Mandates and Metrics:

How Open Repositories Enable Universities to Manage, Measure and Maximise their Research Assets

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- **Hitchcock**, Steve (U. Southampton, EPrints)
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What Is Open Access:?

- Free,
- **Immediate**
- Permanent
- Full-Text
- On-Line
- Access

Open Access to What?

ESSENTIAL:

to all 2.5 million annual research articles

published in all 25,000 peer-reviewed journals in all scholarly and scientific disciplines, worldwide

OPTIONAL:

(because these are not all author give-aways, written only for usage and impact):

1. Books

2. Textbooks

3. Magazine articles

4. Newspaper articles

5. Music

6. Video

7. Software

8. "Knowledge"

(or because author's choice to self-archive can only be encouraged, not required in all cases):

9. Data

10. Unrefereed Preprints

There are two ways to provide OA:

Green OA Self-Archiving: Authors self-archive the articles they publish in the 25,000 peer-reviewed journals

Gold OA Publishing: authors publish in one of the c. 3000 OA journals (some still recovering costs through institutional subscriptions, others through author/institutional publication charges)
http://www.doaj.org/

NB: *This presentation is exclusively about providing **Green OA**, through university policy reform (by mandating **Green OA Self-Archiving**).*

*It is not about **Gold OA Publishing**, which is in the hands of the publishing community, not the university community.*

*(**Green OA** may or may not eventually lead to **Gold OA**, but it will lead with certainty to **OA**.)*

Open Access: Why?

1. To **maximise** the uptake, usage, applications and impact of the research output of your university

2. To **measure and reward** the uptake, usage, applications and impact of the research output of your university (research metrics)

3. To **collect, manage and showcase** a permanent record of the research output and impact of your university

OA maximises: research **visibility**
research **usage**
research **uptake**
research **applications**
research **impact**
research **productivity**
research **progress**
research **funding**
research **manageability**
research **assessability**

by maximising research **accessibility**

Open Access: How?
By mandating Green OA Self-Archiving

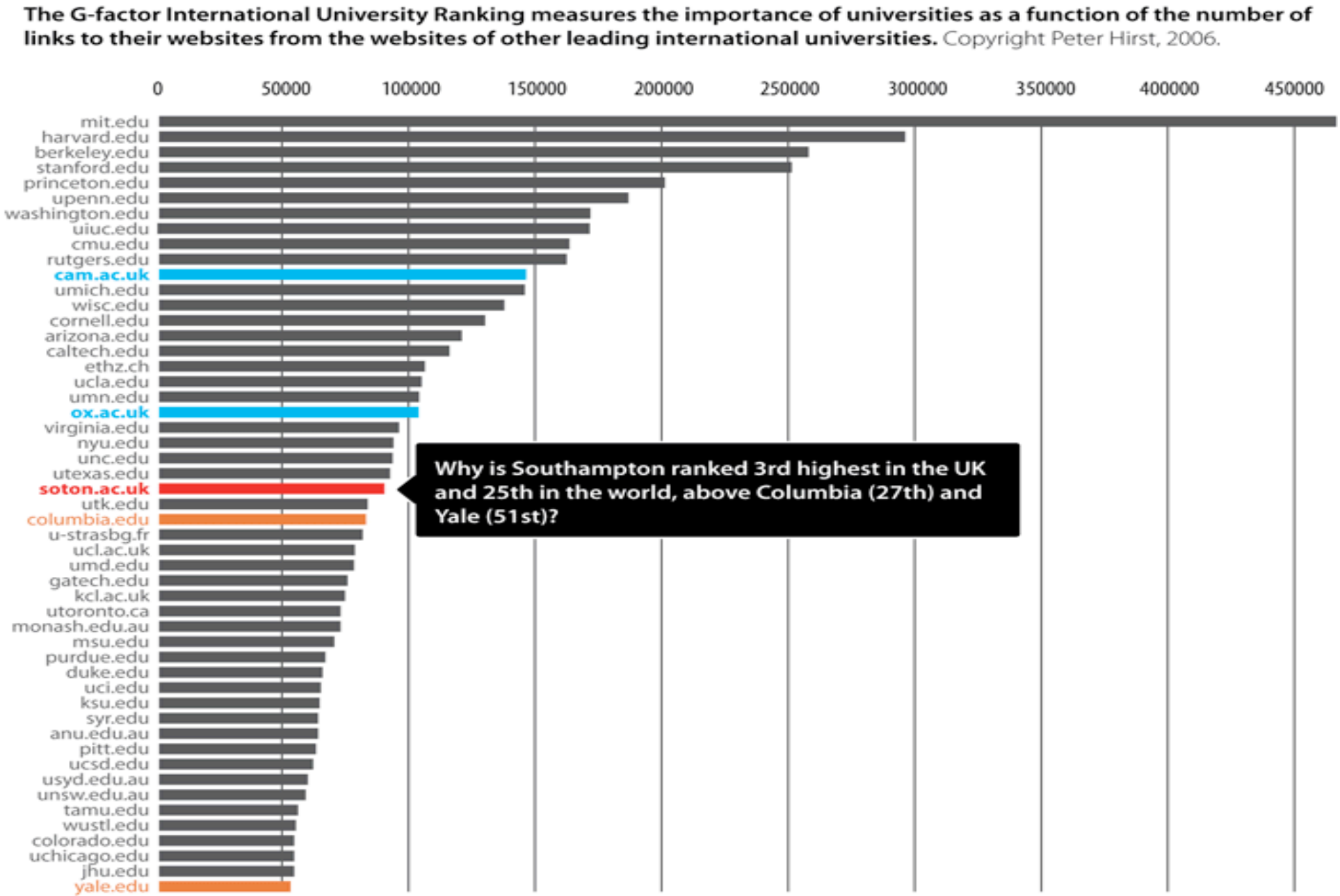
OA Metrics motivate OA Mandates

And OA Mandates maximize OA Metrics

- **Metrics:** Metrics of research usage and impact quantify, evaluate, navigate, propagate and reward the fruits of OA self-archiving, motivating **Green** OA Mandates.

- **Mandates:** Incentivized by the Metrics, **Green** OA self-archiving Mandates, adopted by all universities and research funding agencies, will provide OA to 100% of research output, maximizing research usage and impact, productivity and progress.

Brody et al (2007) Incentivizing the Open Access Research Web: Publication-, Data-Archiving and Scientometrics. *CTWatch Quarterly* 3(3). http://eprints.ecs.soton.ac.uk/14418/



COMPETITIVE ADVANTAGE: The earlier you mandate Green OA, the sooner (and bigger) your university's competitive advantage: U. Southampton School of Electronics and Computer Science was the first in the world to adopt an OA self-archiving mandate.

Contributors to the OA Advantage

EA + QA + UA + (CA) + (QB)

- **EA: Early Advantage:** Self-archiving preprints before publication hastens and increases citations (higher-quality articles benefit more: top 20% of articles receive 80% of citations)
- **QA: Quality Advantage:** Self-archiving postprints immediately upon publication hastens and increases citations (higher-quality articles benefit more)
- **UA: Usage Advantage:** Self-archiving increases downloads (higher-quality articles benefit more)
- ***(CA: Competitive Advantage):*** OA/non-OA advantage (CA disappears at 100%OA, *but very important today*!)
- ***(QB: Quality Bias):*** Higher-quality articles are self-selectively self-archived more (QB disappears at 100%OA)

PREVIEW of following slides:

OA: How? Universities and funders mandate Green OA self-archiving

Deposit Where? In universities' own Institutional Repositories (IRs)

Deposit How? A few minutes of keystrokes per paper is all that stands between the world research community and 100% OA

Deposit What? Author's final, revised, peer-reviewed draft ("postprint")

Deposit When? Immediately upon acceptance for publication

Optimizing OA Self-Archiving Mandates: What? Where? When? Why? How?
http://openaccess.eprints.org/index.php?/archives/136-guid.html

1. **About 25,000 peer-reviewed journals are published worldwide, in all disciplines and all languages**

http://www.ulrichsweb.com/ulrichsweb/

2. They publish about 2.5 million articles per year

3. Most universities and research institutions can only afford to subscribe to a fraction of those journals.

http://fisher.lib.virginia.edu/cgi-local/arlbin/arl.cgi?task=setupstats

4. That means that all those articles are accessible to only a fraction of their potential users.

5. That means that research is having only a fraction of its potential usage and impact.

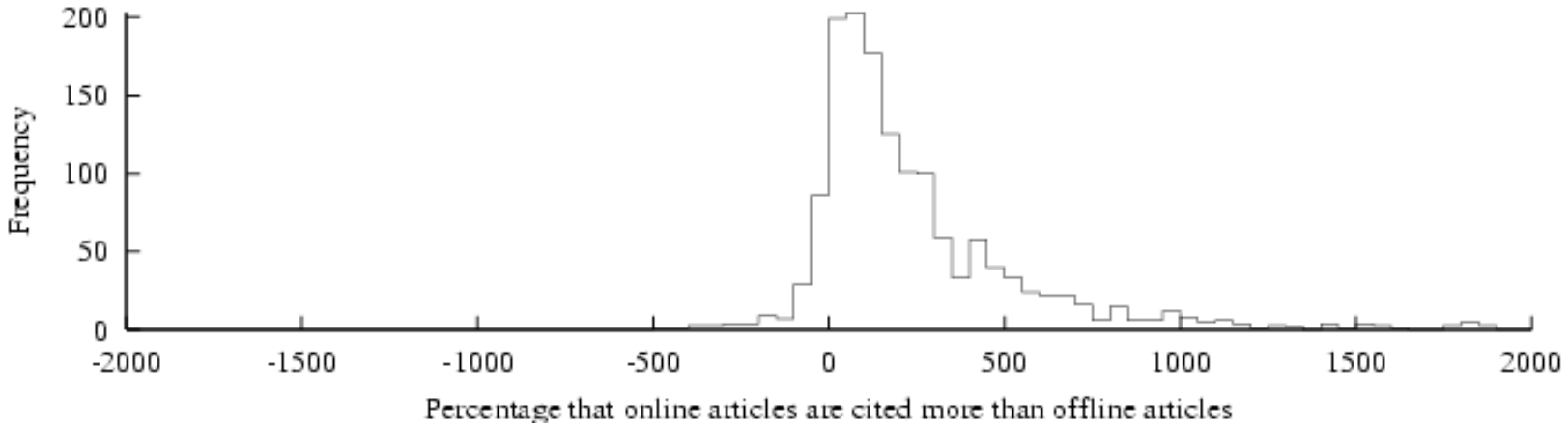
6. That means that research is achieving only a fraction of its potential productivity and progress.

