Applying Optimality Findings:
A Critique of Graham Taylor's Critique of RCUK Policy Proposal

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SUMMARY: Graham Taylor, director of educational, academic and professional publishing at the Publishers Association, criticises the Research Councils UK (RCUK) proposal to require that the author of every published article based on RCUK-funded research must "self-archive" an "open access" version on the web so it can be freely read and used by any researcher worldwide whose institution cannot afford the journal in which it was published. The purpose of the RCUK policy is to maximise the usage and impact of research. Taylor argues that it may have an adverse affect on some journals. This critique points out that there is no evidence from 15 years of open-access self-archiving that it has had any adverse affect on journals and a great deal of evidence that it enhances research impact.

[All quotes are from Graham Taylor, "Don't tell us where to publish" *Guardian: Research News*, Friday July 1, 2005 http://education.guardian.co.uk/elearning/story/0,10577,1519270,00.html]

"*Repositories are probably a good idea... But should they be used as a means for "publication"? And what is "publication" exactly?*"

No one is proposing that institutional open-access (OA) repositories or archives should be used as a means of publication. They are a means of providing supplementary <u>access</u> to the (final drafts) of published research articles for those would-be users whose institutions cannot afford the paid access to the official published versions.

<u>RCUK</u> is not telling its fundees "<u>where</u> to publish," but what <u>else</u> they must do with their published (and funded) research, in order to maximize its usage and impact, over and above publishing it in the best possible peer-reviewed journal ("publish or perish").

"*UK Research Councils (RCUK) [have proposed a] policy [that] requires that funded researchers must deposit in an appropriate e-print repository any resultant published journal articles*"

Correct. Notice that it says to "deposit" published journal articles, not to "publish" them. (To publish a published article would be <u>redundant,</u> whereas to provide a free-

access version for those who cannot pay would merely ensure that the article's impact was more abundant.)

> *"Publication involves a great deal more than mere*
> *dissemination. After the peer review, the editorial added-value,*
> *the production standards, the marketing, the customer service... the*
> *certification process process is an essential endpoint for any*
> *research activity. How does the RCUK policy relate to this?"*

It relates in no way at all. The value can continue being added, and the resulting product can continue being sold (both on-paper and online) to all those who can afford to buy it, exactly as before. The author's self-archived supplement is for those who cannot afford to buy the official published version.

(Does Graham Taylor recommend instead that research and researchers should continue to renounce their work's potential impact from all those potential users who cannot afford access today, and instead carry on exactly as in the pre-Web era when they had no further option for maximizing the usage and impact of their findings? Why?)

> *"Mandating deposit as close to publication as possible will inevitably*
> *mean that some peer-reviewed journals will have to close down. "*

This is a rather strong statement of a hypothesis for which there exists no supporting evidence after 15 years of self-archiving even in those fields where self-archiving reached 100% some time ago; in fact, all existing evidence is contrary to this hypothesis. So on what basis is Graham Taylor depicting this doomsday scenario as if it were a factual statement, rather than the counterfactual conjecture that it actually is?

A recent JISC study conducted by Swan & Brown reported: "[W]e asked the American Physical Society (APS) and the Institute of Physics Publishing Ltd (IOPP) what their experiences have been over the 14 years that arXiv [e-print repository] has been in existence. How many subscriptions have been lost as a result of arXiv? Both societies said they could not identify any losses of subscriptions for this reason and that they do not view arXiv as a threat to their business (rather the opposite -- in fact the APS helped establish an arXiv mirror site at the Brookhaven National Laboratory)."

"Why should inadequate and overstretched library budgets pay for stuff
*   that is available for free?"*

(1) In order to have the print edition

(2) In order to have the publisher's official online (value-added) version of record

> *"Library acquisition budgets represent less than 1% of expenditure*
> *in higher education... for more than a decade, despite double*
> *digit growth in research funding. Publication and output management*
> *costs represent around 2% of the cost of research to our economy,*

> *yet RCUK appears to want to bring new costs into the system.*"

Interesting data, but what on earth do they have to do with what we are talking about here? We are talking about researchers increasing the impact <u>of</u> their own research by increasing the access <u>to</u> their own research -- in the online age, which is what has at last made this maximised access/impact possible (and optimal for researchers, their institutions, their funders, and for research progress itself).

