Note: The 2004 UK Government Science and Technology Committee report
   http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39909.htm
was extremely thoughtful and responsive.
   http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39903.htm

It essentially adopted the recommendations below in full, recommending that Open-Access Provision through institutional self-archiving should be made mandatatory for all journal articles resulting from UK-funded research. The next step will be for universities and research institutions to adopt and implement such a mandatory Open Access Provision policy: http://www.eprints.org/signup/sign.php

The February 2004 Southampton/Loughborough/EScience written recommendations co-signed by:

Dr. Les Carr (Southampton)
Professor Dave DeRoure (Southampton)
Professor Stevan Harnad (Southampton)
Dr. Jessie Hey (Southampton)
Professor Tony Hey (eScience)
Dr. Steve Hitchcock (Southampton)
Professor Charles Oppenheim (Loughborough)

http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/399we151.htm
http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/399we152.htm

See also the University of Southampton recommendations:
   http://www.ecs.soton.ac.uk/~harnad/Temp/soton7.doc

To UK Government Science and Technology Committee
RECOMMENDATIONS FOR UK OPEN-ACCESS PROVISION POLICY
http://www.parliament.uk/parliamentary_committees/science_and_technology_committee/scitech111203a.cfm
(Submitted February 2004)

Preamble

(1) Open access (worldwide) to UK research output maximises the impact (i.e., visibility, usage, application, citation) of UK research output, enhancing the productivity and progress of UK (and worldwide) research, thereby maximising the return on the UK tax-payer's support for research.

http://www.ecs.soton.ac.uk/~harnad/Temp/openaccess.htm

(2) It is essential to understand that the unified open-access provision strategy supported by the Budapest Open Access Initiative, the Berlin Declaration, and other such current movements involves two complementary strategies OAJ and OAA:

UNIFIED OPEN-ACCESS PROVISION POLICY:

> **(OAJ) Researchers publish their research in an open-access journal if a suitable one exists, _otherwise_**
>
> **(OAA) they publish it in a suitable toll-access journal and also self-archive it in their own research institution's open-access research archive.**

http://www.soros.org/openaccess/read.shtml
http://www.ecs.soton.ac.uk/~harnad/Temp/berlin.htm

(3) It would be a great mistake (and the press release already suggests some risk of making it) if open-access provision were to be mistakenly identified only, or even primarily, with OAJ (open access journal publishing). There are still far too few open-access journals, whereas OAA self-archiving has the power to provide immediate open access for all the rest of UK research output.

(4) What parliament should mandate is accordingly open-access <u>provision</u> for all funded research:

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0027.gif

The Science and Technology Committee's Inquiry into Scientific Publications
http://www.parliament.uk/parliamentary_committees/science_and_technology_committee/scitech111203a.cfm

The House of Commons Press Notice says:

> **_"The Committee will be looking at access to journals within   the scientific_**

***community, with particular reference to price and availability. It will be asking
what measures are being taken in government, the publishing industry and
academic institutions to ensure that researchers, teachers   and students have
access to the publications they need in   order to carry out their work effectively....
What are the consequences of increasing numbers of open-access journals, for
example for the operation of the Research   Assessment Exercise and other
selection processes? Should the Government support such a trend and, if so,
how?"***

There are today 24,000 research journals (across all disciplines and languages, worldwide) publishing about 2,500,000 articles per year. There are currently about 600* open-access journals
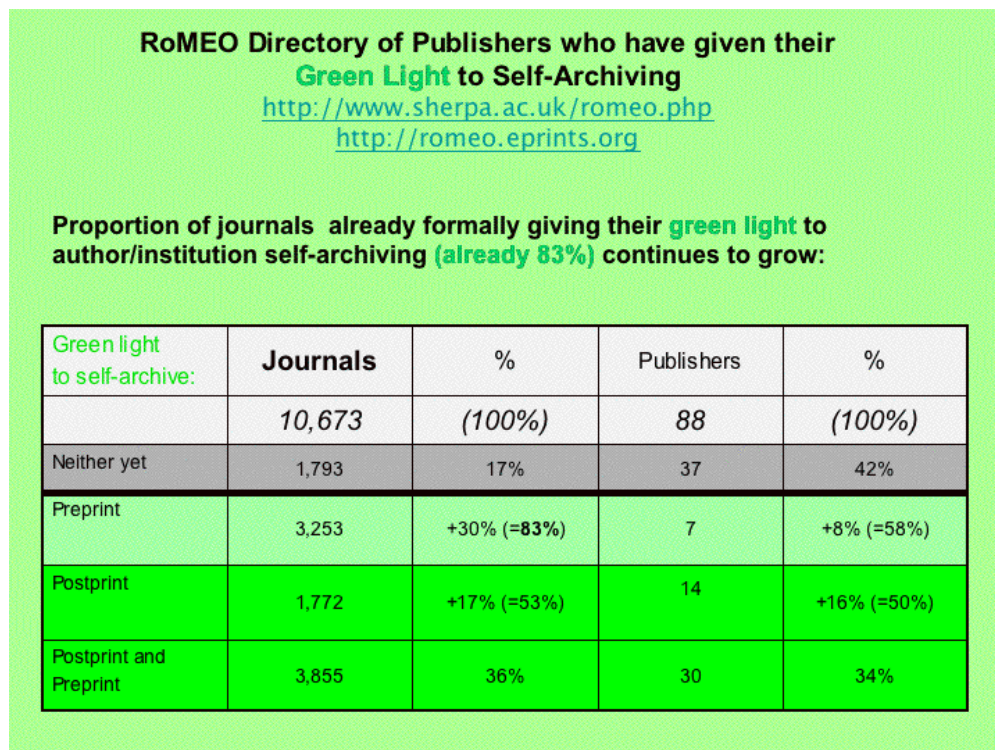
> *[*Update: since the time of writing of this document, the number of
> OA journals listed in DOAJ has doubled to about 1200, not because
> 600 new OA journals were founded in the meantime, but because at
> the time of writing the DOAJ was new and the number of existing OA
> journals was as yet under-reported. The 1200 is still within the 5%
> estimate made here. (It must also be noted that many of these OA
> Journals are not the core journals, but peripheral journals, and often
> non-English-language ones.)]*

