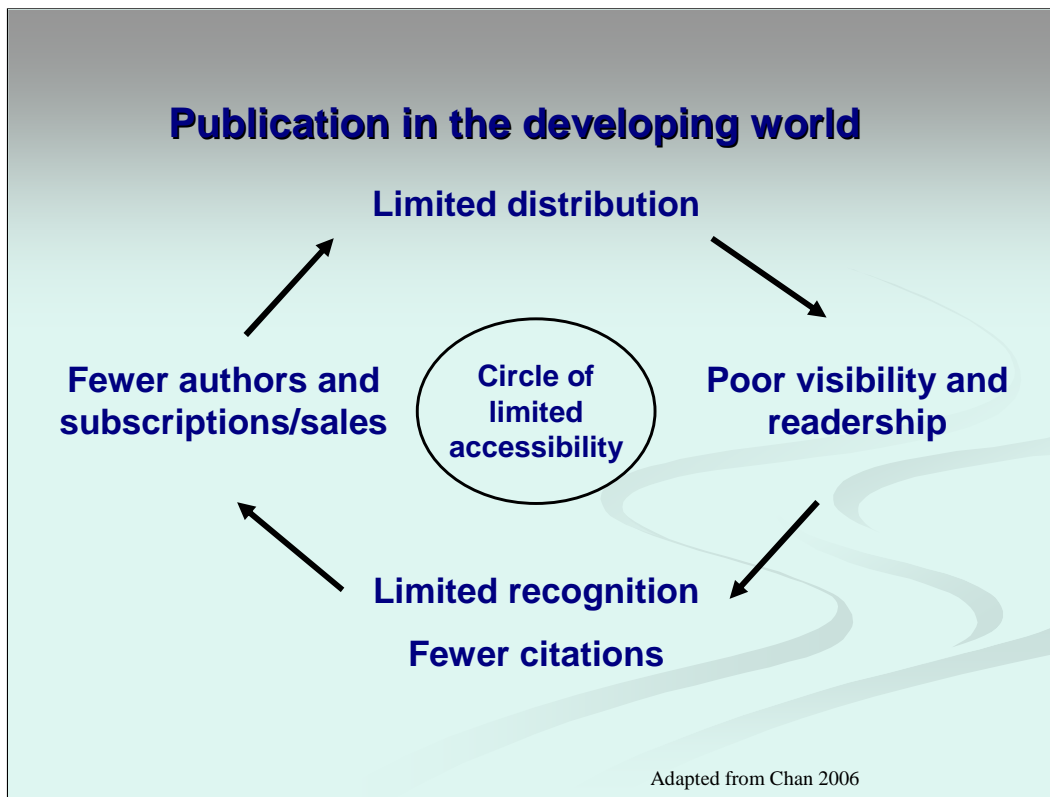
The Scholars Copyright Project of Creative Commons provides downloadable forms that you can attach to standard publishers copyright contracts specifying that you retain the right to post your published work on institutional or disciplinary servers, either as a pre-print, a post-print, or both.

Consider the many ways this open-access approach changes the traditional publishing regime:

## Traditional pay-for-access publication



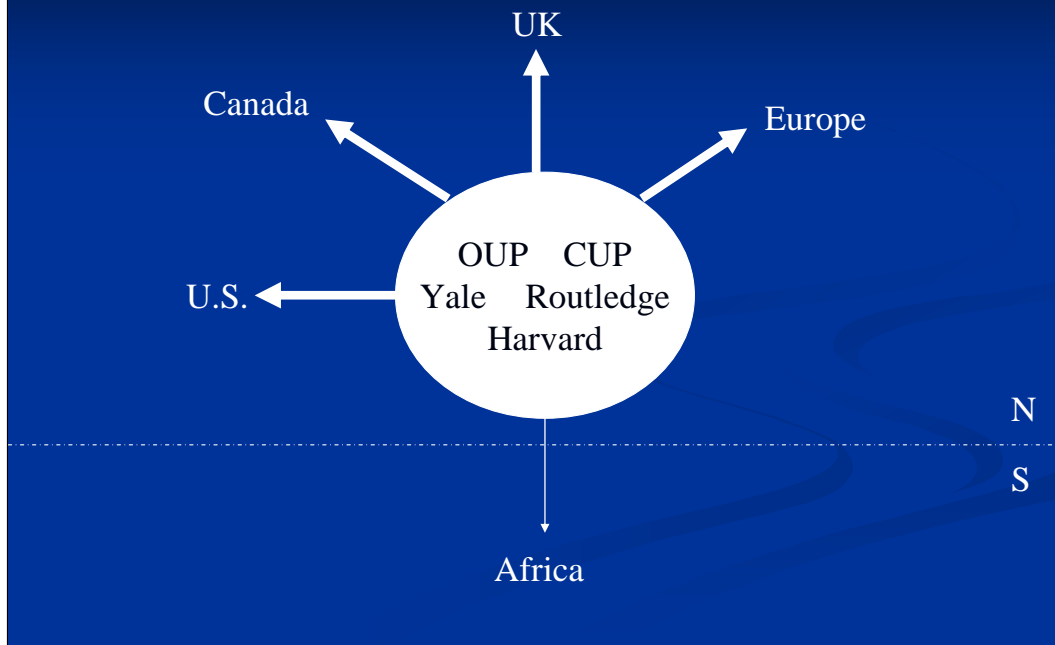
The publisher as intermediary is obligatory; they take on most of the work and the copyright, and enjoy most of the revenues. Readers' feedback and new information cannot alter text post-publication,



Obviously, this system permits maximum distribution in the North, where the most people able to pay for access live. For publications produced in the south, limited distribution often results in a negative feedback loop.

Adapted from Chan 2006 ARL Membership Meeting: The International Dimensions of Digital Science and Scholarship Ottawa, Canada May 17-19, 2006

## Center-periphery dissemination



Distribution and dissemination networks are likewise North-dominated, with little content trickling down to Africa

Open Access changes everything

# Open Access

COPYRIGHT

Author(s)



Readers/Users



(ePublisher)



Production potentially rapid

Continuous reader input beyond pre-publication peer review

Ongoing revision/updating possible

Distribution linked to online access, not \$\$

Author retains control of use of text

Open access content may be self-published or published in e journals, with editorial boards and peer review. Distribution is online without subscription or fee.

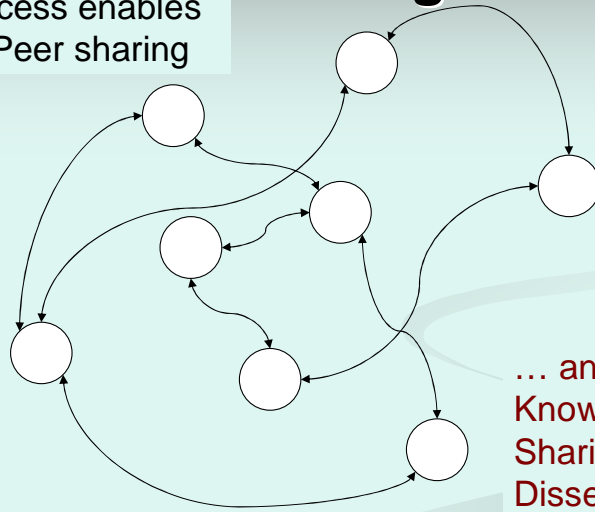
Reader feed back and updating can be continuous

With obstacles to distribution, and access removed, the world of scholarly communication becomes flat, to use Tom Friedman's metaphor and markedly more interactive.