7. In the paper era there was no way to remedy this, but in the web era there is a way:

"Open Access" (OA) provides free webwide access to research journal articles (immediately and permanently)

8. Research that is freely accessible on the web has 25% - 250% greater research impact.

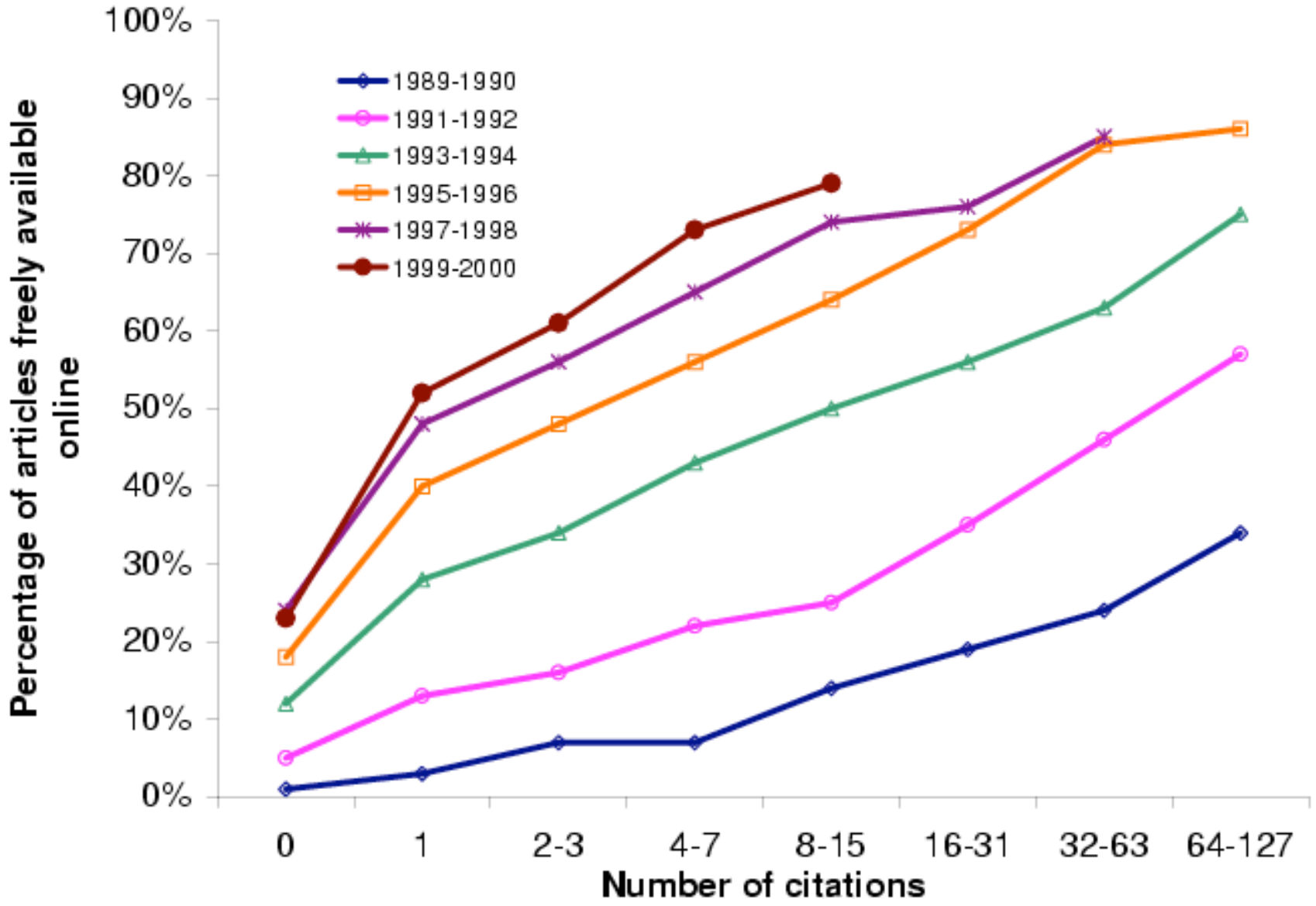
"*Online or Invisible*?" (Lawrence 2001)



"**average of 336% more citations to online articles compared to offline articles published in the same venue**"

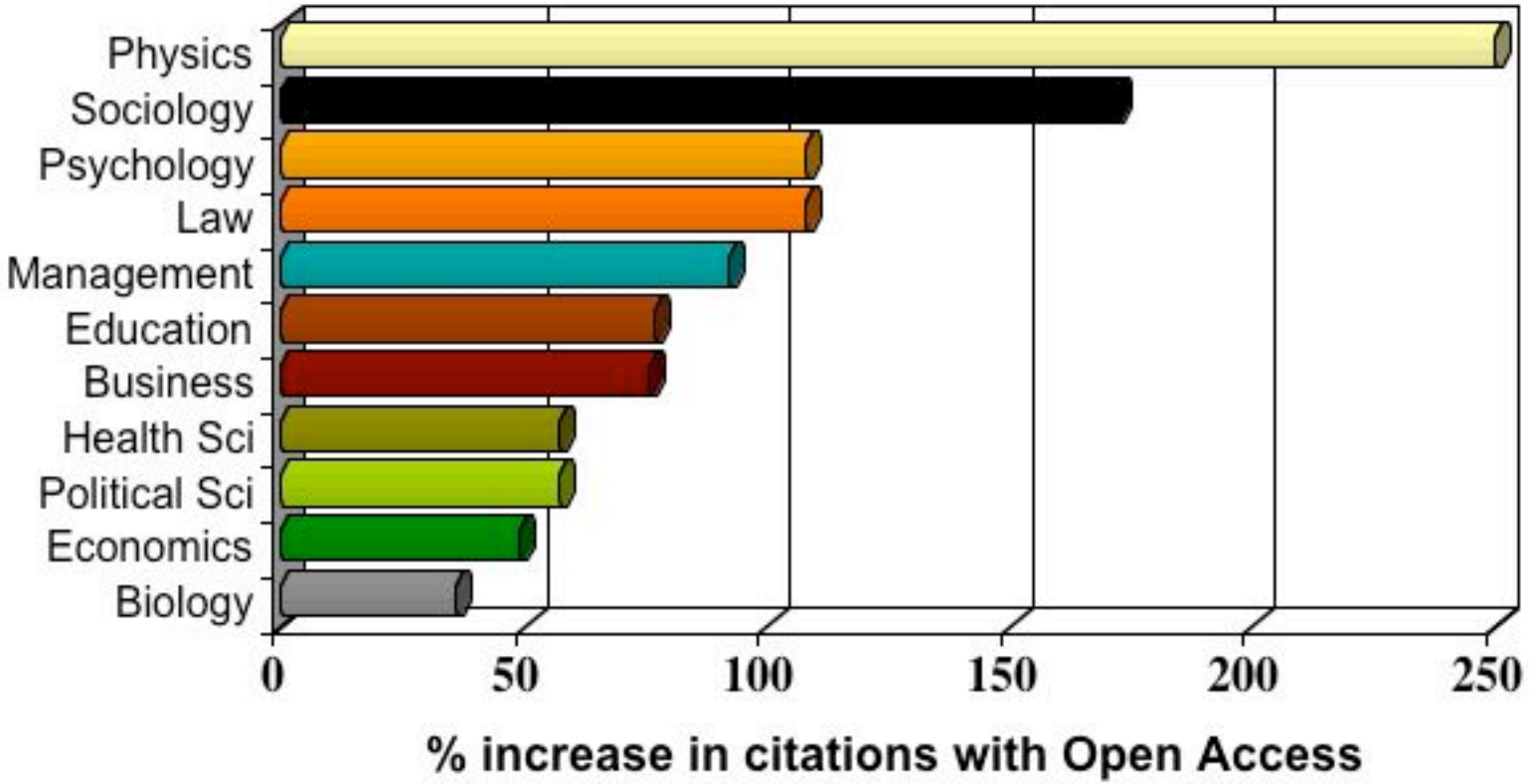
Lawrence, S. (2001) Free online availability substantially increases a paper's impact Nature 411 (6837): 521.

http://www.neci.nec.com/~lawrence/papers/online-nature01/



Lawrence (2001) findings for computer science conference papers. More OA every year for all citation levels; higher with higher citation levels

Open Access increases citations



Range = 36%-200%

(Data: Brody & Harnad 2004; Hajjem et al. 2005)

9. If 100% of research articles were freely accessible (OA), then the usage, impact, productivity and progress of research would be maximised.

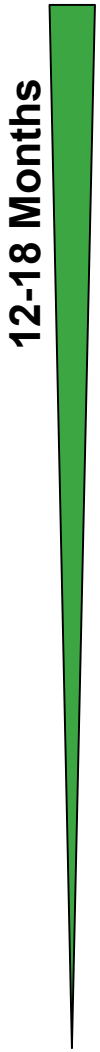
10. There are two ways to make research Open Access.

11. **The Golden way is for publishers to convert all their journals into Open Access journals.**

12. The Green way is for researchers to deposit all their published journal articles in their own institution's Open Access Repository.

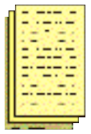
Here is how Green OA self-archiving works:

Limited Access: Limited Research Impact

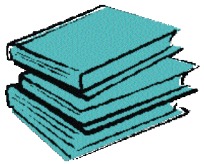


Impact cycle begins:
Research is done

Researchers write pre-refereeing "Pre-Print"



Submitted to Journal



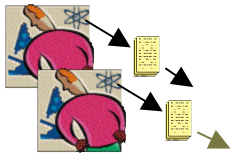
Pre-Print reviewed by Peer Experts – "Peer-Review"

Pre-Print revised by article's Authors

Refereed "Post-Print" Accepted, Certified, Published by Journal

Researchers can access the Post-Print if their university has a subscription to the Journal

New impact cycles:
New research builds on existing research

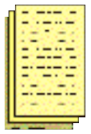


Limited Access: Limited Research Impact

12-18 Months

Impact cycle begins:
Research is done

Researchers write pre-refereeing "Pre-Print"



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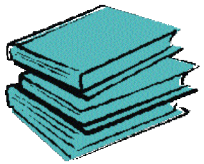

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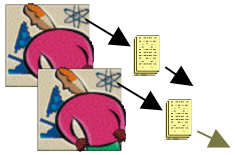
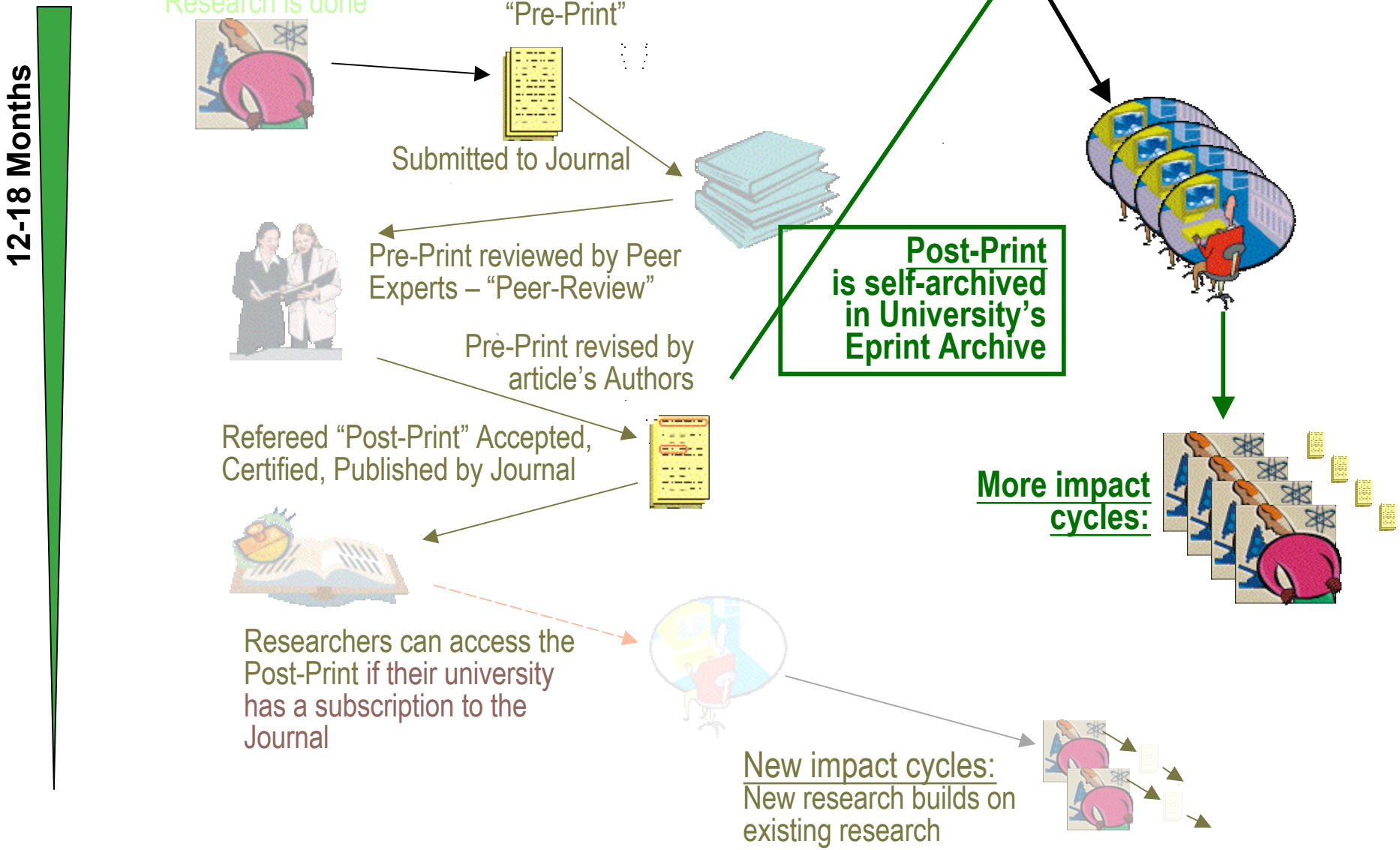


This limited subscription-based access can be supplemented by self-archiving the Postprint in the author's own institutional repository as follows:

Maximized Research Access and Impact Through Self-Archiving



13. But only about 15% of the annual 2.5 million research articles are being made freely accessible on the WWW spontaneously today.