http://www.doaj.org/ publishing about 75,000* [*200,000] articles per year.

What about access to the 2,425,000* [*2,300,000] articles for which there exists no suitable open-access journal today? Should researchers wait for 23,400* [*22,800] more open-access journals to be created one by one? It's likely to be a long, long wait!

Yet there is another way to provide open access, immediately, and that is for the authors of those 2,425,000* [*2,300,000] articles in those 23,400* [*22,800] journals to self-archive them on their own institution's website. That will make them all open-access overnight. There are already three times as many articles that are made open-access yearly through OAA self-archiving than through OAJ open-access publishing today. And over 80% percent of the 24,000 journals, though not yet ready to take the risk of becoming open-access journals, are ready to serve the interests of research and researchers by formally supporting self-archiving by their authors; many of the remaining 20% of journals will also agree if asked: http://romeo.eprints.org/publishers.html Publisher Policies.

**RoMEO Directory of Publishers who have given their
Green Light to Self-Archiving**
http://www.sherpa.ac.uk/romeo.php
http://romeo.eprints.org

Proportion of journals already formally giving their green light to
author/institution self-archiving (already 83%) continues to grow:

Green light to self-archive:	Journals	%	Publishers	%
	10,673	(100%)	88	(100%)
Neither yet	1,793	17%	37	42%
Preprint	3,253	+30% (=**83%**)	7	+8% (=58%)
Postprint	1,772	+17% (=53%)	14	+16% (=50%)
Postprint and Preprint	3,855	36%	30	34%

So why is the Science and Technology Committee inquiry into scientific publications considering only open access journals (OAJ), rather than also considering, at least as seriously, mandating university-based provision of open access to their own (peer-reviewed, published) research output (OAA)?

The (UK portion of) at least 1,250,000 articles could be made open-access overnight. The longer we wait, the longer and bigger will be our growing daily, weekly, monthly and yearly loss of research impact because of access-denial to would-be users worldwide. (336% impact loss, according to Lawrence in Nature 2001): This represents a needless cumulative loss of research progress and productivity for researchers, their institutions, their funders, and ultimately for the tax-payers who fund the funders.
http://www.ecs.soton.ac.uk/~harnad/Temp/openaccess.htm

> Harnad, S. (2003) Measuring and Maximising UK Research Impact. Times Higher Education Supplement. Friday, June 6 2003.
> http://www.ecs.soton.ac.uk/~harnad/Temp/thes.html

> Lawrence, S. (2001) Online or Invisible? Nature 411 (6837): 521.
> http://www.neci.nec.com/~lawrence/papers/online-nature01/

Detailed Comments and Recommendations

> "*The Committee will be looking at access to journals within the scientific community, with particular reference to price and availability.*"

A more targeted way to put this would be "*access to the articles published in peer-reviewed journals*". The articles (2,500,000 annually) are research output. Researchers publish them in peer-reviewed journals (24,000 in all, across all scientific and scholarly disciplines, worldwide) in order to make them accessible to all other researchers (worldwide) to be read, applied, used, built-upon, cited: This is called "research impact" and it is what is behind research productivity and progress (as well as the career advancement and future research funding of the researcher, the prestige and research funding of the researcher's institution, and the benefits to the UK tax-payer for the money spent funding the research).

> "***It will be asking what measures are being taken in government, the publishing industry and academic institutions***"

It is extremely important to separate the sectors over which the UK government has some direct control -- government itself, and academic institutions -- from the ones over which it can only have some indirect influence: the publishing industry.

The UK government can do a great deal to maximise the access to and the impact of UK research output through government research funding policies and through HEFCE influence over academic institutional policy through research assessment and funding, in particular, by extending existing publish-or-perish policy to mandate open-access provision:

UNIFIED OPEN-ACCESS PROVISION POLICY:

   (OAJ) Researchers publish their research in an open-access journal if a suitable one exists, *otherwise*

   (OAA) they publish it in a suitable toll-access journal and also self-archive it in their own research institution's open-access research archive.