# Open-Access Knowledge Sharing

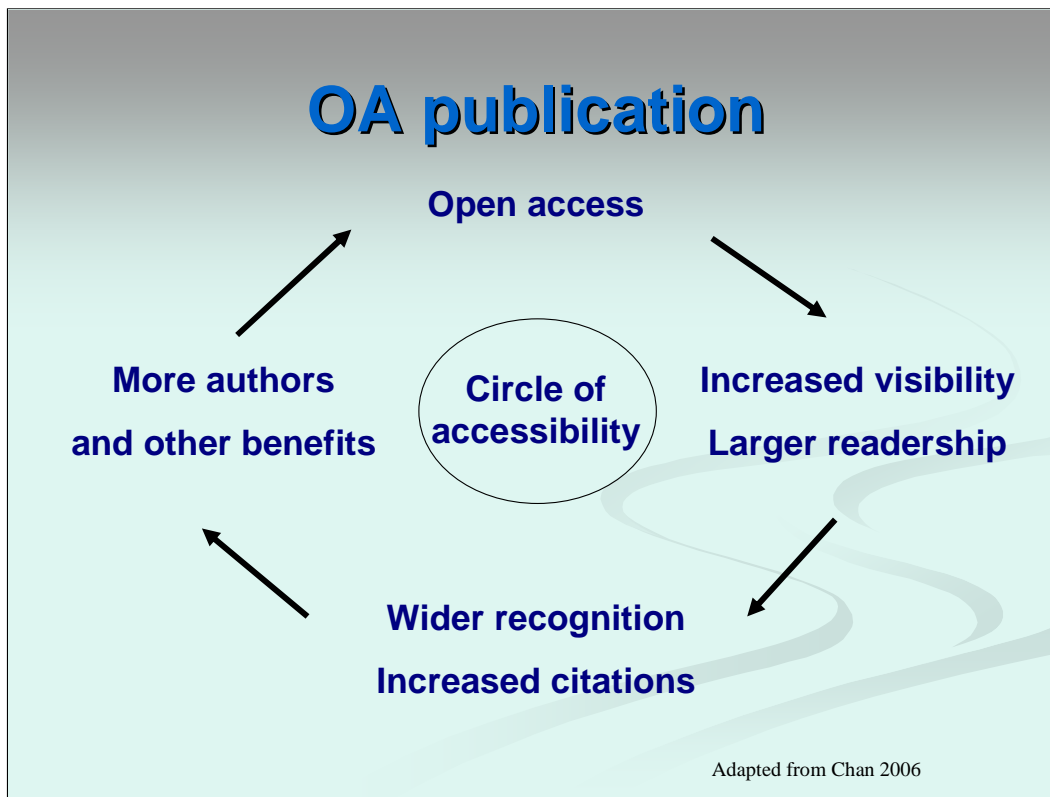
Open access enables  
Peer-to-Peer sharing



... and new model of  
Knowledge Creation,  
Sharing, and  
Dissemination

New scholarly communities of authors and readers become possible, in which both N and S can be fully involved, dissolving the geography of center and periphery.

From Chan 2006 ARL Membership Meeting: The International Dimensions of Digital Science and Scholarship Ottawa, Canada May 17-19, 2006



Chan 2006 ARL Membership Meeting: The International Dimensions of Digital Science and Scholarship Ottawa, Canada May 17-19, 2006

# Open Access Content

- Open Access journals
- Institutional repositories
- Disciplinary repositories
- Self-Archiving

Open access journals - currently >1200 with editorial boards, peer review.

Most in science. 12 in archaeology, none in African archaeology, although NA would be in te running if it were peer-reviewed

2. Institutional repositories – digital repositories of intellectual products created by faculty, staff, students of an institution.
3. Disciplinary repositories – used by some academic disciplines – e.g., classics, chemistry, mathematics to facilitate sharing and storage of research materials.
4. Self-archiving – depositing a digital document in a publicly accessible Website.