14. Gold Open Access depends on the publishing community.

15. Green Open Access depends only on the research community.

16. The research community cannot require the publishing community to convert to Gold Open Access.

17. But the research community can itself convert to Green Open Access.

18. Southampton created the free *EPrints* software to allow all universities to create their own institutional repositories very cheaply and easily.

http://www.eprints.org/

19. *EPrints* repositories are all compliant with the OAI Protocol for metadata harvesting.

http://www.openarchives.org/

20. This means that all those distributed repositories are interoperable:

Their metadata can be harvested and jointly searched as if their contents were all in one central repository.

21. But creating institutional repositories is only a necessary condition, not a sufficient condition, for providing 100% Open Access:

Registry of Open Access Repositories (ROAR): 1000 archives but still mostly empty!

http://roar.eprints.org/

Country

1 United States (215)
2 United Kingdom (102)
3 Germany (79)
4 Brasil (53)
5 Canada (40)
6 France (38)
7 Japan (35)
8 Sweden (34)
9 Australia (33)
9 Spain (29)
10. Italy (28

* India (24)
* Netherlands (24)
* Belgium (13)
* Denmark (6)
* China (5)
* Mexico (5)
* Finland (4) **(11)**
* Switzerland (4)
* Portugal (4)
* Hungary (4)
* Portugal (4)
* South Africa (4)
* Chile (3)
* Austria (3)
* Colombia (3)

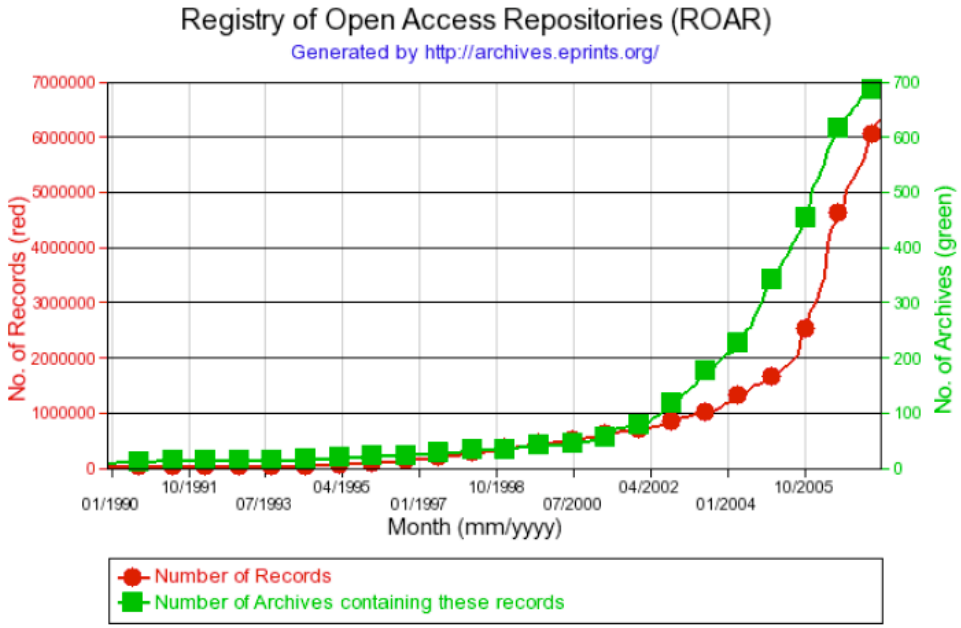
* Ireland (2)
* Norway (2)
* Russia (2)
* Greece (2)
* Turkey (1)
* Argentina (1)
* Israel (1)
* Slovenia (1)
* Croatia (1)
* Namibia (1)
* Peru (1)
* Taiwan (1)
* Pakistan (1)
* New Zealand (1
* Costa Rica

*

Archive Type

* **Research Institutional or Departmental (467)**
* **Research Cross-Institution (77)**
* **e-Theses (84)**
* e-Journal/Publication (102)
* Database (18)
* Demonstration (24)
* Other (134)

Software	Archives	Records	Mean
DSpace	**242**	**937833**	**5097**
EPrints	**231**	**323015**	**1489**
BEPress	56	136158	2670
OPUS	26	13377	608
ETD-db	**23**	**343840**	**18097**
Other (various)	228		



22. Only about 15% of institutional research output is being self-archived spontaneously today.

23. It is helpful to provide incentives to self-archive, such as, download statistics, publicity, help from librarians in depositing, or even small financial incentives.

But Arthur Sale's studies have shown that *incentives are not sufficient*, and can only increase self-archiving to about 30%.

http://eprints.comp.utas.edu.au:81/perl/search?abstract%2Fkeywords%2Ftitle=&abstract%2Fkeywords%2Ftitle_srchtype=ALL&authors%2Feditors=Sale&authors%2Feditors_srchtype=ALL&year=&_satisfyall=ALL&_order=byyearoldest&_action_search=Search

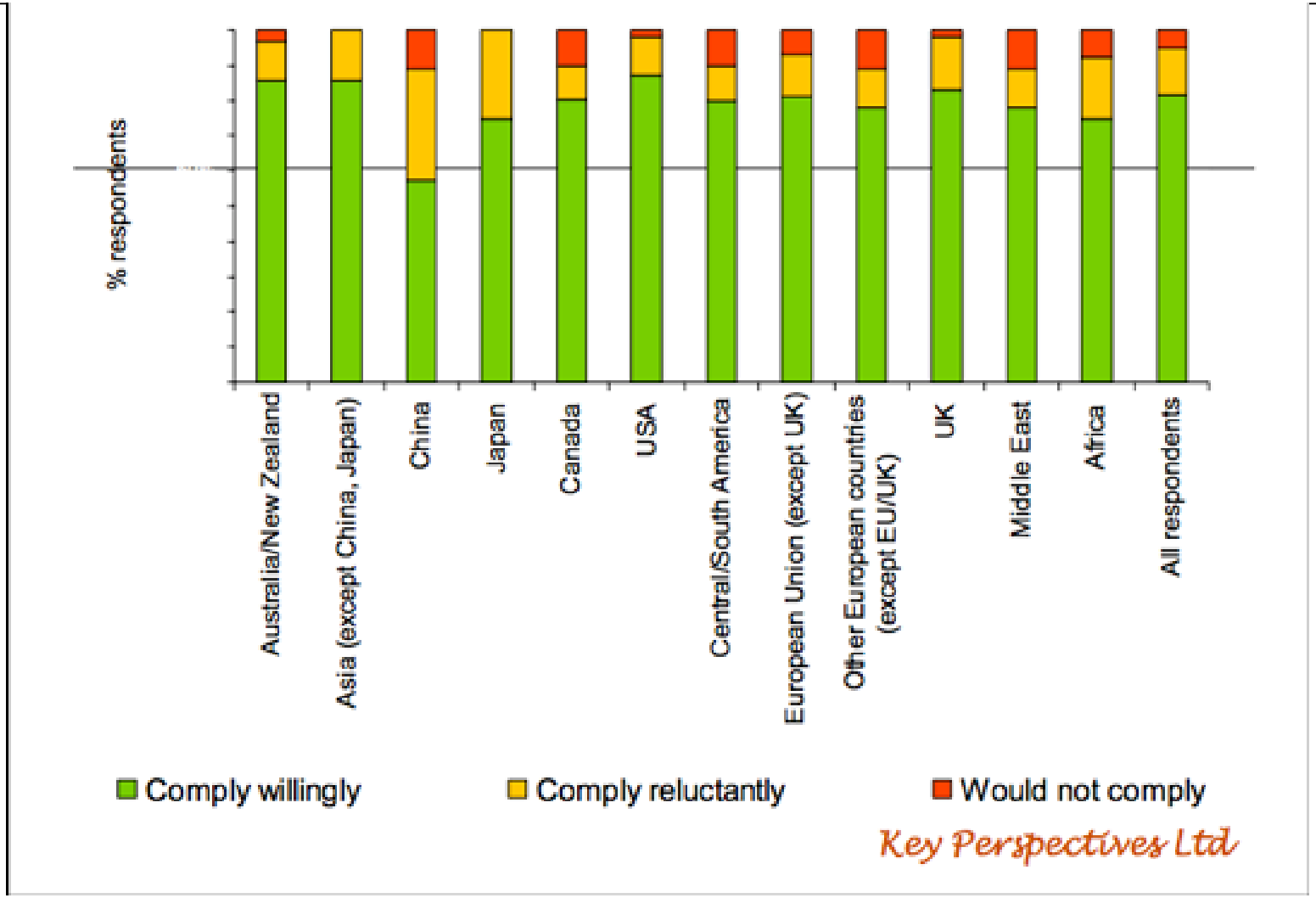
24. The only successful way to guarantee 100% self-archiving is for universities and research funders to make the self-archiving of published research articles an administrative requirement: a mandate

25. Universities and research funders already mandate publishing itself, as a condition of employment and funding ("publish or perish"), in order to maximise research usage and impact in the paper era.

26. A self-archiving mandate is just a natural extension of the existing publishing mandatet, for the web era.

27. International surveys of researchers in all disciplines have already found that 95% of researchers would comply with a self-archiving mandate:

http://eprints.ecs.soton.ac.uk/10999/



Across all countries and disciplines, 95% of researchers report that they would comply with a self-archiving mandate from their funders and/or employers, and over 80% report that they would do so willingly. -- But only 15% self-archive spontaneously, if it <u>not</u> mandated.