Harnad, S., Carr, L., Brody, T. & Oppenheim, C. (2003) Mandated online RAE CVs Linked to University Eprint Archives: Improving the UK Research Assessment Exercise whilst making it cheaper and easier. Ariadne 35. http://www.ariadne.ac.uk/issue35/harnad/

What is needed for open access now:

1. *Universities*: Adopt a university-wide policy of making all university research output open access (via either the gold or green strategy)

2. *Departments*: Create and fill departmental OAI-compliant open-access archives

3. *University Libraries*: Provide digital library support for research self-archiving and open-access archive-maintenance. Redirect 1/3 of any eventual toll-savings to cover open-access journal peer-review service charges

4. *Promotion Committees*: Require a standardized online CV from all candidates, with refereed publications all linked to their full-texts in the open-access journal archives and/or departmental open-access archives

5. *Research Funders*: *Mandate open access for all funded research* (via either the gold or green strategy). Fund (fixed, fair) open-access journal peer-review service charges. Assess research and researcher impact online (from the online CVs).

6. Publishers: Become either gold or green.

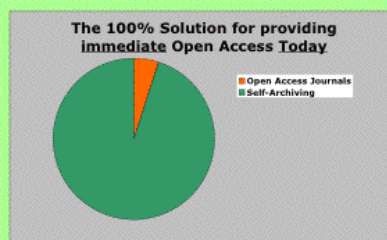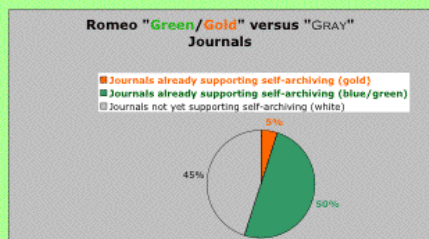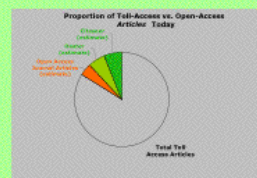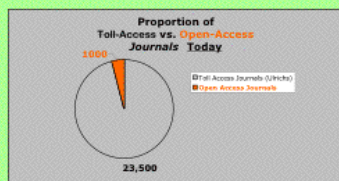http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0022.gif

The optimal open-access strategy today: open-access publishing (5%) http://www.doaj.org/ plus open-access self-archiving (95%):

Open access is possible today for 5% of articles by publishing them in open access journals, and for at least 83% (but probably closer to 95%) of the rest by self-archiving them.

The optimal dual strategy is hence to
(1) publish your article in an open-access journal if a suitable one exists and otherwise:
(2) publish your article in a toll-access journal and also self-archive it in your institutional open-access eprint archive.

Proportion of Toll-Access vs. Open-Access Journals Today
1000
☐ Toll Access Journals (Ulrichs)
☐ Open Access Journals
23,500

Proportion of Toll-Access vs. Open-Access Articles Today
Total Toll Access Articles

Romeo "Green/Gold" versus "GRAY" Journals
■ Journals already supporting self-archiving (gold)
■ Journals already supporting self-archiving (blue/green)
☐ Journals not yet supporting self-archiving (white)
5%
45%
50%

The 100% Solution for providing immediate Open Access Today
■ Open Access Journals
■ Self-Archiving

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0024.gif

But government can only influence publishers indirectly. The greatest indirect influence will be the effect of the above open-access provision policy itself, if it is mandated. This will encourage journals (first) to support author self-archiving

-- http://romeo.eprints.org/publishers.html"> Publisher Policies.htm --
and -- perhaps -- eventually also to become open-access publishers:

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0028.gif

Secondarily -- but note that the amount of open access to UK research this will help provide is far less than the amount that will be provided by the above open-access provision policy -- the government can also provide (as part of research support) some support for covering the costs of publishing in open access journals, to further encourage publishing in open access journals, to help sustain the small number of open access journals that exist today (600*, vs. 23,400 [*1200 vs 22,800] toll access journals), and to encourage the creation of new open access journals and the conversion of toll-access journals to open access.

But note that the greatest impetus to this (possible eventual) transition from toll-access publishing to open-access publishing will come from mandating open-access provision itself (by the joint OAJ/OAA route), for this will generate open access directly -- and perhaps eventually also the university journal subscription cancellations from which the annual university windfall savings will be the natural source out of which to pay the open-access journal publication (peer-review) costs for each university's own research output:
http://www.ecs.soton.ac.uk/~harnad/Tp/resolution.htm#4.2

> "*to ensure that researchers, teachers and students have access to the publications they need in order to carry out their work effectively.*"

The government can of course act for all of these good reasons. But remember that most of peer-reviewed journal research is written by researchers for researchers, to be used, applied and built upon in further research, to further research progress. Otherwise it is hardly read by anyone (including teachers and students).

So the government's open-access provision policy has to be very clear both on why open access to this special literature is so important and necessary (for the sake of research productivity and progress) and how it

can make this importance and necessity known to researchers, so that they will want to support the mandating of open-access provision: Researchers will support it for the sake of enhancing research impact. That they will understand and approve fully. But they will not be much persuaded (and perhaps even resistant) if they are told that open-access provision is mandated in order (1) to encourage publishers to convert from toll-access to open-access publishing, (2) to save money for libraries, (3) to provide access to research for teachers, students and the general public, or even (4) to provide access to research for the developing world.

