



PEER usage study findings

PEER End of Project Results Conference, Brussels, 29 May 2012

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Aim of this presentation

What is the impact, if any, of PEER on use of the equivalent articles on the publisher's platforms? If there is an impact, what is the relative effect of

- mandatory self-archiving (PEER 'publisher deposit' model)
- voluntary self-archiving (PEER 'author deposit' model)

What are the effects of embargo periods, if any?

What are the key drivers of repository usage?

Two studies reported today

Descriptive statistics

Randomised controlled trial

The findings in this presentation reflect the position at a relatively early stage in PEER's development, and they will be reported in detail in the next few weeks. PEER is fully operational but it has yet to settle into a natural rhythm of ingest so is probably atypical of many longer established green repositories.

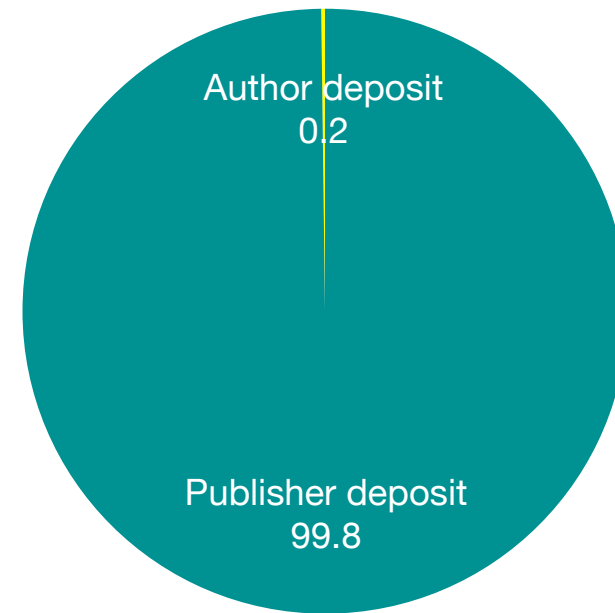


PEER usage study findings I

Descriptive statistics

Key finding: Voluntary and mandatory self-archiving

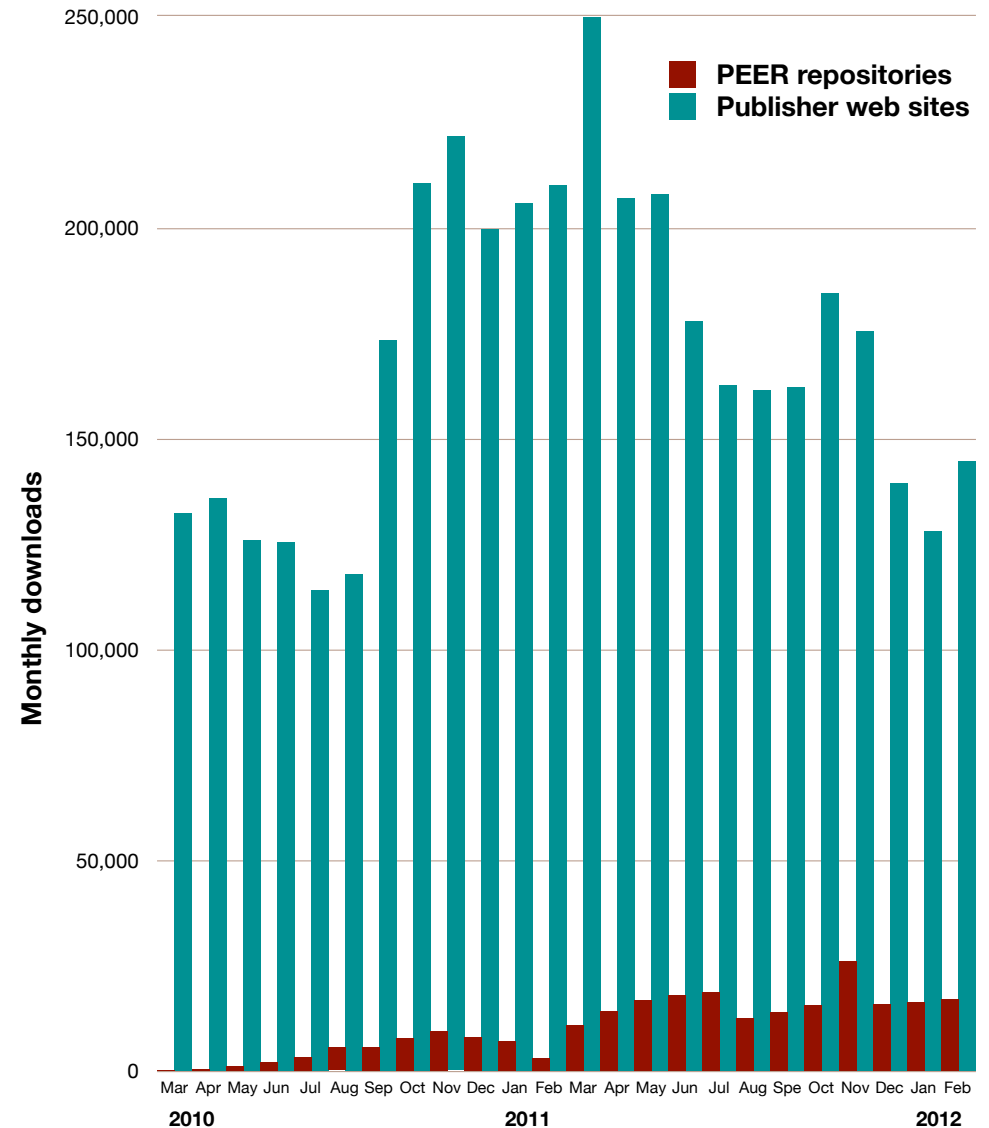
- Only a tiny minority (<1%) of authors self-archived, so the experiment is unable to shed any light on the first model: PEER under a voluntary self-archiving scenario. It simply didn't happen.
- So this presentation models the second scenario, what might happen under a comprehensive European Green OA mandate that makes available AFPRM (author's final peer-reviewed manuscript) by deposit.