# DSpace Cambridge

The screenshot shows the DSpace Cambridge website. At the top left is the DSpace logo with the text '@ Cambridge'. At the top right is the University of Cambridge logo. Below the header is a navigation menu with links for Home, Browse, Communities & Collections, Titles, Authors, and By Date. The main content area is titled 'Communities and Collections' and lists several categories with their sub-items:

- **Archaeology**
  - Kilise Tepe
  - Kilise Tepe - dark archive
  - Tell el-Amarna
- **Cambridge University Library**
  - Royal Commonwealth Society
  - University Library - dark archive
- **CamRAD**
  - CamRAD Rock-Art images
- **CARET**
  - 2nd Annual Lecture Series in Sustainable Development 2004
- **Chemistry**
  - Early Digital Chemical Objects
  - Unilever Centre for Molecular Informatics
    - Published papers and preprints
    - WWMM

At the bottom left of the screenshot is a search box labeled 'Search DSpace:' with a 'Go' button and an 'Advanced Search' link.

2. Institutional repositories – digital repositories of intellectual products created by faculty, staff, students of an institution.

DSpace repository developed at MIT, DSpace software and metadata protocols becoming widely used

# eScholarship repository

eScholarship REPOSITORY UNIVERSITY OF CALIFORNIA CDL

HOME HELP MY ACCOUNT ABOUT SEARCH

eScholarship

**Search** all 12,142 papers **Browse** research and scholarship

**GO**

**Notify me** of new papers via Email or RSS

» Campus  
» Research unit, center, or department  
» Journals and peer-reviewed series  
» Seminar series  
» Postprints

**Last week...**  
31,673 full-text downloads of repository content

**To date...**  
3,347,573 full-text downloads

The repository is a service of the eScholarship initiative of the California Digital Library. Research and scholarly output included here has been selected and deposited by the individual University of California units.

**Paper of the day**  
Effect of secondary structure on the interactions of peptide T4 LYS (11-36) in mixtures of aqueous sodium chloride and 2,2,2,-Trifluoroethanol  
by Camille O. Anderson, Susanne Spiegelberg, John M. Prausnitz, and Harvey W. Blanch  
Lawrence Berkeley National Laboratory, University of California


**Top downloads**  
Top ten papers, all time  
Top ten recent papers

Open Archives Compliant eScholarship is a service of the California Digital Library powered by bepress

# E-prints

**EPrints Free Software**

HOME OPEN ACCESS **SOFTWARE** COMMUNITY SERVICES



Hi, my name is Christopher Cuttridge and I am the lead developer for EPrints. [Meet my team](#)

EPrints is both a practical tool and the crystallization of a philosophy. It enables research to be accessible to all, and provides the foundation for all academic institutions to create their own research repositories.

EPrints is a great piece of software but we have plans to make it better still. With the new EPrints Community initiative we will be able to work closely with new and existing users to address their needs and concerns, and allow them to help set our priorities. Working towards a more modular design will make it easier for the community to build and share extensions.

I was pleased to recently receive the UK Unix and Open Systems User Group 2005 Award [for the development of EPrints](#).

You can email me at [cig@ecs.soton.ac.uk](mailto:cig@ecs.soton.ac.uk)

**Quick Links:**

- [Software Homepage](#)
- [Demo Site](#)
- [Download](#)
- [Sites Using EPrints](#)
- [Wiki](#)
- [Tech-List Archive](#)
- [Documentation](#)
- [Prerequisites](#)

**Demonstration Sites**

Our [demonstration site](#) allows you to try the features of our EPrints software. Detailed help is provided.

You can also see how EPrints users worldwide have [configured their repositories to meet their diverse requirements](#).