(1) - (4) may all be valid reasons for the <u>government</u> to support open-access provision, but for the <u>researcher</u> the only persuasive reason is: to maximise the impact of his own peer-reviewed research output (thereby maximising its contribution and benefits to science and scholarship, as well as the resulting rewards to the researcher and his institution).

> "***The inquiry will also examine the impact that the current trend towards e-publishing may have on the integrity of journals and the scientific process.***"

There is no "*current trend toward e-publishing*"! Virtually all of the 24,000 peer-reviewed journals are already hybrid print/electronic: They publish both an on-paper and an online version, both still accessible only through institutional tolls. There are a few online-only journals, but these are not necessarily open-access journals (of which there are about 600* [*1200]). So do not confuse hybrid-online or online-only journals with open-access journals.

All journals have benefited from the new economies and efficiencies of the online medium for processing submissions, implementing peer review, and producing and distributing both the paper and online edition. But those economies and efficiencies themselves have not inclined most journals to convert to open access. (Only 600* [*1200] out of 24,000 have done so to date.)

So the electronic medium itself has increased access for those institutions that could afford the tolls, because licensed online institutional toll-access provides more and better access than paper subscriptions do. But migrating journal contents to the electronic medium certainly has not generated open access -- far from it. It is still a fact for <u>every one</u> of the 2,500,000 peer-reviewed journal articles published annually that <u>most</u> of its would-be users cannot access it, because their institutions cannot afford the access-tolls. This means that an estimated 336% of potential research impact is being lost, and continues to be lost daily:

"*Online or Invisible*?" (Lawrence 2001)
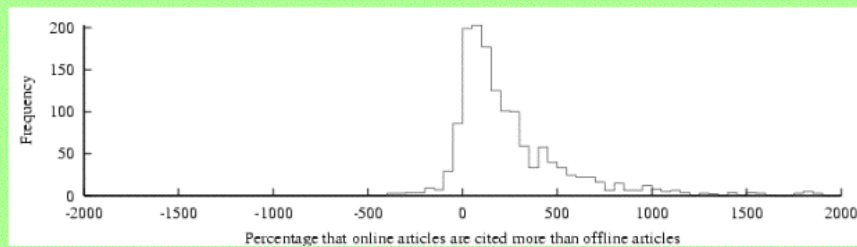
"average of 336% more citations to online articles compared to offline articles published in the same venue"

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/

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0006.gif

Research Assessment, Research Funding, and Citation Impact
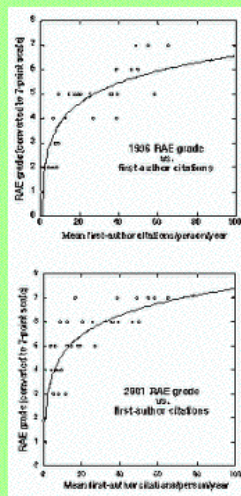
"Correlation between RAE ratings and mean departmental citations +0.91 (1996) +0.86 (2001) (Psychology)"

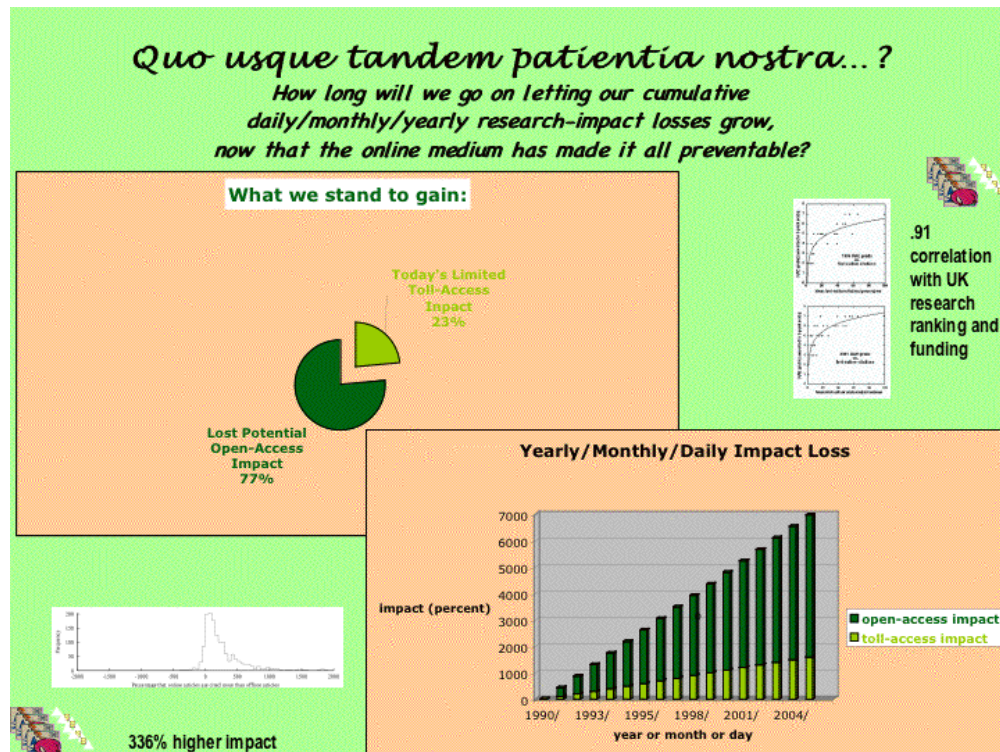"RAE and citation counting measure broadly the same thing"