PEER deposits (%)

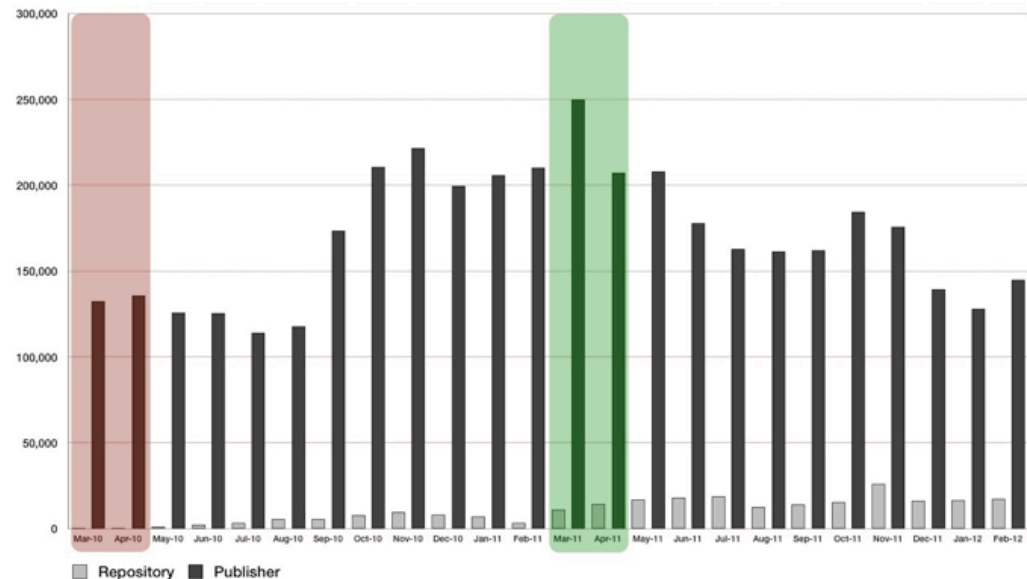
Key finding: Monthly downloads

- This chart shows monthly full text downloads in all subjects for equivalent items (preprints on PEER, versions of record on the publishers' web sites)
- Towards the end of the period, PEER seems to be hovering around 7.8% as a ratio of publisher use (with considerable variation between publishers in the range 4.3% to 11.5%)
- Note similar seasonal variation in both cases