28. Arthur Sale's comparisons of the self-archiving percentage of institutions with

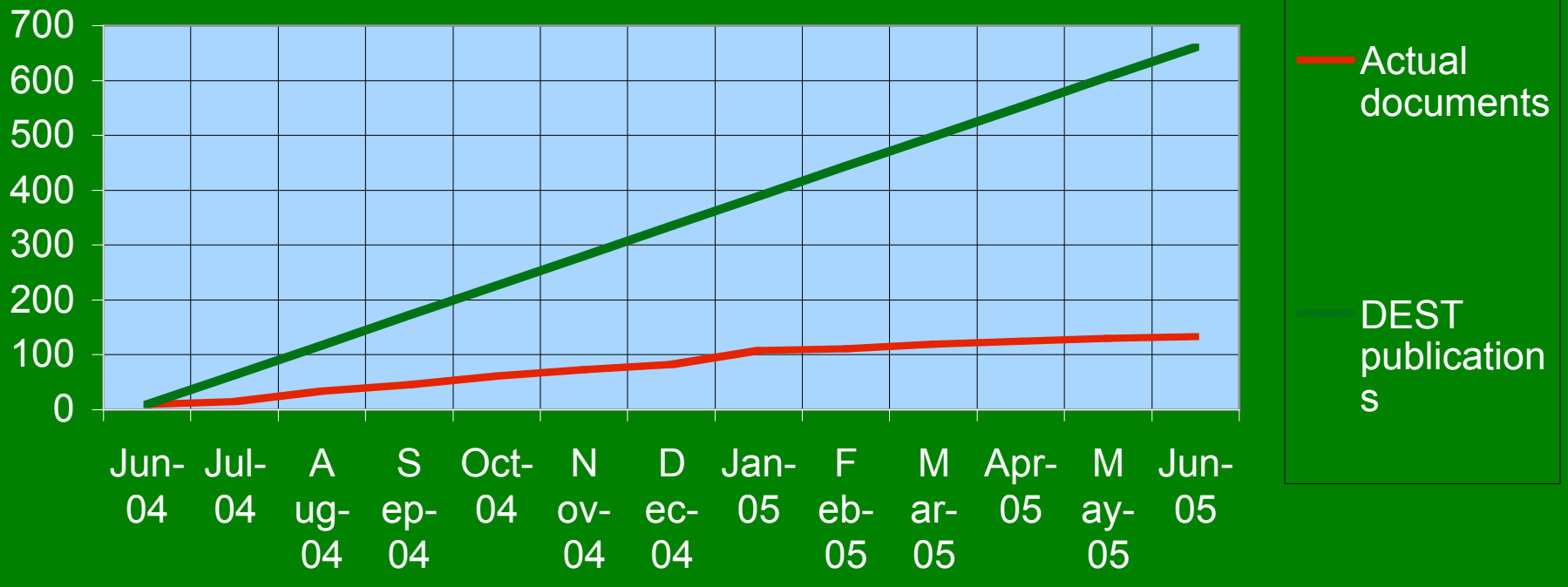
Repositories only (R -I -M)

Repositories plus Incentives (R +I -M)

Repositories plus Incentives plus a self-archiving Mandate (R+I+M)

show that Repositories and Incentives alone are insufficient: Only with Mandates are they successful in attaining 100% self-archiving.

University of Tasmania
+Repository -Incentive -Mandate
Green line: **total annual output**
Red line: **proportion self-archived**



Data courtesy of Arthur Sale

University of Queensland

+Repository +Incentive -Mandate

Green line: **total annual output**

Red line: **proportion self-archived**

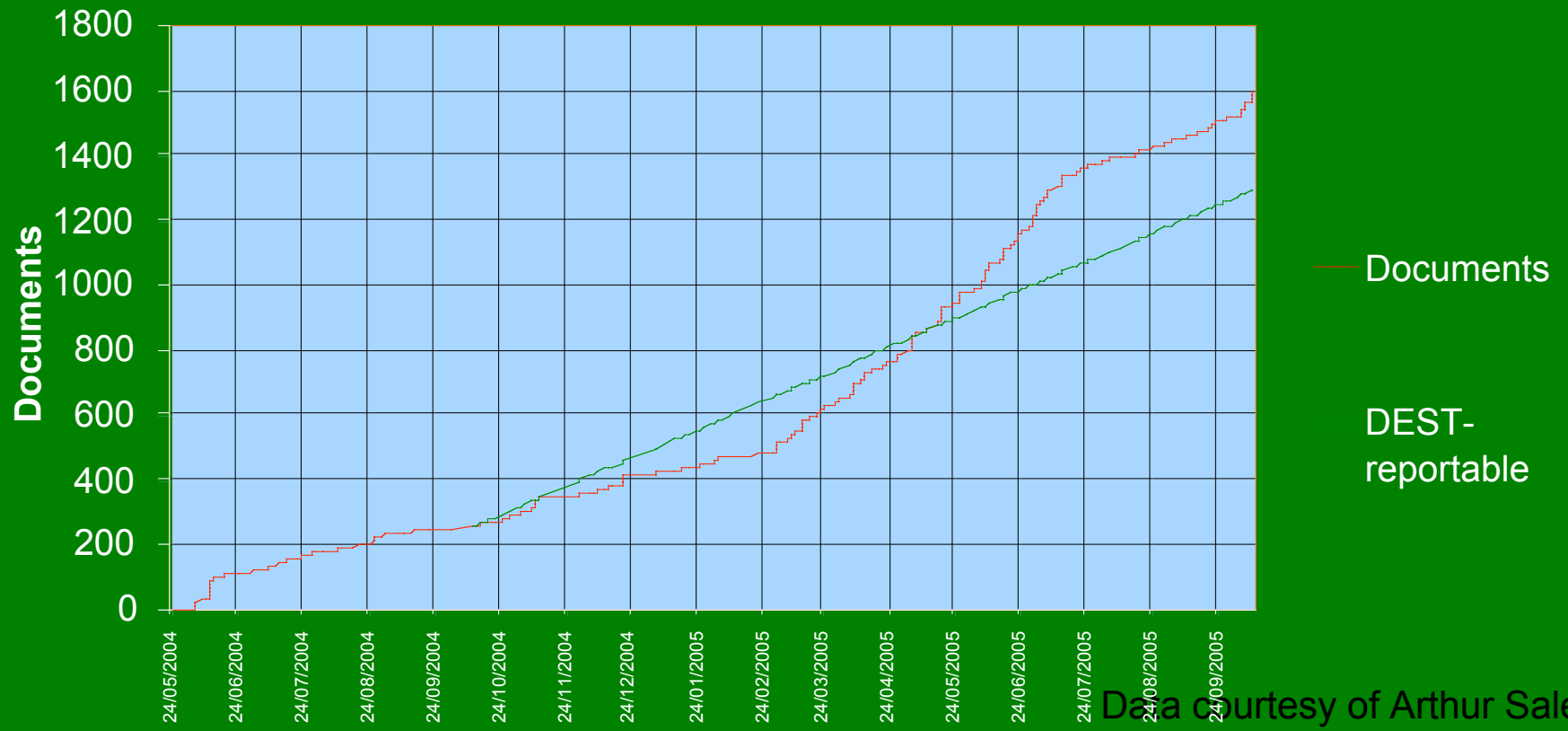
Data courtesy of Arthur Sale

Queensland University of Technology

+Repository +Incentive +Mandate

Green line: total annual output

Red line: proportion self-archived



Data courtesy of Arthur Sale

Sale, Arthur (2006) Researchers and institutional repositories, in Jacobs, Neil, Eds. *Open Access: Key Strategic, Technical and Economic Aspects* Chandos Publishing (Oxford) Limited. http://eprints.utas.edu.au/257/

Sale, A. The Impact of Mandatory Policies on ETD Acquisition. *D-Lib Magazine* April 2006, 12(4). http://dx.doi.org/10.1045/april2006-sale

Sale, A. Comparison of content policies for institutional repositories in Australia. *First Monday*, 11(4), April 2006. http://firstmonday.org/issues/issue11_4/sale/index.html

Sale, A. The acquisition of open access research articles. *First Monday*, 11(9), October 2006. http://www.firstmonday.org/issues/issue11_10/sale/index.html

Sale, A. (2007) The Patchwork Mandate *D-Lib Magazine* 13 1/2 January/February http://www.dlib.org/dlib/january07/sale/01sale.html

29. Worldwide, a total of 35 Green OA self-archiving mandates have already been adopted and 8 more proposed so far:

adopted: 21 funder mandates, 11 institutional mandates, 3 departmental mandates,

proposed: 1 institutional mandate, 2 proposed multi-institutional mandates.

ROARMAP (Registry of OA Repository Mandates):
http://www.eprints.org/openaccess/policysignup/

ROARMAP (Registry of Open Access Repository Material Archiving Policies)

as recommended by the Berlin Declaration

Register your Institutional Policy in ROARMAP:

English -- Arabic Chinese French German Hebrew Italian Japanese Russian Spanish

Register your Institutional Archive in ROAR

Country	Institution	OA Archive(s)	OA Policy
AUSTRALIA * **departmental-mandate**	University of Tasmania School of Computing	**[growth data]** http://eprints.comp.utas.edu.au/	Policy details
AUSTRALIA * **funder-mandate**	Australian Research Council	http://leven.comp.utas.edu.au/AuseAccess/pmwiki.php?n=General.UniPolicies	Policy details
AUSTRALIA * **funder-mandate**	National Health and Medical Research Council	http://leven.comp.utas.edu.au/AuseAccess/pmwiki.php?n=General.UniPolicies	Policy details
AUSTRALIA * **institutional-mandate**	Queensland University of Technology	**[growth data]** http://eprints.qut.edu.au/	Policy details
AUSTRALIA * **institutional-mandate**	University of Tasmania	**[growth data]** http://eprints.utas.edu.au/	Policy details
AUSTRIA	Foerderung der wissenschaftlichen Forschung	http://www.fwf.ac.at/de/public_relations/oai/index.html	Policy details
BELGIUM* **funder-mandate**	Research Foundation Flanders	http://roar.eprints.org/	Policy details
BELGIUM* **institutional-mandate**	Université de Liège	http://roar.eprints.org/	Policy details
BRAZIL* **proposed multi-institutional-mandate**	Brazil, House of Representatives	http://roar.eprints.org/	Policy details
CANADA	Athabasca University	**[growth data]** http://auspace.athabascau.ca/	Policy details

30. Several other important proposals to mandate Green OA self-archiving are under consideration in the USA, Europe, and elsewhere

(The US has just adopted the NIH Green OA self-archiving mandate).

31. It is crucial that both funders and universities mandate Green OA self-archiving, as not all research is funded.

32. Researchers are already rewarded not just in proportion to how many articles they publish, but how many times their articles are cited.

33. It is accordingly a natural step to link the self-archiving mandate to research performance assessment.

34. Research performance metrics in turn provide incentives for motivating and rewarding self-archiving.

35. Open Access will generate many rich new metrics that can be used to assess research impact:

Some Potential Metrics

- Citations (C)
- CiteRank
- Co-citations
- Downloads (D)
- C/D Correlations
- Hub/Authority index
- Chronometrics:
  - Latency/Longevity
- Endogamy/Exogamy
- Book citation index
- Research funding
- Students
- Prizes
- h-index
- Co-authorships
- Number of articles
- Number of publishing years
- Semiometrics (latent semantic indexing, text overlap, etc.)

36. These metrics can be validated in the UK Research Assessment Exercise (RAE), discipline by discipline, through multiple regression analysis:

The metrics can be weighted by their ability to predict the rankings given by the evaluation by human peer panels:

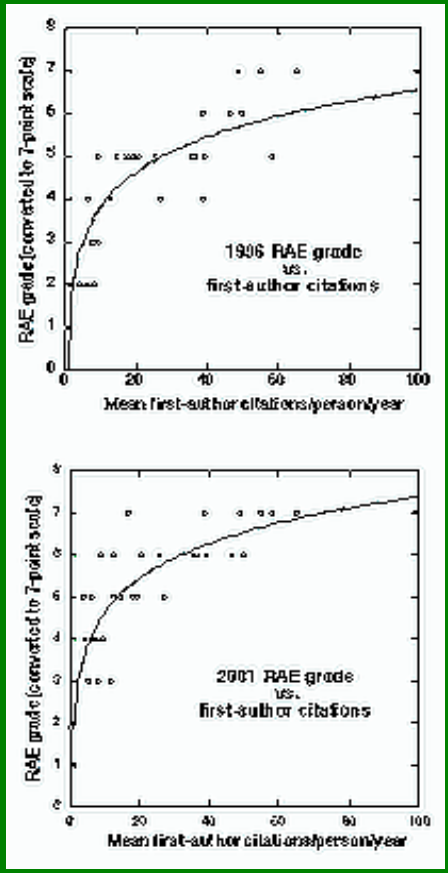
UK's RAE 2008 will be a parallel panel/metric exercise, making it possible to develop a rich spectrum of candidate metrics and to validate each metric against the panel rankings, discipline by discipline, through multiple regression analysis, determining and calibrating the ("beta") weights on each metric.