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

(Eysenck & Smith 2002)

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

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0007.gif

http://www.ecs.soton.ac.uk/~harnad/Temp/self-archiving_files/Slide0025.gif

Lawrence, S. (2001a) Online or Invisible? Nature 411 (6837): 521. http://www.neci.nec.com/~lawrence/papers/online-nature01/

Lawrence, S. (2001b) Free online availability substantially increases a paper's impact. Nature Web Debates. http://www.nature.com/nature/debates/e-access/Articles/lawrence.html

Kurtz, M.J. et al. (2003) The NASA Astrophysics Data System: Sociology, Bibliometrics, and Impact. Journal of the American Society for Information Science and Technology http://cfa-www.harvard.edu/~kurtz/jasis-abstract.html

This has nothing to do with the "*integrity of journals and the scientific process*." Research journals are journals, whether paper or online, whether toll-access or open-access. And the journal's contribution to the scientific process -- the administration of peer-review (the peers review for free) -- is unchanged, whether peer review is administered on paper or online, and whether its administration costs are recovered on a toll-access publishing-cost-recovery model or an open-access publishing-cost-recovery model. The only thing that has been changed (and changed radically) by the advent of the online medium is the possibility, at last, of providing open access to this special literature that its authors have always given away for free (even to the point of making and mailing hard-copy "reprints" at their own expense for any would-be users who asked for them) in order to maximise their research impact.

Harnad, S. (1998/2000) The invisible hand of peer review. Nature [online] (5 Nov. 1998) and Exploit Interactive 5 (2000): http://helix.nature.com/webmatters/invisible/invisible.html http://www.exploit-lib.org/issue5/peer-review/

"*What impact do publishers current policies on pricing and provision of scientific journals, particularly big deal schemes, have on libraries and the teaching and research communities they serve?*"

Separate the <u>serials budget problem</u> of university libraries from the <u>research impact problem</u> of university researchers. They are related and connected, but not in an obvious way, and they are certainly not the same problem.

Libraries must make do -- and provide access for their researchers to whatever they can afford -- from year to year. For them, online licensing has been a boon: it has meant more journal titles and articles accessible to more of their institutional researchers per pound or dollar paid in access-tolls.

But prices keep going up too. So there is also a shrinkage in the number of journals that libraries can afford. The "big package deals" offer libraries the bonus of getting both the paper and the online version of all journals (from the same publisher) that they have subscribed to previously, plus all journals (by the same publisher) to which they did not subscribe previously -- for the price of only the journals they subscribed to previously.

This "big deal" too provides some increased access, but the prices still keep going up. So the net outcome is the same: An overextended journals acquisition budget (at the cost of an underfunded book acquisitions budget) and affordable access to only a tiny fraction of the annual 2,500,000 articles in the 24,000 journals.

This means university libraries remain cash-strapped, and their users remain access-deprived (not relative to what they used to have, in paper days, but relative to all there is: the 2,500,000 annual articles in the 24,000 peer-reviewed research journals). This is the <u>serials budget problem</u>, and it is purely on the input/buy-in side.

But there is also the <u>research impact problem</u>, which is on the output side: University researchers are impact-deprived -- because of the access problems of <u>other</u> universities: <u>those</u> universities cannot afford access to <u>my</u> university's research output, so <u>I</u> lose research impact.

The two problems are connected, but in a subtle way. The key to understanding the two problems is to understand the reciprocity involved. Libraries tend to misunderstand and mis-state this as: "Our university does the research, gives it away to publishers for free, and then has to buy it back!"

This is completely incorrect. What the university is buying <u>in</u> (not back) is the research output of <u>other</u> universities, not their <u>own</u> research output. (They already <u>have</u> their own research output!) And what is being lost is research impact: the consequences of access-denial to <u>my</u> give-away research because <u>other</u> universities cannot afford the tolls to access the journal in which it appeared (hence cannot read/use/cite it).

The picture seems complicated, but the solution -- in the first instance, to the lost research-impact problem, but eventually perhaps also to the serials budget problem -- is to capitalise on the new online medium as well as the peculiar reciprocity-relation that exists among the respective author give-aways, by mandating that universities extend their existing publish-or-perish policies to include open-access provision for those publications: It is not enough to publish, and hence let the affordability of access-tolls determine who can and cannot use your research output. Publication must be supplemented with open-access provision (by implementing the Unified Open Access Provision Policy).

The result, in the short run, will be open access to all UK research output worldwide, thereby maximising its research impact. http://www.ecs.soton.ac.uk/~harnad/Tp/resolution.htm#4.1
In the longer run this <u>might</u> also lead to a transition from toll-access to open-access journal publishing,

thereby solving the libraries' serials budget problem. http://www.ecs.soton.ac.uk/~harnad/Tp/resolution.htm#4.2

> "*What action should Government, academic institutions and publishers be taking to promote a competitive market in scientific publications?*"

Trying to increase between-journal competition in order to lower prices is only a library serials-budget strategy. This has been going on for years now (led by SPARC http://www.arl.org/sparc/ and SPARC-Europe http://www.sparceurope.org/, a consortium of university libraries trying to use their collective power to drive down journal prices). Its success has so far been minimal, and its effect on researchers' access and impact has been negligible.
http://www.sparceurope.org/

The reason this strategy does not work is because of inelastic demand for peer-reviewed research. The 24,000 journals have a priority hierarchy in this inelastic demand: All researchers need access to it all, but no university can afford access to more than a fraction. So it is just a matter of trying to buy in as much as each can, top-down.