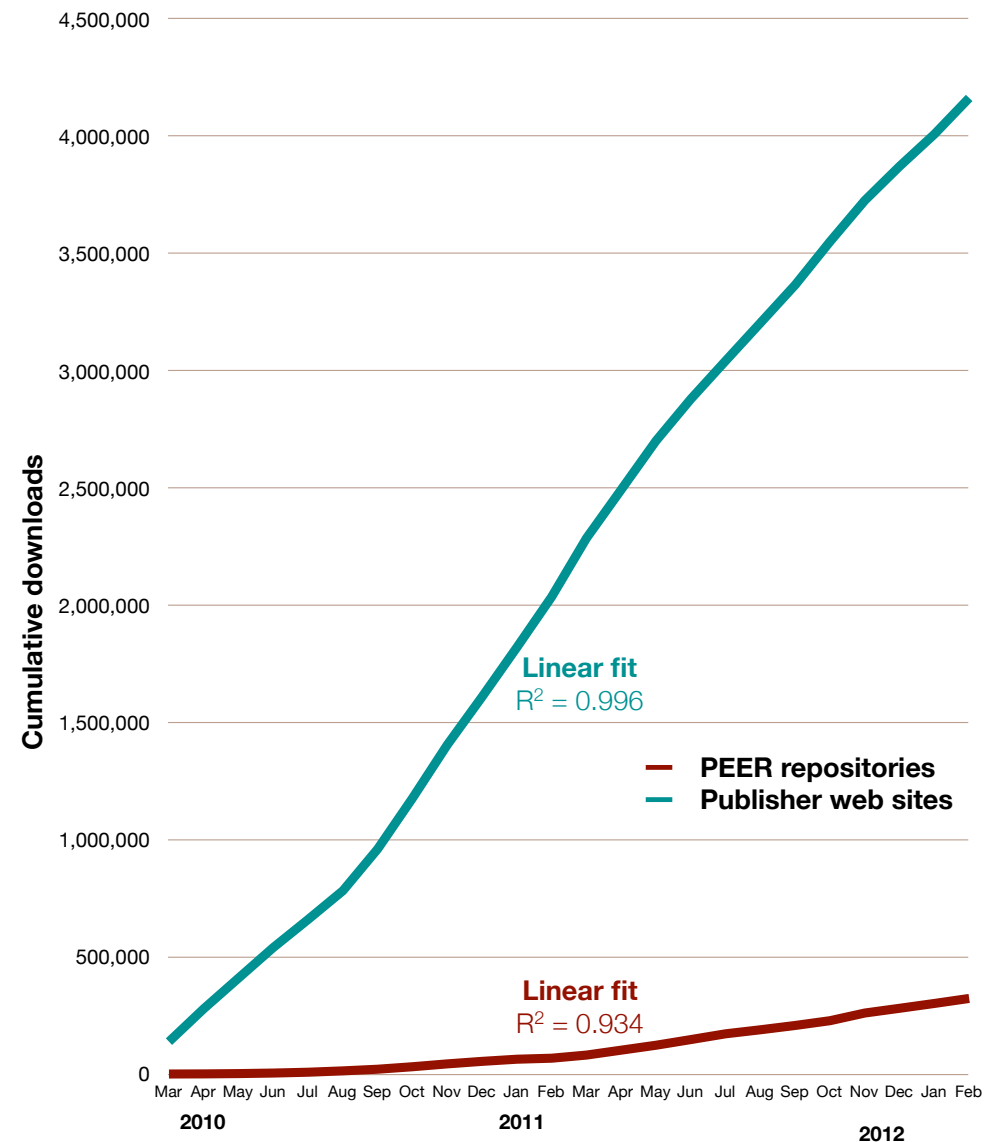
Key finding: Before and after PEER

- In this chart we compare publisher use 'before' and 'after' PEER took off by comparing two periods: March-April 2010 (almost no PEER use) and March-April 2011 (beginnings of PEER critical mass)
- In all cases, publisher use is very significantly up and, at face value, you would be hard pressed to make the case that PEER had badly impacted publisher use
- However, as we noted earlier, publisher downloads are growing in any case, so we need to take a more rigorous look at the data ...