**Support**

**Premium Support Services**  
For premium support and training, see [EPrints services](#).

**Announcements Mailing List**  
This list is used to announce new versions of the EPrints software, and major news. It is not a discussion list.  
To subscribe to the list, send a mail with one of the following lines in the message body to [majorfomo@ecs.soton.ac.uk](mailto:majorfomo@ecs.soton.ac.uk)  
subscribe eprints-announce

**Technical Mailing List**  
This is the technical discussion list for people who are using EPrints and/or are interested in the technical side of the software - getting it working, customising it and new directions for the next version.  
The technical discussion list is [archived online](#).  
To subscribe to the list, send a mail with one of the following lines in the message body to [majorfomo@ecs.soton.ac.uk](mailto:majorfomo@ecs.soton.ac.uk)  
subscribe eprints-tech

Wiki

3. Disciplinary repositories – used by some academic disciplines – e.g., classics, chemistry, mathematics to facilitate sharing and storage of research materials. Common software such as Eprint, facilitates search and retrieval by users

4. Self-archiving – depositing a digital document in a publicly accessible Website. Many of us have self-archived documents currently on the Web. The problem is that without appropriate metadata tags and search engines that read these tags, interested readers may not easily find these documents

## Alternative textbooks for African archaeology?

In the last few minutes, let's look at an open access product we haven't talked about yet: textbooks. If I can use the example of West Africa, where I have spent considerable time in several countries, I would note a common problem from grade school to grad school: too few books, too much outdated information. I talked with a 13-year old in Mali who was learning about *Australopithecus* in school and the notes he had taken could have come out of the mouth of Raymond Dart in the 1930's. In Guinea, university-level archaeology is taught almost exclusively by lecture and recitation – it is an almost purely oral enterprise because there are no books. There are also obstacles to knowledge flows from south to North: In countries such as Nigeria there is considerable local archaeological knowledge and expertise, but this information is frequently not effectively disseminated to other colleagues, both in Africa and beyond. Overall, It is a knowledge system that never succeeds in being the sum of its parts. There must be a better way...

## IMAGINE:

Expert modules from many authors

Common software

Digital repository

Available Free under Creative Commons license

Up-to-date, quality-controlled

May be linked into custom textbooks

Imagine what it would mean for pedagogy and archaeological knowledge if:

Everyone with expertise on some chunk of Africa's past wrote one or more several-page modules on the topics of their expertise, using the same powerful software

They deposited their modules in a digital repository, retaining copyright, but allowing anyone else to use them non-commercially with proper attribution

The modules were available free-of-charge to professors, teachers, students and anyone with an interest in Africa's past under a Creative Commons license .

Inputs from users and other authors assured updating, revision and quality control of modules, so that they always reflected the current state of knowledge

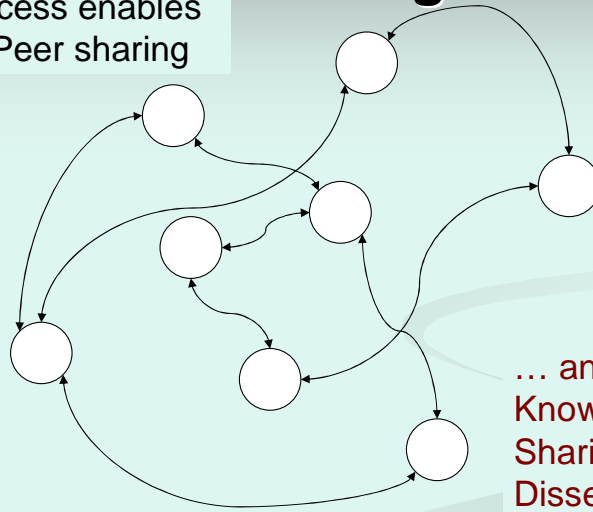
The software permitted instructors to group any subset of modules into chapters and sequence them into a multi-authored textbook that could be presented in a variety of output formats, including webpages, e-books, and print.