The journals know (and feel, from the market's responses to price increases) that the demand is inelastic: that the university libraries have no choice. Moreover, because of the peculiar reward-structure of this anomalous form of publishing ï¿½ in which, unlike book authors, peer-reviewed journal article authors give away their articles, seeking no royalties or payment, but only research impact -- the only relevant competition among journals is for articles (i.e., to get the best articles); there is little competition between journals for subscriptions.

And competing for the highest-quality authors and articles depends, paradoxically, on rejecting articles, in order to maintain the highest standards of peer review. For it is the highest-quality articles that generate the highest research impact (usage, citation).

So the top-down variable in the journal hierarchy is quality and impact. This, not price, is the main determinant of which journals will and will not be subscribed to by the libraries. It is for impact that journals compete. But peer-review quality standards and rejection rates have absolutely no connection with any competitivity one might generate between journal subscription prices!

So the path of trying to spark competition between journals in order to lower access tolls is one that has afforded and promises limited success. SPARC has subsidized and offered consortial subscription support to lower-priced journals. It is now doing the same for open-access journals. But the scope for any substantial change here is very limited, and it concerns mainly the libraries' year-to-year serials budget problems; it has little impact on the access problem, hence the research impact problem. (600* [*1200] open access journals out of 24,000 journals represents a very small portion of actual and potential impact space).

The way to solve the research impact problem is to implement the the Unified Open Access Provision Policy.

> "*What are the consequences of increasing numbers of open-access journals, for example for the operation of the Research Assessment Exercise and other selection processes? Should the Government support such a trend and, if so, how?*"

It is not the (very slowly) increasing number of open-access journals (OAJ) that is relevant to the Research

Assessment Exercise (RAE), nor even the (almost as slowly) increasing number of articles made open-access by self-archiving (OAA). What is relevant to the RAE, and what the Government should support, is increasing the amount of open-access provision -- via both OAJ and OAA -- by mandating it.

"How effectively are the Legal Deposit Libraries making available non-print scientific publications to the research community, and what steps should they be taking in this respect?"

This is irrelevant. Legal Deposit Libraries store copies of record, for archival and preservation purposes. They are not open-access providers. What should be mandated is that all universities make their own published research articles openly accessible by publishing them in an open-access journal -- or in a toll-access journal and depositing them in their own university open-access archives:
http://www.ecs.soton.ac.uk/~harnad/Temp/archpolnew.html

"What impact will trends in academic journal publishing have on the risks of scientific fraud and malpractice?"

It is not clear why research access and impact problems are being considered in the same breath with problems of fraud and malpractice. There was some fraud and malpractice in paper journals. There is some fraud and malpractice in online journals. The cost-recovery model (whether toll-access or open-access) is also irrelevant. It is true that it is easier to plagiarize or to otherwise misuse an online text than a paper one, but it is also true that plagiarism and misuse are more easily detectable online. So these balance out.

Apart from that, questions about scientific fraud and malpractice (and questions about modifying the peer review system in any way) have nothing to do with the question of open online access.

"In announcing the inquiry, the Chairman of the Committee, Ian Gibson MP, said Journals are at the heart of the scientific process. Researchers, teachers and students must have easy access to scientific publications at a fair price."

As noted, the access problem for this specialised literature is not primarily a problem of teachers and students, but of researchers, for the sake of research productivity, progress and impact. Nor is it about ease of access: It is about having access at all (as opposed to access-denial). Nor is it merely or even primarily about having access at "a fair price." This is an author give-away literature, written purely for the sake of research impact. Access-denial at any price is already needless impact-denial. Even if all 24,000 peer-reviewed journals were sold at cost (and cost was minimised using all the economies and efficiencies of the new electronic medium) it would still be true of all 2,500,000 annual articles that they are inaccessible to most of their would-be users, because their institutions still cannot afford access to them all, and hence that all that potential research impact is still being needlessly lost.

The only remedy is to supplement toll-access (whatever its going price) with open-access provision by the authors, institutions and funders that provide this give-away research in the first place:

UNIFIED OPEN-ACCESS PROVISION POLICY:

(OAJ) Researchers publish their research in an open-access journal if a suitable one exists, _otherwise_

(OAA) they publish it in a suitable toll-access journal and also self-archive it in their own research institution's open-access research archive.

"Scientific journals need to maintain their credibility and integrity as they move into the age of e-publication. The Committee will have some very tough questions for publishers, libraries and government on these issues."

There is no new credibility/integrity problem for the 2,500,000 articles appearing annually in the world's 24,000 peer-reviewed journals. There is an <u>access</u> problem for their would-be users -- those whose institutions cannot afford the access-tolls -- and an <u>impac</u>t problem for (all) of their authors.