We have already established that self-archiving the author's final draft of a published article is not publishing, that it is done for the sake of those potential users who cannot afford the published version, and that those who want and can afford the published version can and do continue to buy it. So why are we here rehearsing the old and irrelevant [publishers' plaint](#) about the underfunding of library serials budgets? No one has mentioned the librarians' counter-plaint about publishers' over-pricing of journals. So why not let sleeping dogs lie? They are in any case irrelevant to the substantive <u>research</u> issue at hand, which is: maximising research impact, by and for researchers.

> "*We need a sustainable, scaleable system for publication, which means making a "surplus" in the process to invest for the future, to fund the activities of the learned societies, to fund the cost of capital... But deposit on publication can only cannibalise the very system that makes mandating deposit viable in the first place.*"

How did we get onto the subject of publishers' profit margins and investments, when the problem was needlessly lost research impact? Is needlessly lost research impact supposed to be subsidising publishers' venture capital schemes?

> "*And then there are the costs. Is the current system failing? If access is a problem, where is the evidence?*"

The problem is needlessly loss of research impact, because not all of the potential users of a research finding are necessarily at an institution that can afford to subscribe to the journal in which it was published. The evidence that the paid-access version alone is not reaching all or even most of its potential users is the finding -- replicated in field after field -- that the citation impact of self-archived articles is 50%-300+% higher than that of non-self-archived articles (in the same journal and issue) -- in all fields analysed so far:

> http://citebase.eprints.org/isi_study/
> http://www.crsc.uqam.ca/lab/chawki/ch.htm
> http://opcit.eprints.org/oacitation-biblio.html

Lost impact is the evidence that lack of access is a problem. The [web era](#) has made it possible to put an end to this [needlessly lost impact](#).

The system is not "failing" -- it is merely extremely sub-optimal in its access provision in the online age. In fact, the system is <u>somewhat</u> better today than it had been in the paper age, but far from the <u>substantially</u> better that it could and should be (and already is -- for the 15% of articles that already <u>hav</u>e a self-archived supplement

of the kind the RCUK now proposes to require for 100% of UK research article output).

[Food for thought: This needlessly lost research access and impact would still be a problem if journals were zero-profit and sold at-cost! There would still not be enough money in the world so that all research institutions could afford to purchase access to all the journals their researchers could conceivably need to use. A self-archived supplement would still be needed then, as it is no, to maximise impact by maximising access.]

> "*Is funding repositories the right way to spend scarce funds? Maybe,*
> *for reasons other than publication, but isn't this a high risk*
> *strategy? So where is the impact assessment and the rigorous cost*
> *appraisal in the RCUK policy?*"

(RCUK is not yet proposing to <u>fund</u> repositories; it is only proposing to require fundees to <u>fill</u> them – although helping to fund institutional repositories' minimal repository costs would not be a bad idea!)

It is not altogether clear to me, however, why the Graham Taylor or the publishing community should be asking about how the research community spends its research funds! But as it's a fair question all the same, here's a reply: <u>However</u> research money is spent, the greater the usage and impact of the research funded, the <u>better</u> that money has been spent. And self-archiving enhances research impact by 50%-300+%. (There's your "impact assessment"!):

The output of one research-active university might range from 1000 to 10,000 or more articles per year depending on size and productivity. Researchers are employed, promoted and salaried – and their research projects are funded -- to a large extent on the basis of the usefulness and impact of their research. Research that is used more tends to be cited more. So citations are counted as measures of usage and impact.

The dollar value (in salary and grant income) of one citation varies from field to field, depending on the average number of authors, papers and citations in the field; the marginal value of one citation also varies with the citation range (0 to 1 being a bigger increment than 30 to 31, since 60% of articles are not cited at all, 90% have 0-5 citations, and very few have more than 30 citations:

A still much-cited 1986 study estimated the "worth" of one citation (depending on field and range) at $50-$1300. (This dollar value has of course risen in the ensuing 20 years.)

The UK Research Assessment Exercise (RAE) ranks UK Universities according to their research productivity and provides a substantial amount of top-sliced research funding proportional to each university's RAE ranking. It turns out that this ranking, hence each university's amount of funding, is largely determined by the university's total citation count.

So there's the "impact assessment and the rigorous cost appraisal in the RCUK policy."