Key finding: Cumulative downloads

- Looking at the same monthly data, this time cumulated, we find that the underlying model of growth is linear in both cases.
- Unless things change dramatically, it looks like these lines are not going to converge any time in the medium future.
- Publisher full text downloads are growing faster than PEER full text downloads and it follows that PEER's share of the market is likely to decline in real terms as we go forward,





PEER usage study findings II

Randomised controlled trial

PEER randomised controlled trial

A short anecdote about finding stuff on the web

Zoological Science meets Institutional Repositories Project

- Project Objectives:
 - To clarify the **details of usage** for articles deposited in IRs
 - To verify **whether IR deposit increases the number of article citations**
 - To verify **whether IR deposit decreases the number of publisher e-journal full-text downloads**

ZS Project: *Zoological Science* Meets Institutional Repositories

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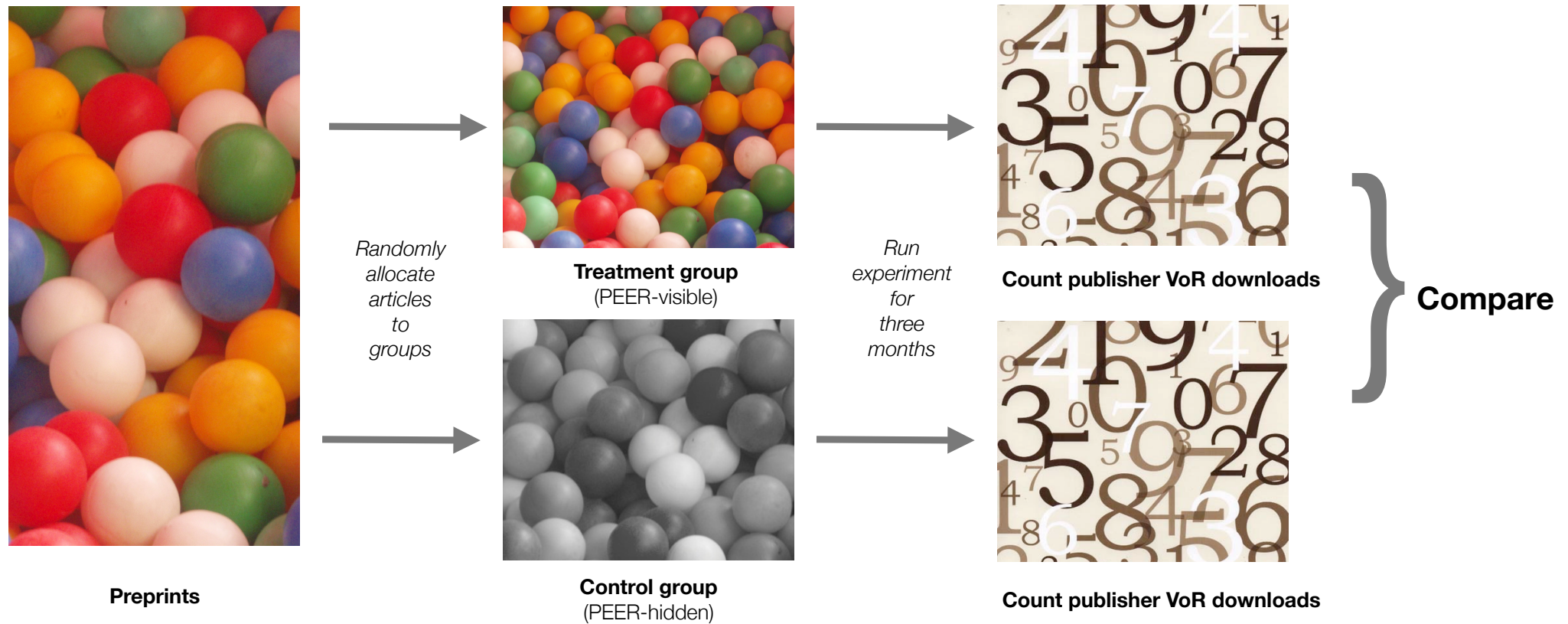
² The Zoological Society of Japan, Secretary-General

³ Research and Development Laboratory, Kyoto University Library

⁴ Library & Academic Information Section, Otaru University of Commerce Library

⁵ Electronic Resources section, University of Tsukuba Library

PEER randomised controlled trial



`No effect' publisher hypothesis

There is no difference in downloads per version of record at the publisher sites if we compare items that are exposed or hidden within PEER.