Harnad, S. (2007) Open Access Scientometrics and the UK Research Assessment Exercise. *Proceedings of 11th Annual Meeting of the International Society for Scientometrics and Informetrics* 11(1) : 27-33, Madrid, Spain. Torres-Salinas, D. and Moed, H. F., Eds. http://eprints.ecs.soton.ac.uk/13804/

RAE 2001 Rankings for Psychology

	2001 Rating	Proportion of Staff Selected	Category A and A* Research Active Staff (FTE)
Birkbeck College	5	B	18.7
University of Birmingham	5*	C	28.7
Bolton Institute of Higher Education	3b	D	12.0
University of Bristol	5*	A	28.3
Brunel University	4	B	15.0
University of Cambridge	5*	A	27.5
University of Central Lancashire	3a	E	9.2
City University	4	A	16.0
Coventry University	2	D	11.0
University of Derby	3a	C	13.5
University of Durham	5	A	24.0
University of East London	3a	C	18.5
University of Essex	5	A	19.0
University of Exeter	5	B	18.5
Goldsmiths College	4	A	24.0
University of Greenwich	3b	C	11.0
University of Hertfordshire	4	B	17.8
University of Hull	3a	C	16.5
Keele University	4	B	15.0
University of Kent at Canterbury	4	B	16.0
King Alfred's College, Winchester	2	B	6.0
Lancaster University	5	A	23.0
University of Leeds	5	C	24.1
University of Leicester	4	B	27.0
University of Lincoln	2	D	10.0
University of Liverpool	4	C	21.0
Liverpool Hope	2	D	7.2
London Guildhall University	3b	D	12.0
Loughborough University	4	B	14.3
University of Luton	2	E	6.0
University of Manchester	5	B	20.0
Manchester Metropolitan University	3a	D	10.5
Middlesex University	3a	D	13.5
University of Newcastle	5*	C	15.0
University of Northumbria at Newcastle	4	D	9.1
University of Nottingham	5	A	25.0
Nottingham Trent University	3a	C	10.7
Open University	4	D	12.0
University of Oxford	5*	A	36.6
Oxford Brookes University	3a	C	10.0
University of Plymouth	5	C	17.4
University of Portsmouth	3a	D	13.4
University of Reading	5*	B	20.0
Royal Holloway, University of London	5	A	20.4
University of Sheffield	5	A	36.4
Sheffield Hallam University	3b	C	10.0
University of Southampton	5	A	29.0
Staffordshire University	3a	D	9.0
University of Sunderland	3b	D	13.0
University of Surrey	5	A	25.0
University of Surrey Roehampton	3a	E	7.0
University of Sussex	5	A	12.0
Thames Valley University	1	C	4.7
University College London	5*	B	50.0
University of Warwick	5	B	15.0
University of Westminster	3a	D	11.0
University of Wolverhampton	3b	D	11.0
University College Worcester	2	D	7.0
University of York	5*	A	21.0

Research Assessment, Research Funding, and Citation Impact



"Correlation between RAE ratings and mean departmental citations +0.91 (1996) +0.86 (2001) (Psychology)"

"RAE and citation counting measure broadly the same thing"

"Citation counting is both more cost-effective and more transparent"

(Eysenck & Smith 2002)

http://psyserver.pc.rhbnc.ac.uk/citations.pdf

What is a Citation Worth?

Diamond, Jr. , A. M. (1986) *Journal of Human Resources* 21:200
http://www.garfield.library.upenn.edu/essays/v11p354y1988.pdf

marginal dollar value of one citation in 1986:

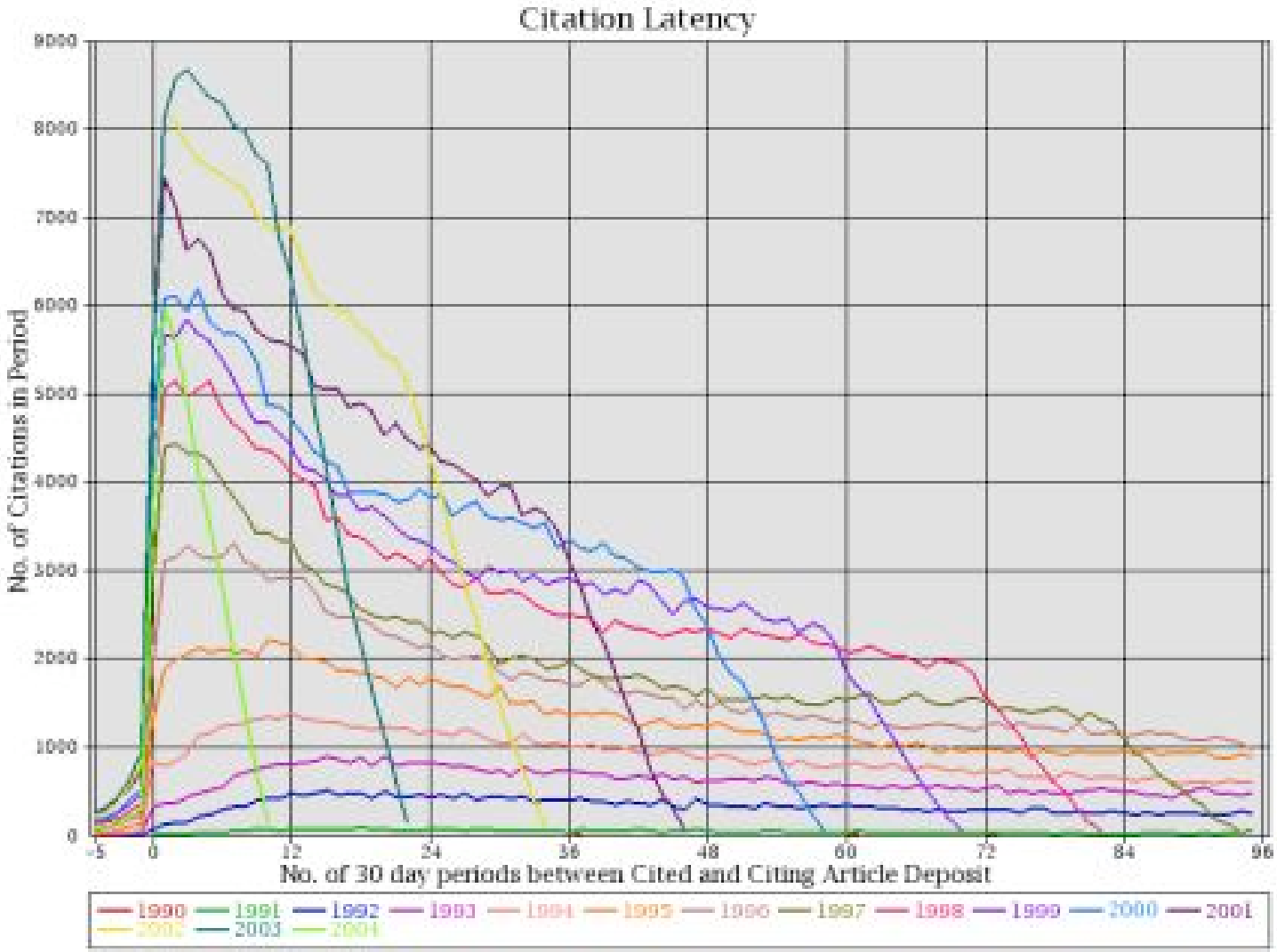
$50 - $1300

(depending on field and number of citations)

updating by about 170% for inflation from 1986-2005:

$85.65 - $2226.89

(an increase from 0 to 1 citation is worth more than an increase from 30 to 31; most articles are in citation range 0-5)

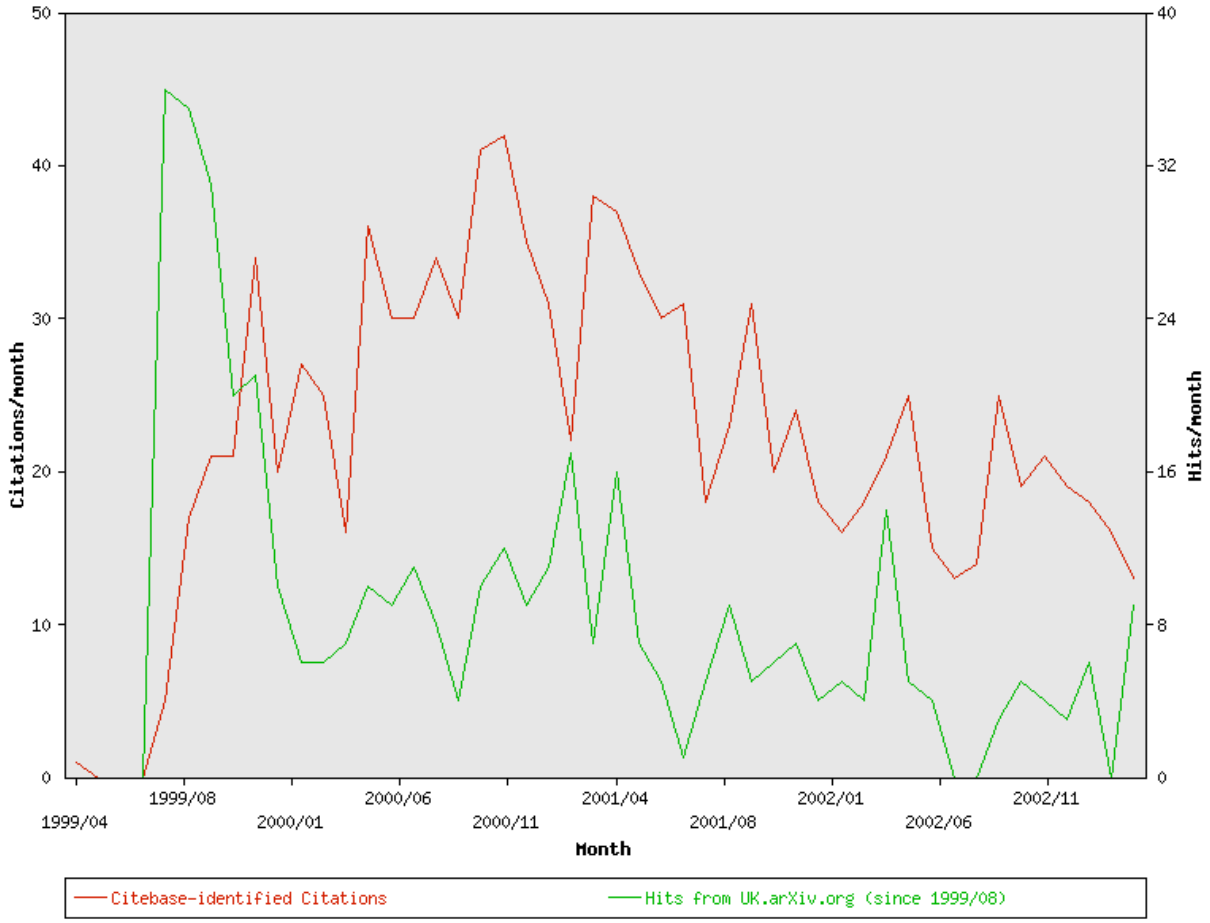


Early Access Advantage: OA is accelerating the research access/usage/citation cycle. OA articles are being cited sooner and sooner

(Data from Physics Arxiv)

Time-Course and cycle of Citations (red) and Usage (hits, green)

Witten, Edward (1998) String Theory and Noncommutative Geometry *Adv. Theor. Math. Phys*. 2 : 253