The tough questions should not be directed primarily at publishers and libraries but at the research community itself: researchers, their institutions, and their governmental research funders. And the question is: Why are the potential benefits of this research not being maximised by maximising the access to it (through open-access provision)? It is the research community that it is in the position to solve this problem -- especially if government mandates it.

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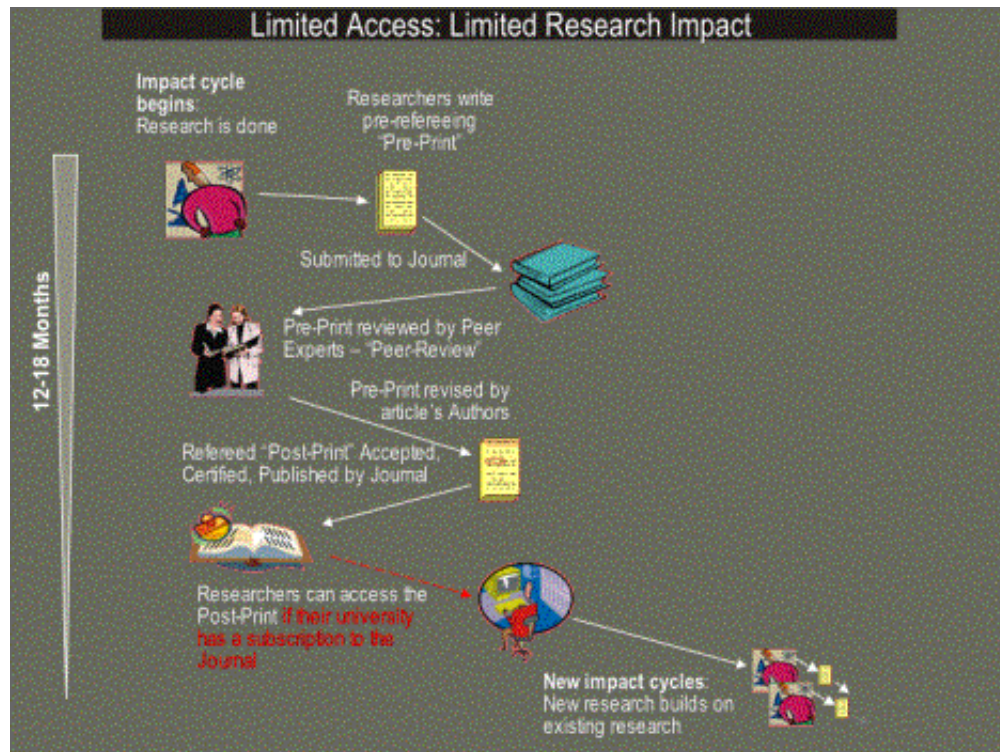
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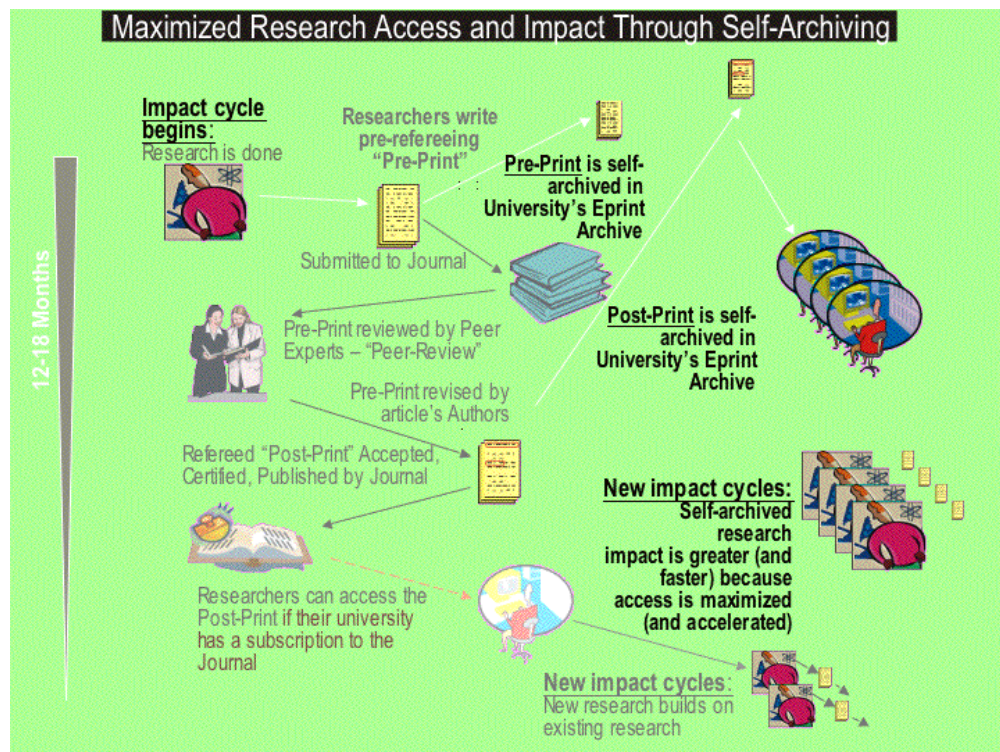
http://www.ecs.soton.ac.uk/~harnad/Temp/self–archiving_files/Slide0004.gif