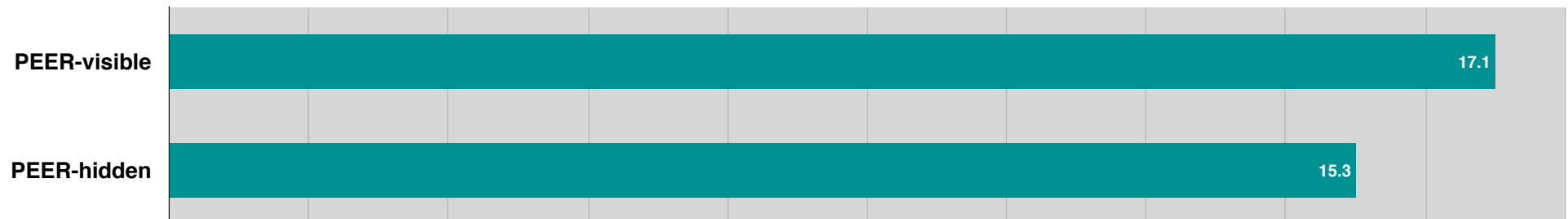


`No effect' publisher hypothesis: key findings

Making preprints visible in PEER is associated with more traffic to the publisher sites.


Publisher full text downloads increased by 11.4%

95% confidence intervals: 7.5% to 15.5%, highly statistically significant at $p < 0.01$



What is going on here?

Google Scholar

 [Advanced Scholar Search](#)

Scholar  [Create email alert](#)

[AcpA, a member of the GPR1/FUN34/YaaH membrane protein family, is essential for acetate permease activity in the hyphal fungus **Aspergillus nidulans**](#) [\[PDF\] from cnrs.fr](#)

X Robellet, M Flippi, S Pégot... - Biochemical ..., 2008 - [peer.ccsd.cnrs.fr](#)

... in the biochemical pathway for acetate utilization in the filamentous fungus **Aspergillus nidulans**. The **acpA** gene is located on chromosome V but it is not closely physically linked to any of the five other loci involved in acetate metabolism that also reside on this chromosome: ...

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AcpA, a member of the GPR1/FUN34/YaaH membrane protein family, is essential for acetate permease activity in the hyphal fungus *Aspergillus nidulans*

**Xavier Robellet¹, Michel Flipphi², Sylvine Pégot¹, Andrew P. MacCabe²
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Google Scholar, All versions



Scholar12 results (0.39 sec)

All versions

[AcpA, a member of the GPR1/FUN34/YaaH membrane protein family, is essential for acetate permease activity in the hyphal fungus *Aspergillus nidulans*](#)[Leicester eLink](#)

X Robellet, M Flippi, S Pégot... - Biochemical ..., 2008 - peer.ccsd.cnrs.fr

In a previous study, alcS, a gene of the *Aspergillus nidulans* alc cluster, was shown to encode a protein that belongs to the GPR1/FUN34/YaaH membrane protein family. BLAST screening of the *A. nidulans* genome data identified additional genes encoding ...

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[Leicester eLink](#)

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`No effect' publisher hypothesis: detailed findings

Publisher downloads went up in all subject areas, but with variation:

Statistically *significant* increases in

life sciences: up 20.3% (13.1% to 27.9%, $p < 0.01$)

physical sciences: up 13.1% (5.2% to 21.6%, $p < 0.01$)

Statistically *insignificant* findings in

medicine: up 5.2% (-1.0% to 11.7%, $p = 0.10$)

social sciences and humanities: up 4.1% (-0.05% to 13.9%, $p = 0.38$)

`No effect' publisher hypothesis: detailed findings

Publisher downloads were up for all publishers, except one.

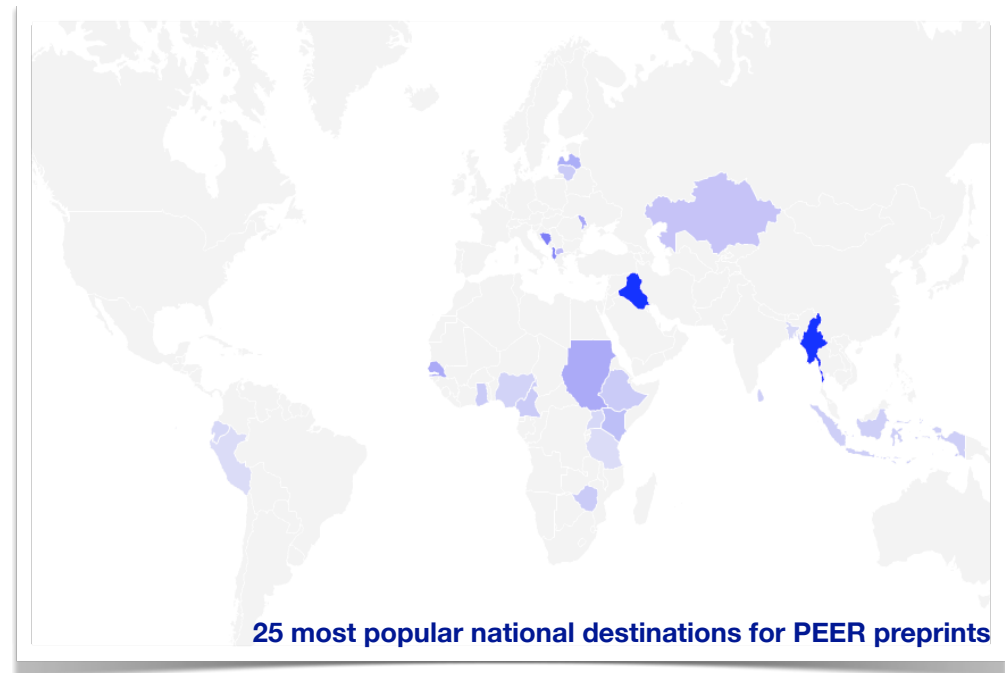
The effect varied by publisher size:

**Statistically *significant* increases for
larger publishers: up 12.6%** (8.3% to 17.0%, $p < 0.01$)

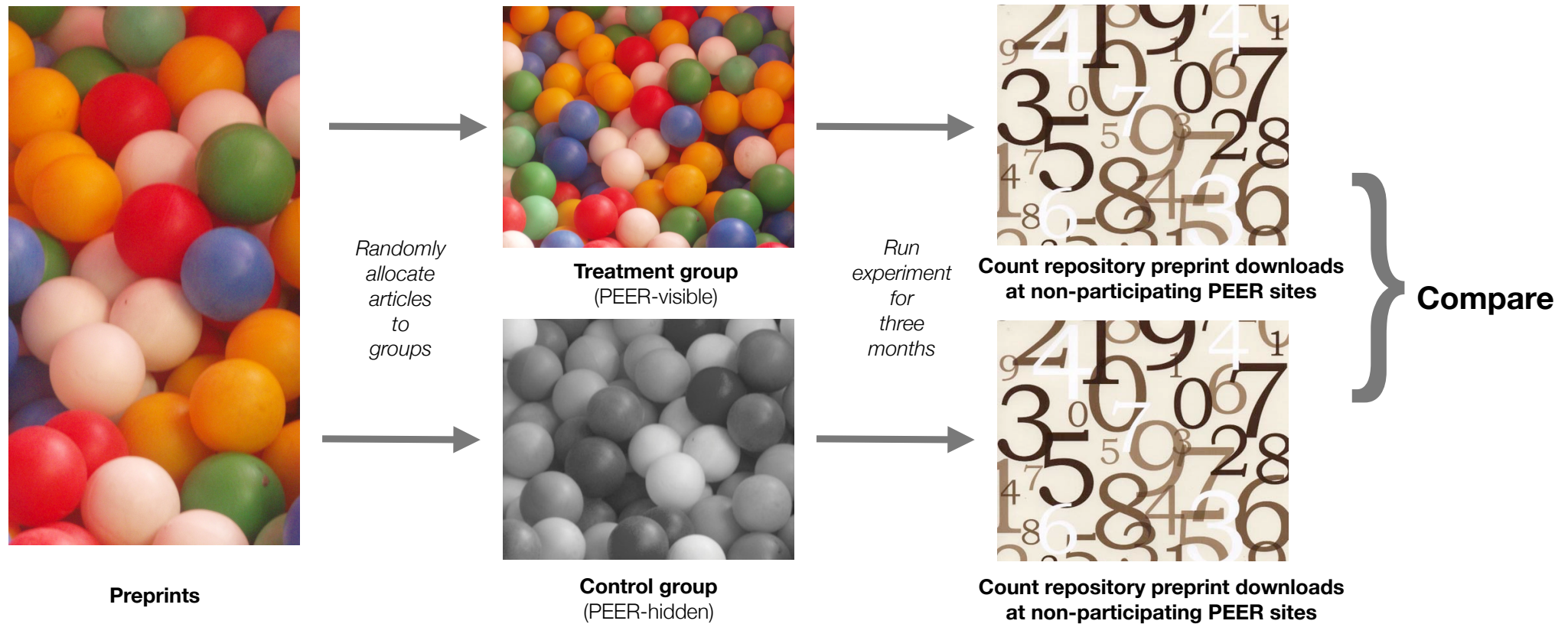
**Statistically *insignificant* findings for
smaller publishers up 3.3%** (-6.7% to 14.3%, $p = 0.53$)