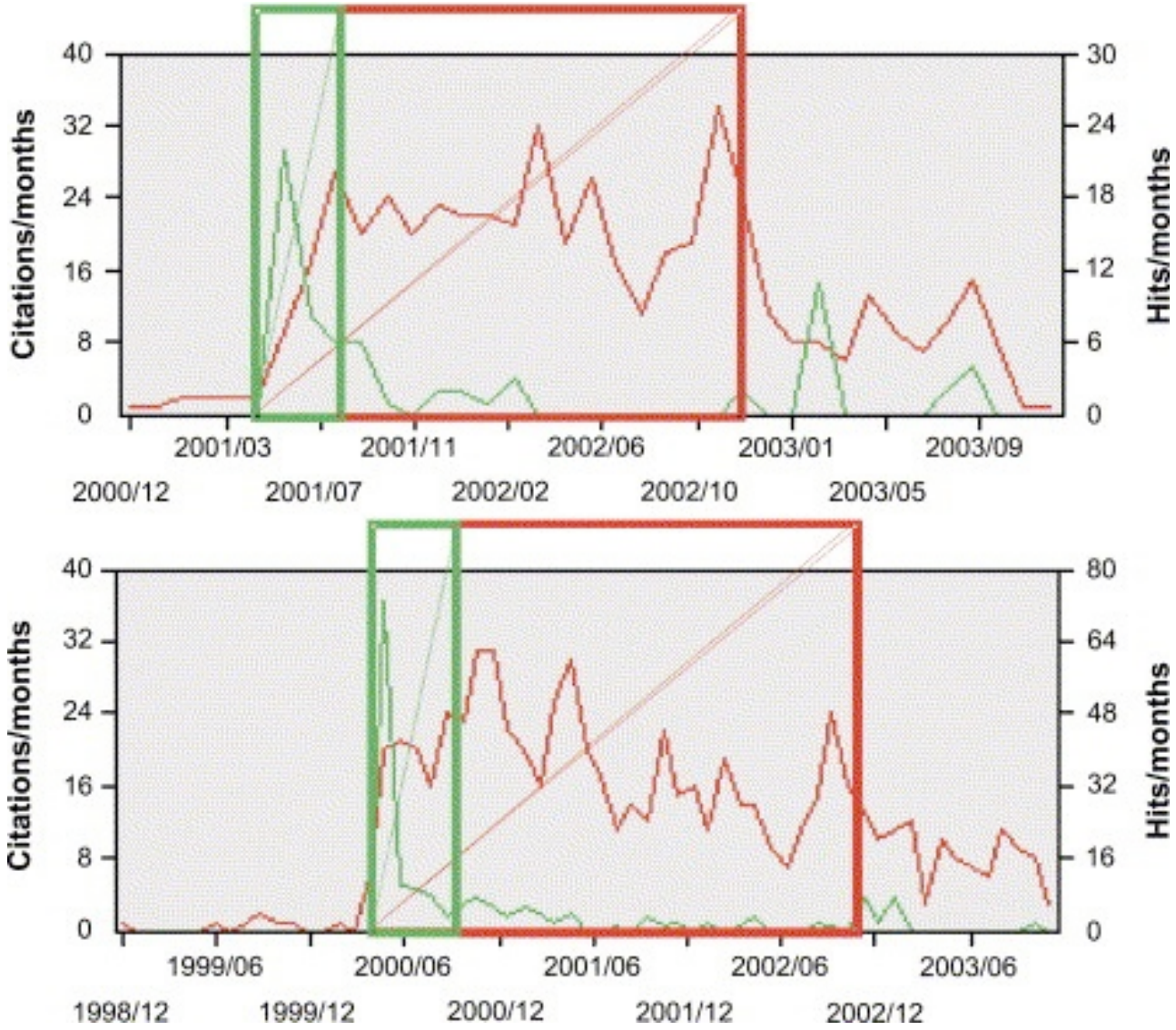


1. Preprint or Postprint appears.
2. It is downloaded (and sometimes read).
3. Next, citations may follow (for more important papers)…
4. This generates more downloads…
5. More citations...

Data from arXiv

Downloads (**"hits"**) in the first 6 months correlate with citations 2 years later

Most articles are not cited at all



Earlier download metrics correlated with later citation metrics

Brody, T., Harnad, S. and Carr, L. (2006) Earlier Web Usage Statistics as Predictors of Later Citation Impact. *Journal of the American Association for Information Science and Technology (JASIST)* 57(8): 1060-1072. http://eprints.ecs.soton.ac.uk/10713/

37. The mandate should be to

- **deposit all articles**
- **in the Institutional Repository**
- **immediately upon acceptance for publication.**

38. The optimal Green OA mandate is to require *immediate deposit* and *immediate Open Access*.

39. But if there is any delay or opposition to an Immediate-Deposit/Immediate-OA mandate, then the compromise

Immediate-Deposit/Delayed-Open-Access **(ID/OA)**

mandate should be adopted:

40. The author's final, peer-reviewed draft must be deposited *immediately upon acceptance for publication*.

But access to it can be set as either Open Access or Closed Access (for a limited period, preferably no more than 6 months).

41. The majority of journals (62%) already endorse immediate Green Open Access Self-Archiving.

ROMEO/EPRINTS (Directory of Journal Policies on author OA Self-Archiving): http://romeo.eprints.org/

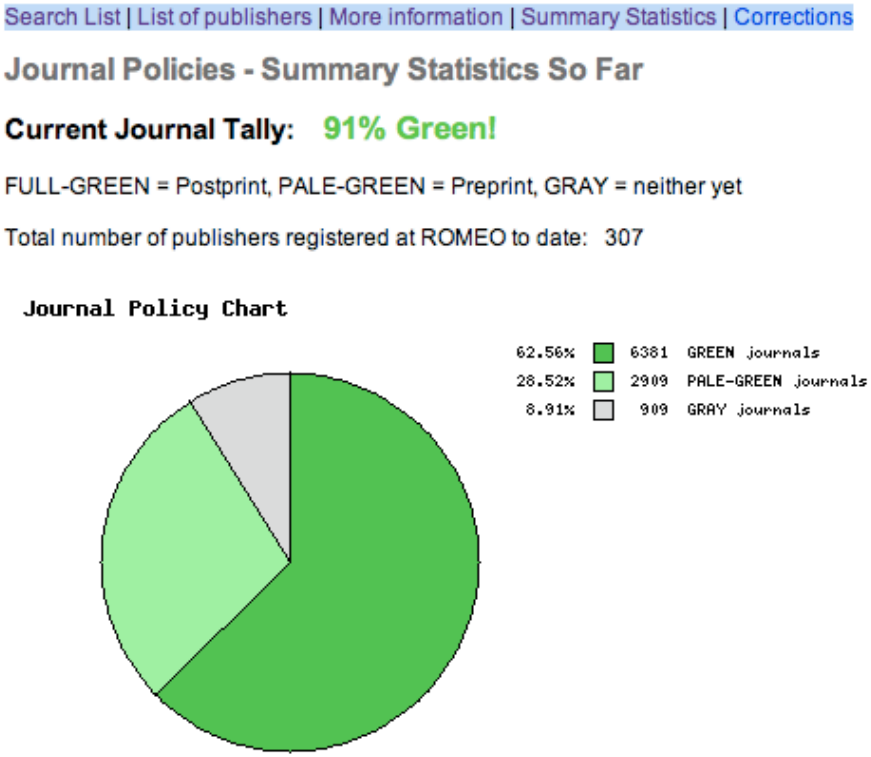
What About Copyright?

Mandate **ID/OA: Immediate Deposit, Optional Access:**

All articles must be deposited immediately upon acceptance for publication. Publishers have no say over institution-internal record-keeping.

Embargoed articles can be made *Closed Access* instead of *Open Access.*

62% of journals are Green (already endorse immediate OA)



ROMEO/EPRINTS (Directory of Journal Policies on author OA Self-Archiving):
http://romeo.eprints.org/

42. For the articles in the 38% of journals that have an embargo policy, the free EPrints institutional Repository-creating software has an ”Eprint Request" Button:

The user who reaches the metadata for a Closed Access article puts his email in a box and clicks.

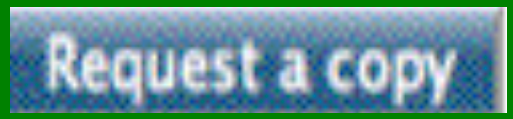
This sends an automatic email to the author, with a URL on which the author clicks to automatically email the eprint to the requester.

The ID/OA mandate applies (with no exceptions or delays) to the deposit of the author's final, peer-reviewed draft ("postprint").

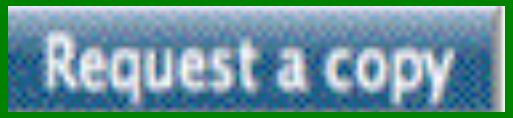
This must be deposited *immediately upon acceptance for publication*, but the deposit need not be made Open Access.

Where access is embargoed (38%), the deposit can be made Closed Access.

During the embargo period, the Institutional Repository's



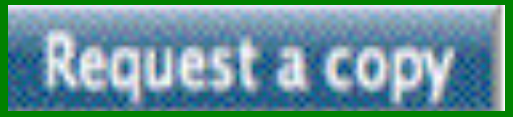
Button provides **Almost-Instant, Almost-OA**, for just a few extra keystrokes, as follows:

How the EPrints 

Button works:

Almost-Instant, Almost-OA, STEP I:

First, suppose a potential user anywhere on the web sees the metadata (author, date, title, journal) for a document they need (from searching with Google or Google Scholar, or Citebase, or OAIster or any other search engine).

If that document is not Open Access, but Closed Access, then the Institutional Repository link will reach the following page, showing the document's metadata with the 

Button:

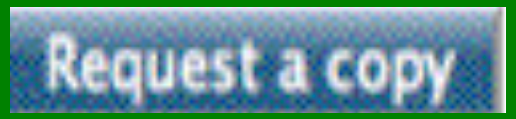
Open Access Mandates and Metrics

Harnad, Stevan (2007) *Open Access Mandates and Metrics*. Science Editor, 50 (10). pp. 500-510.

Abstract

Open Access is optimal and inevitable for research, researchers, their institutions and funders, the vast R&D industry, and the tax-paying public that funds research. OA Scientometrics is now poised to usher in the OA era at long last.

Almost-Instant, Almost-OA, STEP II:

The eprint requester then presses the 

Button, (**1 requester keystroke**) which immediately generates a box that allows the requester to cut/paste his email address into it and then click (**3 requester keystrokes**)

(in addition, optionally, requesters may also identify themselves if they wish, and/or specify for the author why they need the eprint):

Request a copy

Harnad, Stevan (2007) *Open Access Mandates and Metrics*. Science Editor, 50 (10). pp. 500-510.

Plain Text (embargoed articles) - Repository staff only until 27 July 2008
40Kb

Email address
Enter your email address.
myemail@wherever.edu

Reason
You may enter a rationale for requesting this document.
Please send me a copy for research purposes

Request a copy

Almost-Instant, Almost-OA, STEP III:

The author instantly receives the following email, to which he can reply with one click either to accept or to reject the eprint request (**1 author keystroke**).

(If the author accepts, one copy of the eprint is instantly emailed to the requester by the Institutional Repository software.)

From: DemoPrints XXX@ecs.soton.ac.uk
Date: July 28, 2007 12:51:43 AM EDT (CA)**To:** XXX@ecs.soton.ac.uk
Subject: Request for "Open Access Mandates and Metrics"

The following item:

Harnad, S (2007) *Open Access Mandates and Metrics.* *Science Metrics*, 50 (10): 500-510.

has been requested from DemoPrints by:

myemail@wherever.edu

The following reason was given:

"Please send me a copy for research purposes."

Please respond by clicking one of the following:

Accept the request (eprint will be emailed automatically)

Reject the request (request will be declined)

(Please also consider removing the access restrictions so that your eprint is directly available to users without the need for these extra keystrokes.)

DemoPrints http://demoprints3.eprints.org/

The author has already done the N keystrokes needed to deposit the document in his IR in the first place, immediately upon acceptance for publication.

For 62% of deposits, the author can immediately set access as Open Access, with the publisher's blessing.