If we could do that, we would come very close to achieving the Open Access model of knowledge creation, sharing, and dissemination:



# Open-Access Knowledge Sharing

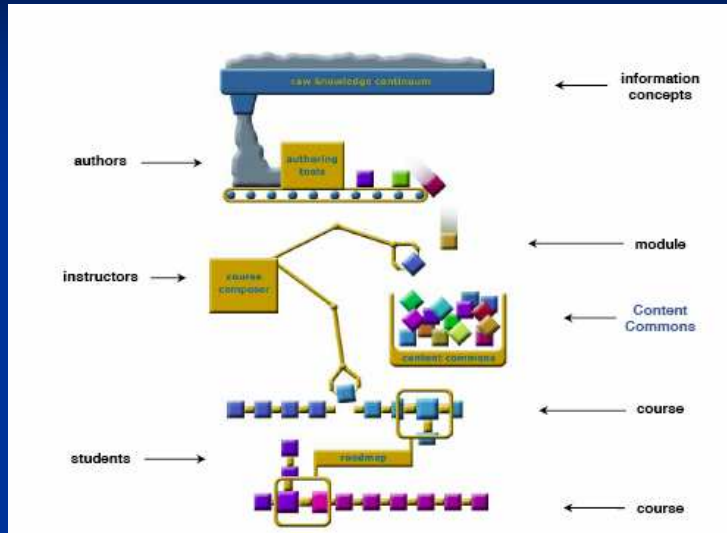
Open access enables  
Peer-to-Peer sharing



... and new model of  
Knowledge Creation,  
Sharing, and  
Dissemination

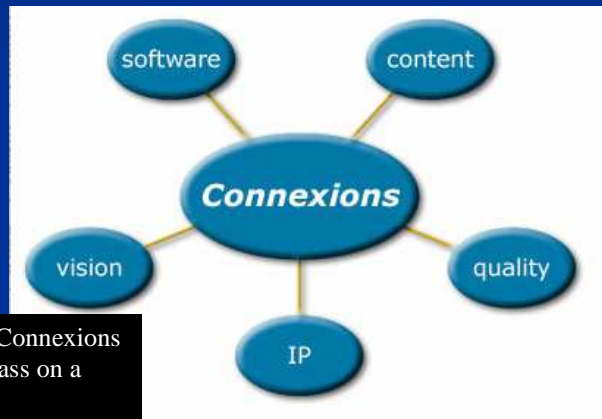
Since 1999, The connexions project at Rice University has been working toward this very end by developing software that enables all of this. The goal is the creation and empowerment of global knowledge communities through collaboration on information modules and courses. The newest version of the software has just been rolled out, and it automates most of the metadata tagging that makes data sharing and reuse possible, so authoring modules, collaborating, and linking them is easy.

# Connexions dynamic knowledge factory



Connexion uses the metaphor of a dynamic knowledge factory

# Connexions 5 components



Goal: Take Connexions to critical mass on a global scale

With the software tools and content commons CNX provides, the quality control assured by post-publication review, and open content licensing, Connexions believes that its goal to reach a critical mass on a global scale in the next decade is realistic.

# Connexions growth

>3200 modules  
>145 courses (January 2006)  
*multiple languages*

engineering, computer science, nanotech  
physics, statistics, math, history, music  
bio-diversity, botany, bio-info, IP  
BRIT, UNESCO, UN, Sigma Xi, ...  
from authors *worldwide*



**Usage** January 2006  
**16 million hits**  
**1.1m page views**  
**500k unique users**  
**from 157 countries**

Cnx is growing 12% a month. Could African archaeology possibly be among the future disciplinary communities using it? It offers a grass-roots, community-driven approach to authoring, teaching and learning that is radically different than the current system. For anyone interested, Rice Connexions is open to you and the Connexions group would welcome your inquiries and participation.



**www.cnx.org**

In conclusion, the expanding capabilities of the WWW are in the process of making OA an increasingly powerful means of sharing, retrieving, and contributing to knowledge. Each one of us here already has the possibility of contributing to the development of OA resources, whether articles, papers, or texts. Many have already started down the path. My hope is that each of us here will contemplate the future of OA for our Africanist community and find ways to get involved.