*"Worldwide, 2,000 journal publishers are publishing 1.8 million
articles per year (and rising) in 20,000 journals. Remember
the UKeU - £50m to attract 900 students? The House of Commons
education select Committee concluded that supply-side thinking
was to blame. Is the RCUK policy really based on demand and need,
or is supply-side thinking creeping in again?"*

What on earth is all of this about? RCUK is talking about maximizing the impact of
UK research output by supplementing paid journal access with free author-provided
access – access provided by and for researchers, for their own research output -- and
we are being regaled by irrelevant figures about numbers of articles published per
year, the UKeU distance learning schemes that flopped, and "supply-side" thinking!
What is Graham Taylor thinking?

*"The RCUK policy is based on four principles that we... support...
Our problem is that we harbour deep concerns that the proposals
founded on those principles will bring unforeseen - and potentially
irreversible - consequences that we will all live to regret."*

In other words, the principles seem unexceptionable, but Graham Taylor has a
doomsday scenario in mind to which he would like us to attach equal (indeed greater)
weight, despite the absence of any supporting evidence and despite the presence of a
good deal of contrary evidence (see the [Swan &Brown JISC report](#) cited above).

*"Instead, we offer some principles of our own: sustain the capacity
to manage and fund peer review; don't undermine the authority of
peer reviewed journals; match fund access to funding for research;
invest in a sustainable organic system based on surplus not grants."*

Translation: [Pour more money into paying for journals](#) rather than requiring fundees
and their institutions to supplement the impact of their own funded research by
making it accessible for free to potential users worldwide who cannot afford to pay
for access.

(But there is not remotely enough available money in the world to ensure that all
would-be users have paid access to all the research they could use – even if publishers
were to renounce all profits and sold their journals at-cost. That is why the web is
such a godsend for research.)

*"Publishers will support their authors in making their material
available through repositories, provided they are not set up to
undermine peer-reviewed journals. We say to RCUK, by all means
encourage experiments, but don't mandate. Don't force transition
to an unproven solution."*

You would not call a solution that has proven across 15 years to enhance impact by
50%-300+% and that has not generated any discernible journal cancellations -- even
in fields where self-archiving reached 100% years ago -- a proven solution? And you

would like RCUK to refrain from mandating it on the strength of your doomsday scenario, which has no supporting evidence at all, and only contrary evidence?

> "*Whatever you do, make the true costs transparent. The paper backing up the policy makes little or no acknowledgement of what the learned societies and publishers have achieved over the last 10 years.*"

The proposal is to <u>supplement</u> the current system, not to <u>replace</u> it. The value of the system is inherently acknowledged in the fact that it is the content of peer-reviewed journal articles to which RCUK proposes maximising access -- not something else in their stead.

> "*This is not to say that the current system is perfect... but it's getting better fast... [R]ather than standing on principle... we should allow time for the evidence to make the case. [That is] the very basis... of research.*"

It is now over 25 years since the advent of the Net and the possibility of 100% <u>self-archiving in FTP sites</u>, 15 years since the <u>advent of the Web</u> and the possibility of 100% self-archiving on personal websites, and 6 years since the advent of the <u>OAI protocol</u> and the possibility of 100% self-archiving in distributed <u>interoperable institutional repositories</u>.

So far, only about 15% of articles are being self-archived, but in two international author surveys commissioned by the UK JISC, researchers have indicated exactly what needs to be done to get them to self-archive: <u>Over 80%</u> replied that they will not self-archive until and unless their employers or funders <u>require</u> them to do so; but if/when they do require it, they will then self-archive, and self-archive <u>willingly</u>.

Graham Taylor seems to be suggesting instead:

> "No, don't act upon the existing evidence. Keep losing impact. Don't mandate self-archiving. Wait."

Wait for what? <u>How much longer?</u> And <u>Why</u>?

REFERENCES

Harnad, S. (1991) Post-Gutenberg Galaxy: The Fourth Revolution in the Means of Production of Knowledge. Public-Access Computer Systems Review 2(1):39 - 53. http://eprints.ecs.soton.ac.uk/3376/

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 (April 2003). http://www.ariadne.ac.uk/issue35/harnad/

Okerson, A. & O'Donnell. J (1995) (Eds.) Scholarly Journals at the Crossroads; A Subversive Proposal for Electronic Publishing. Washington, DC., Association of Research Libraries, June 1995.
http://www.arl.org/scomm/subversive/toc.html

Swan, A. and Brown, S. (2005) Open access self-archiving: An author study. *JISC Technical Report* http://eprints.ecs.soton.ac.uk/11006/

Taylor, G. (2005) "Don't tell us where to publish" *Guardian: Research News*, Friday July 1, 2005
http://education.guardian.co.uk/elearning/story/0,10577,1519270,00.html