For the 38% of deposits where access is embargoed by the publisher, the author does ***one extra keystroke per request*** *-- considerably less that he did in paper reprint request days, when reprints had to be mailed and the turnaround time was weeks rather than minutes.*

With the ID/OA mandate universally adopted, the embargoes will soon become obsolete, under growing OA pressure worldwide.

Carr & Harnad (2005) **Keystroke Economy: A Study of the Time and Effort Involved in Self-Archiving**. http://eprints.ecs.soton.ac.uk/10688/

The free EPrints University Repository Software generates rich (and potentially even richer) usage metrics. It can be used for showcasing, navigating, comparing and assessing.

Here is a sample of University Repository usage metrics for Southampton author Tim Berners-Lee:

http://stats.eprints.ecs.soton.ac.uk/cgi-bin/irstats.cgi?

This page allows you to generate graphs and tables of data summarising the usage data for eprints in the repository. Select the data you want to graph in 'Set of Eprints', choose the date range to process in 'Date Range', select the type of analysis to make in 'Choice of View' and then click 'Generate'.

Set of Eprints

You can choose to only include data for particular sets (e.g. eprints deposited by a named author) or show data for only a single eprint.

- ○ All
- ○ Research Group: Choose a Research Group
- ◉ Creators Name: Berners-Lee, T. (7113)
- ○ Eprint ID:

Date Range

Change the period of access log data included based on when the request was made. Warning! The more data you include the longer it will take to generate the results.

- ◉ Period: Last Quarter
- ○ From date: 1 January 2005
  Until date: 31 January 2005

The view determines how data is rendered and may provide additional data refinements (for example showing a summary for authors).

Summary Data

MonthlyDownloadsGraph

DailyDownloadsGraph

MonthlyUniqueVisitorsGraph

AllMonthlyDownloadsGraph

29327

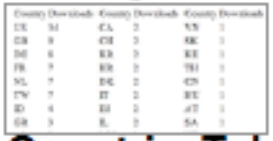
DownloadCountHTML

Simple Analyses

TopTenTable

ReferrerGraph

SearchEngineGraph



TopCountriesTable

Domain Tail	Downloads
soton.ac.uk	14489
cmu.edu	1473
tsinghua.edu.cn	402
ic.ac.uk	360
cam.ac.uk	336
nctu.edu.tw	307
aquinas.ac.uk	300
shef.ac.uk	292
nus.edu.sg	266
mit.edu	266
ox.ac.uk	258

TopTenAcademies

Complex Analyses

TopTenMonthlyDownloadsGraph

Author	Download Count
Hamad, Stevan	1210
Hall, Wendy	1097
Shadbolt, Nigel	987
Hauzo, Lajos	904
Berners-Lee, Tim	766
Jennings, Nick	578

TopTenAuthorsTable

TopTenTableDashLinked

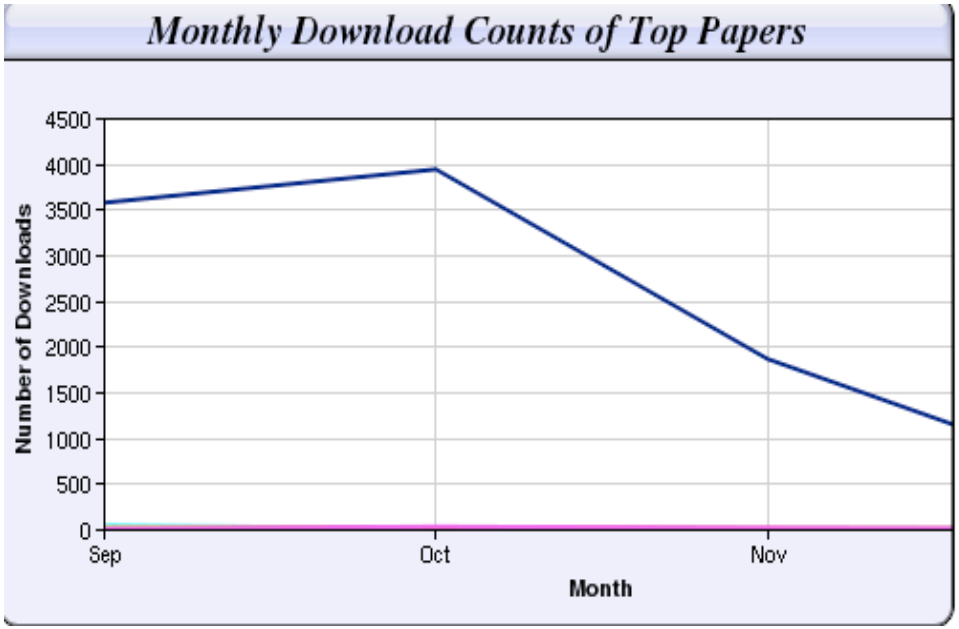
HighestClimbersTable

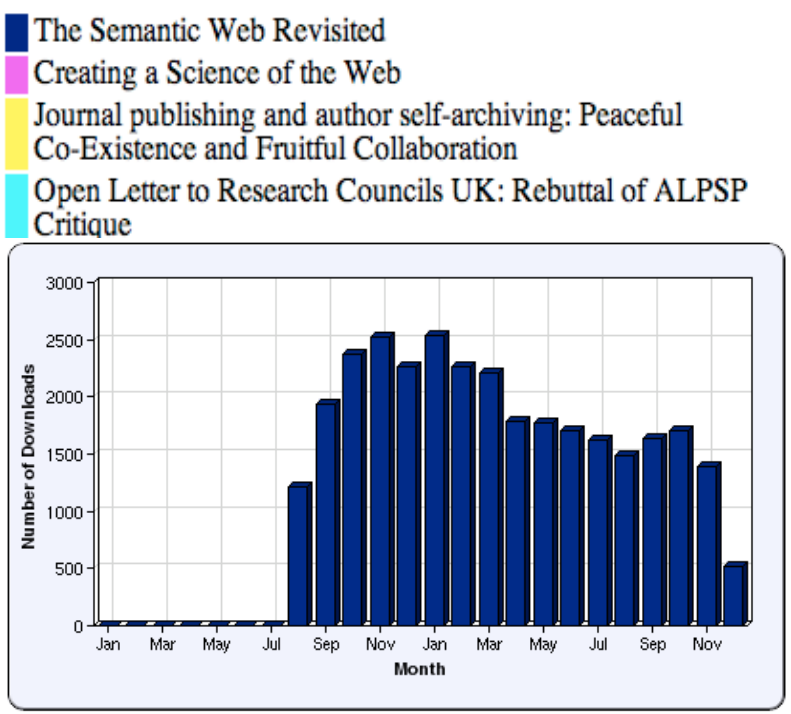
MonthlyDownloadsByGroupGraph

TopTenNonSearchReferrers

RandomFromTopTenHTML

Eprint	Fulltext Downloads
Shadbolt, N., Berners-Lee, T. and Hall, W. (2006) *The Semantic Web Revisited.* IEEE Intelligent Systems, 21 (3). pp. 96-101. ISSN 1541-1672	8194
Berners-Lee, T., Hall, W., Hendler, J., Shadbolt, N. and Weitzner, D. (2006) *Creating a Science of the Web.* Science, 313 (5788). pp. 769-771. ISSN 0036-8075	52
Berners-Lee, T., De Roure, D., Harnad, S. and Shadbolt, N. (2005) *Journal publishing and author self-archiving: Peaceful Co-Existence and Fruitful Collaboration.* (Unpublished)	41
Berners-Lee, T., De Roure, D., Harnad, S. and Shadbolt, N. (2005) *Open Letter to Research Councils UK: Rebuttal of ALPSP Critique.* (Unpublished)	15





Some EPrints download metrics for top deposits by Southampton author Tim Berners-Lee.

These Local EPrints University Repository Usage metrics are complemented by CITEBASE, which provides global Citation, Download, Citation, Co-citation, Hub/Authority and time-course metrics:

http://stats.eprints.ecs.soton.ac.uk/cgi-bin/irstats.cgi?

citebase Search

Citebase is currently only an experimental demonstration. Users are cautioned not to use it for academic evaluation yet. Citation coverage and analysis is incomplete and hit coverage and analysis is both incomplete and noisy.

Metadata | Citation | Identifier

Authors' name(s)

Title or Abstract Keywords

Publication Title

Record Year between and

Rank matches by Descending Citations (Paper) Search Reset

Search Result Rank-Ordering

The ranking controls the order in which results are shown.

Search Score

For author and keyword queries this is the relevance score returned by Xapian (the text-search tool).

Creation Date

The date the record first appeared. Based on the source archive's policy (archive dependent, can be a date given by the author or the date the record was added to the archive).

Last Update

The last time a change was made to the record (not necessarily the actual paper). Based on the source archive's policy.

Paper Citations - Caution

The total number of citations identified **by Citebase** to a paper.

Author Citations - Caution

The author impact of a paper is the mean author impact of that paper's named authors.

Author impact is the total number of citations identified by Citebase to papers that the author is named on, divided by the number of papers that same author is named on.

Paper Hits - Caution

The total number of web requests made for this paper. Web log usage data ("hits") (1) currently cover **only from August 1999 to the present** and (2) are based **only on the UK arXiv.org mirror-site usage** (the other 17 international mirror-sites, including the main one in the US are not currently covered).

Author Hits - Caution

The author hits of a paper is the mean author hits of that paper's named authors.

Author hits is calculated as the total number of hits to papers that the author is named on, divided by the number of papers that same author is named on.

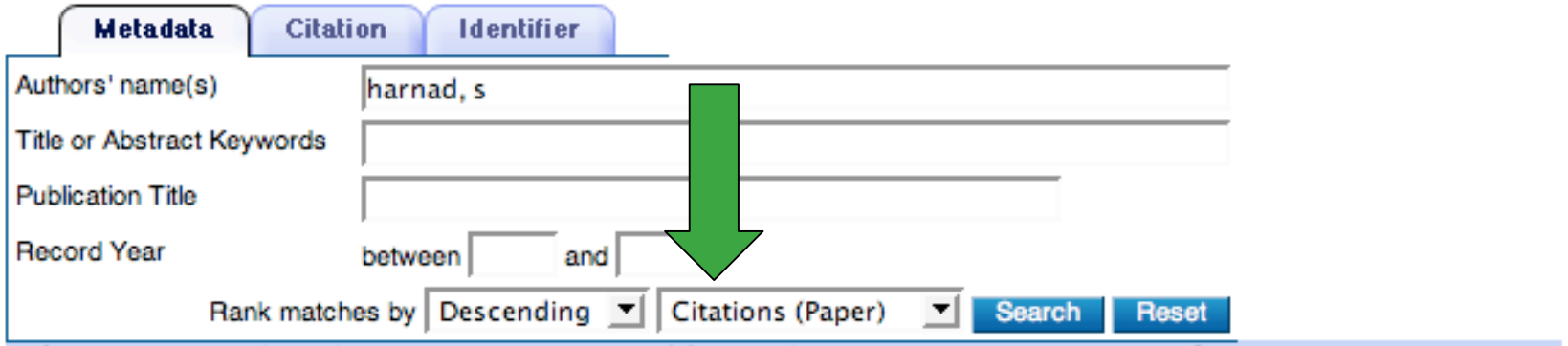
Hub/Authority Scores

These are experimental metrics.

Co-citedness

The degree to which two articles are related according to the co-occurence of citations.