Most popular destination for PEER preprints

Rank	Country	PEER downloads per 1,000 publisher downloads
1	Myanmar	36.6
2	Iraq	31.1
3	Bosnia-Herzegovina	23.1
4	Albania	22.2
5	Moldova	18.7
6	Sudan	18.0
7	Senegal	17.8
8	Latvia	17.3
9	Macedonia	14.7
10	Kenya	14.3
11	Kazakhstan	12.9
12	Cameroon	11.9
13	Lithuania	11.8
14	Ethiopia	11.6
15	Ghana	11.4
16	Zimbabwe	11.4
17	Indonesia	11.0
18	Sri Lanka	10.8
19	Nigeria	10.0
20	Bangladesh	9.5
21	Ecuador	9.1
22	Uganda	9.1
23	Peru	8.8
24	Tanzania	8.8
25	Vietnam	8.7

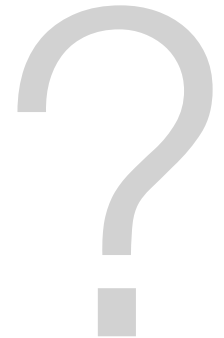


PEER randomised controlled trial



`No effect' repository hypothesis

There is no difference in downloads per preprint at non-participating PEER sites if we take down nearly half the content at the other sites.

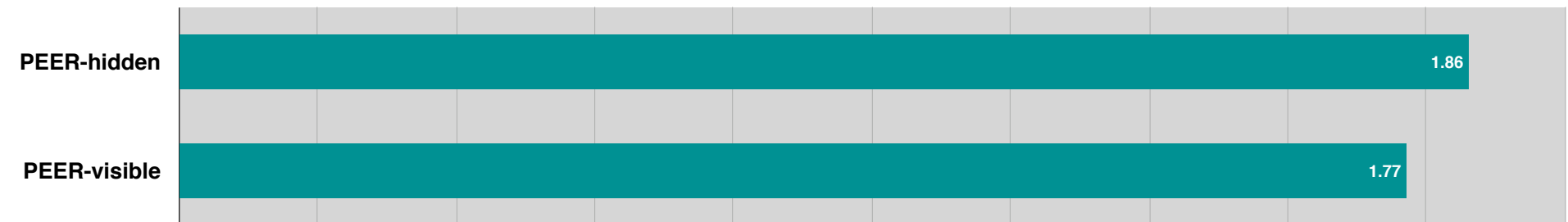


`No effect' repository hypothesis: key findings

Hiding preprints in some PEER repositories saw an increase in traffic to non-participating PEER sites.

PEER preprint downloads increased by 5.1%

95% confidence intervals: -1.7% to 12.4%, statistically insignificant at $p=0.14$



Conclusions

Overall, PEER is associated with a significant, if relatively modest, increase in publisher downloads, in the confidence range 7.5% to 15.5%.

The likely mechanism is that PEER offers high quality metadata, allows a wider range of search engine robots to index its content than the typical publisher, and thus helps to raise the digital visibility of scholarly content. There are variations as we zoom in on the detail and the jury is still out in medicine, the social sciences and humanities, and for smaller publishers, for reasons we do not understand yet.

Publisher downloads are growing at a faster rate than PEER downloads and unless there is a step change, PEER's share of the market is likely to decline gradually over time.

What this research tells us is that the scholarly web is a complex environment, one in which digital visibility is king. Researchers make little use of the search facilities on repository or publisher sites, relying heavily instead on third-party gateways and general search engines. They do not choose to 'log on' to repository or publisher databases, they are simply swept there by Google and other agents which are the scholarly equivalents of the remote control TV handset. All the channels are on, 24/7, and they're watching it all!

Further research

For the average user, downloads come with no emotional or economic baggage nor much physical effort. We each download software, articles, files, images and other content many times every day without even thinking, let alone remembering or pondering over its meaning.

This research poses questions that go well beyond open access business models, of whatever colour. The web is a complex space and neither repositories nor publishers yet have any detailed grip on what the precise paths users actually take to their content.

Opening up your content to a search engine is just the beginning of the conversation.

Information providers need a much sharper and more detailed set of road maps to understand the importance of search engines, social media and digital visibility more generally, in shaping individual journeys.