APPENDIX

From: Harnad, S. (2001) For Whom the Gate Tolls? How and Why to Free the Refereed Research Literature Online

Through Author/Institution Self-Archiving, Now.
http://cogprints.soton.ac.uk/documents/disk0/00/00/16/39/index.html
Ciï¿½lographie et ciï¿½lolexie: Anomalie post-gutenbergienne et comment la rï¿½soudre
http://www.text-e.org/conf/index.cfm?ConfText_ID=7
http://www.ecs.soton.ac.uk/~harnad/Temp/texte2.pdf

4.1 Enough to free entire refereed corpus, forever, immediately:

Eight steps will be described here. The first four are not hypothetical in any way; they are guaranteed to free the entire refereed research literature (~24K journals annually) from its access/impact toll-barriers right away. The only thing that researchers and their institutions need to do is to take these first four steps. The second four steps are hypothetical predictions, but nothing hinges on them: The refereed literature will already be free for everyone as a result of steps i-iv, irrespective of the outcome of predictions v-viii.

i. Universities install and register OAI-compliant Eprint Archives (e.g. http://www.eprints.org/)

The Eprints software is free and open-source. It in turn uses only free software; it is quick and easy to install and maintain; it is OAI-compliant and will be kept compliant with every OAI upgrade: http://www.openarchives.org/. Eprints Archives are all interoperable with one another and can hence be harvested and searched (e.g., http://oaister.umdl.umich.edu/o/oaister/) as if they were all in one global "virtual" archive of the entire research literature, both pre- and post-refereeing.

ii. Authors self-archive their pre-refereeing preprints and post-refereeing postprints in their own university's Eprint Archives.

This is the most important step; it is insufficient to create the Eprint Archives. All researchers must self-archive their papers therein if the literature is to be freed of its access- and impact-barriers. Self-archiving is quick and easy; it need only be done once per paper, and the result is permanent, and permanently and automatically uploadable to upgrades of the Eprint Archives and the OAI-protocol.

iii. Universities subsidize a first start-up wave of self-archiving by proxy where needed.

Self-archiving is quick and easy, but there is no need for it to be held back if any researcher feels too busy, tired, old or otherwise unable to do it for himself: Library staff or students can be paid to "self-archive" the first wave of papers by proxy on their behalf. The cost will be negligibly low per paper, and the benefits will be huge; moreover, there will be no need for a second wave of help once the palpable benefits (access and impact) of freeing the literature begin to be felt by the research community. Self-archiving will become second-nature to all researchers as the objective digitometric indicators of its effects on citations and useage become available online (Harnad 2001; Lawrence 2001a, 2001b) (e.g., cite-base http://citebase.eprints.org/cgi-bin/search or ResearchIndex http://citeseer.nj.nec.com/cs).

iv. The Give-Away corpus is freed from all access/impact barriers on-line.

Once a critical mass of researchers has self-archived, the refereed research literature is at last free of all access- and impact-barriers, as it was always destined to be.

4.2 Hypothetical Sequel:

Steps i-iv are sufficient to free the refereed research literature. We can also guess at what may happen after that, but these are really just guesses. Nor does anything depend on their being correct. For even if there is no change whatsoever -- even if Universities continue to spend exactly the same amounts on their access-toll budgets as they do now -- the refereed literature will have been freed of all access/impact barriers forever.

However, it is likely that there will be some changes as a consequence of the freeing of the literature by author/institution self-archiving. This is what those changes might be:

v. Users will prefer the free version?

It is likely that once a free, online version of the refereed research literature is available, not only those researchers who could not access it at all before, because of toll-barriers at their institution, but virtually all researchers will prefer to use the free online versions.

Note that it is quite possible that there will always continue to be a market for the toll-based options (on-paper version, publisher's on-line PDF, deluxe enhancements) even though most users use the free versions. Nothing hangs on this.

vi. Publisher toll revenues shrink, Library toll savings grow?

But if researchers do prefer to use the free online literature, it is possible that libraries may begin to cancel journals, and as their windfall toll savings grow, journal publisher tollrevenues will shrink. The extent of the cancellation will depend on the extent to which there remains a market for the toll-based add-ons, and for how long.

If the toll-access market stays large enough, nothing else need change.

vii. Publishers downsize to providers of peer-review service + optional add-ons products?

It will depend entirely on the size of the remaining market for the toll-based options whether and to what extent journal publishers will have to down-size to providing only the essentials: The only essential, indispensable service is peer review.

viii. peer-review service costs funded by author-institution out of reader-institution toll savings?

If publishers can continue to cover costs and make a decent profit from the toll-based optional add-ons market, without needing to down-size to peer-review provision alone, nothing much changes.

But if publishers do need to abandon providing the toll-based products and to scale down instead to providing only the peer-review service, then universities, having saved 100% of their annual access-toll budgets, will have plenty of annual windfall savings from which to pay for their own researchers' continuing (and essential) annual journal-submission peer-review costs (10-30%); the rest of their savings (70-90%) they can spend as they like (e.g., on books -- plus a bit for Eprint Archive maintenance).