Search Results



Showing 1 - 10 of 232 found [1-10 in BibTeX, RSS, Atom | 25, 100 results per page] Query took 0.664 seconds

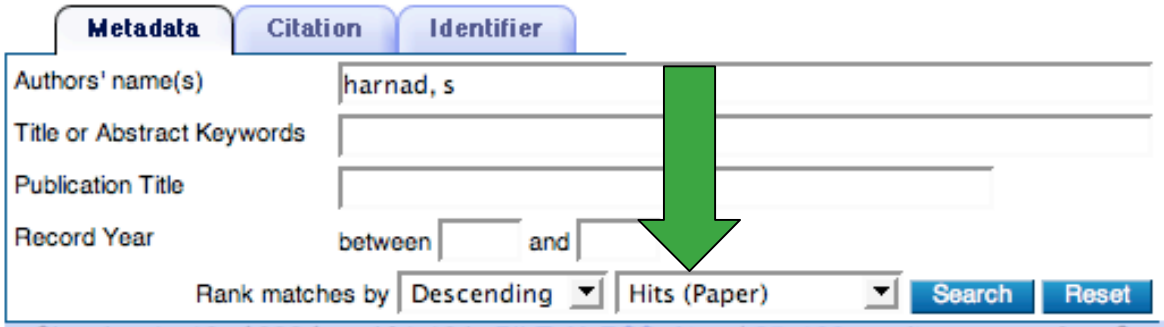
The Symbol Grounding Problem [Abstract, 69 Cites,]
69 **Harnad, Stevan** (1999-06-01) In *PHYSICA D 42 335 (1999)*
How can the semantic interpretation of a formal symbol system be made intrinsic to the system, rather than just parasitic on the meanings in our heads? How can the meanings of the meaningless symbol tokens, manipulated solely on the basis of their (arbitrary) shapes, be grounded in anything but other ...

Minds, Machines and Searle [Abstract, 28 Cites,]
28 **Harnad, Stevan** (1989-01-01) In *SEARLE.JOURNAL OF THEORETICAL AND EXPERIMENTAL ARTIFICIAL INTELL 1 5 (1989)*
Searle's celebrated Chinese Room Argument has shaken the foundations of Artificial Intelligence. Many refutations have been attempted, but none seem convincing. This paper is an attempt to sort out explicitly the assumptions and the logical, methodological and empirical points of disagreement. Searle is ...

Other bodies, Other minds: A machine incarnation of an old philosophical problem [Abstract, 27 Cites,]
27 **Harnad, Stevan** (1991-01-01) In *Minds and Machines 1 43 (1991)*
Explaining the mind by building machines with minds runs into the other-minds problem: How can we tell whether any body other than our own has a mind when the only way to know is by being the other body? In practice we all use some form of Turing Test: If it can do everything a body with a mind can do ...

Consciousness: An afterthought [Abstract, 26 Cites,]
26 **Harnad, Stevan** (1982-01-01) In *AN AFTERTHOUGHT.COGNITION AND BRAIN THEORY 5 29 (1982)*
Our sense that we do something deliberately may be an afterthought that arises after our brains have already triggered our action unconsciously. Consciousness itself may be a similar illusory afterthought, with ...

Search Results



Showing 1 - 10 of 232 found [1-10 in BibTeX, RSS, Atom | 25, 100 results per page] Query took 0.248 seconds

Free at Last: The Future of Peer-Reviewed Journals [Abstract, 14 Cites,]
3966 **Harnad, Stevan** (1999-01-01) In *JOURNALS.D-LIB MAGAZINE 5 12 (1999)*
I don't think there is any doubt in anyone's mind as to what the optimal and inevitable outcome of all this will be: The Give-Away literature will be free at last online, in one global, interlinked virtual library (see <http://www.cogsci.soton.ac.uk/~harnad/citation.html>), and its QC/C ...

Behavioral and Brain Sciences [Abstract]
3319 **Harnad, Stevan**oai:eprints.ecs.soton.ac.uk:2625

Implementing Peer Review on the Net: Scientific Quality Control in Scholarly Electronic Journals. [Abstract]
2685 **Harnad, Stevan** (1996-01-01) oai:cogprints.soton.ac.uk:1692
Electronic networks have made it possible for scholarly periodical publishing to shift from a trade model, in which the author sells his words through the mediation of the expensive and inefficient technology of paper, to a collaborative model, in which the much lower real costs and much broader reach of ...

Artificial Life: Synthetic Versus Virtual [Abstract]
2419 **Harnad, Stevan** (1993-01-01) In *SYNTHETIC VERSUS VIRTUAL.SANTA FE INSTITUTE STUDIES IN THE SCIEN 16 593 (1993)*
Artificial life can take two forms: synthetic and virtual. In principle, the materials and properties of synthetic living systems could differ radically from those of natural living systems yet still resemble them enough to be really alive if they are grounded in the relevant causal interactions with the ...

Searle's Chinese Room Argument [Abstract]
1988 **Harnad, Stevan** (2003-01-01) oai:cogprints.soton.ac.uk:4075
Summary of Searle's "Chinese Room Argument" showing that cognition cannot be just computation. Searle implements a computer programme that can pass the Turing Test in Chinese. Searle does not understand Chinese in doing so, hence neither does the computer.

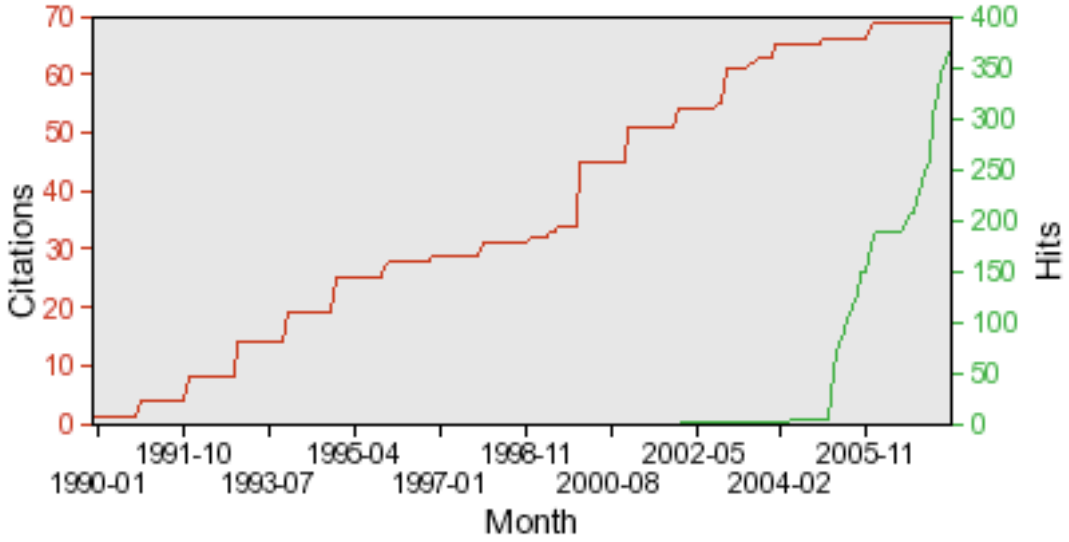
Search Citebase | Information and Help | Impact Health | Search
Warning | Login/Register

The Symbol Grounding Problem

Authors: Harnad, Stevan

See also (explain?): **oai:arXiv.org:cs/9906002**, oai:eprints.ecs.soton.ac.uk:382, oai:eprints.ecs.soton.ac.uk:8175, oai:cogprints.soton.ac.uk:3106, oai:cogprints.soton.ac.uk:615

	Citations	Downloads
To this article	69	366
To authors (mean)	3.15	319.33



Citations | Downloads | Authors

Cited by | References | Co-cited with | Cites similar articles to

Show the top 5 most cited articles that have been identified by Citebase as citing this article (to see all citing articles identified by Citebase follow the bottom link)

Sample citation and download growth with time. (*Downloads only start in 2005 because that is when this paper was deposited*.) Early growth rate and late decay metrics for downloads and citations can also be derived.

SUMMARY:

OA: How? Universities and funders mandate Green OA self-archiving

Deposit Where? In universities' own Institutional Repositories (IRs)

Deposit How? A few minutes of keystrokes per paper is all that stands between the world research community and 100% OA

Deposit What? Author's final, revised, peer-reviewed draft ("postprint")

Deposit When? Immediately upon acceptance for publication

Optimizing OA Self-Archiving Mandates: What? Where? When? Why? How?
http://openaccess.eprints.org/index.php?/archives/136-guid.html

Open Access: How?

Universities adopt the ID/OA mandate:

Immediate Deposit

+

Optional Access

+

Open Access: Why?

1. To maximise the uptake, usage, applications and impact of the research output of your university

2. To measure and reward the uptake, usage, applications and impact of the research output of your university (research metrics)

3. To collect (and showcase and manage) a permanent record of the research output and impact of your university

Sample of candidate OA-era metrics:

- Citations (C)
- CiteRank
- Co-citations
- Downloads (D)
- C/D Correlations
- Hub/Authority index
- Chronometrics:
  - Latency/Longevity
- Endogamy/Exogamy
- Book citation index
- Research funding
- Students
- Prizes
- h-index
- Co-authorships
- Number of articles
- Number of publishing years
- Semiometrics (latent semantic indexing, text overlap, etc.)

Author's URLs (UQAM & Southampton):
http://www.crsc.uqam.ca/
http://users.ecs.soton.ac.uk/harnad/

BIBLIOGRAPHY ON OA IMACT ADVANTAGE:
http://opcit.eprints.org/oacitation-biblio.html

BOAI Self-Archiving FAQ: http://www.eprints.org/self-faq/

CITEBASE (scientometric engine): http://citebase.eprints.org/

EPRINTS: http://www.eprints.org/

OA ARCHIVANGELISM: http://openaccess.eprints.org/

ROAR (Registry of OA Repositories): http://roar.eprints.org/

ROARMAP (Registry of OA Repository Mandates):
http://www.eprints.org/openaccess/policysignup/

ROMEO/EPRINTS (Directory of Journal Policies on author OA Self-Archiving): http://romeo.eprints.org/

1995: Universal FTP Archives for Esoteric Science and Scholarship: A Subversive Proposal In: *Scholarly Journals at the Crossroads.* ARL. http://www.arl.org/scomm/subversive/toc.html

2001: Research access, impact and assessment *THES* 1487 http://cogprints.org/1683/

The Self-Archiving Initiative *Nature* 410 http://www.nature.com/nature/debates/e-access/Articles/harnad.html

Measuring and Maximising UK Research Impact *THES* http://eprints.ecs.soton.ac.uk/7728/

Mandated online RAE CVs Linked to University Eprint Archives. *Ariadne* 35 http://www.ecs.soton.ac.uk/~harnad/Temp/Ariadne-RAE.htm

2004: Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals & Brody *D-Lib* http://www.dlib.org/dlib/june04/harnad/06harnad.html

The Access/Impact Problem and the Green and Gold Roads to Open Access. et al *Nature* Web Focus. http://www.nature.com/nature/focus/accessdebate/21.html

2005: Journal publishing and author self-archiving: Peaceful Co-Existence Berners-Lee et al http://eprints.ecs.soton.ac.uk/11160/

Keystroke Economy: A Study of the Time and Effort Involved in Self-Archiving. Carr & Harnad http://eprints.ecs.soton.ac.uk/10688/

Ten-Year Cross-Disciplinary Comparison of the Growth of Open Access and Research Citation Impact. Hajjem et al *IEEE Data Engineering Bulletin* 28 http://eprints.ecs.soton.ac.uk/11688/

Making the case for web-based self-archiving *Research Money* 19 http://eprints.ecs.soton.ac.uk/11534/

2006: Self-archiving should be mandatory 2006 *Research Information* http://eprints.ecs.soton.ac.uk/12738/

The Open Research Web: A Preview of the Optimal and the Inevitable Shadbolt et al in *Open Access: Key Strategic, Technical and Economic Aspects* http://eprints.ecs.soton.ac.uk/12453/

2007: Open Access Scientometrics and the UK Research Assessment Exercise *Proc 11th Ann Mtg Int Soc Scientometrics and Informetrics* 11:27-33 http://eprints.ecs.soton.ac.uk/13804/

Time to Convert to Metrics Brody et al *Research Fortnight* 17 http://eprints.ecs.soton.ac.uk/14329/

Incentivizing the Open Access Research Web: Publication-, Data-Archiving and Scientometrics. Brody et al *CTWatch Quarterly* 3(3). http://eprints.ecs.soton.ac.uk/14418/