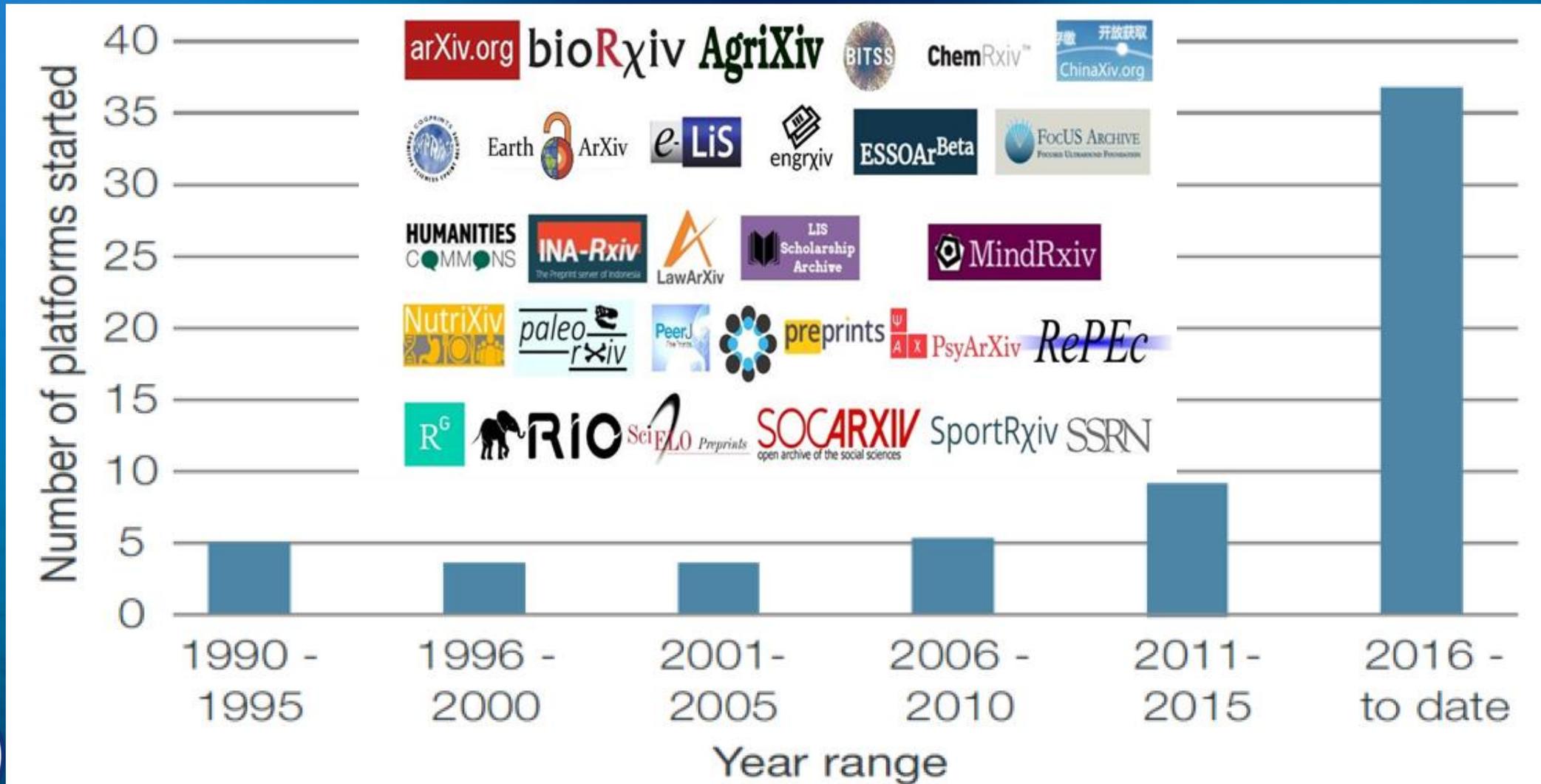


Applying organized skepticism to preprints

Howard I. Browman
Institute of Marine Research
Bergen, Norway
(fishlarvae.org)



Increase in # of preprint platforms

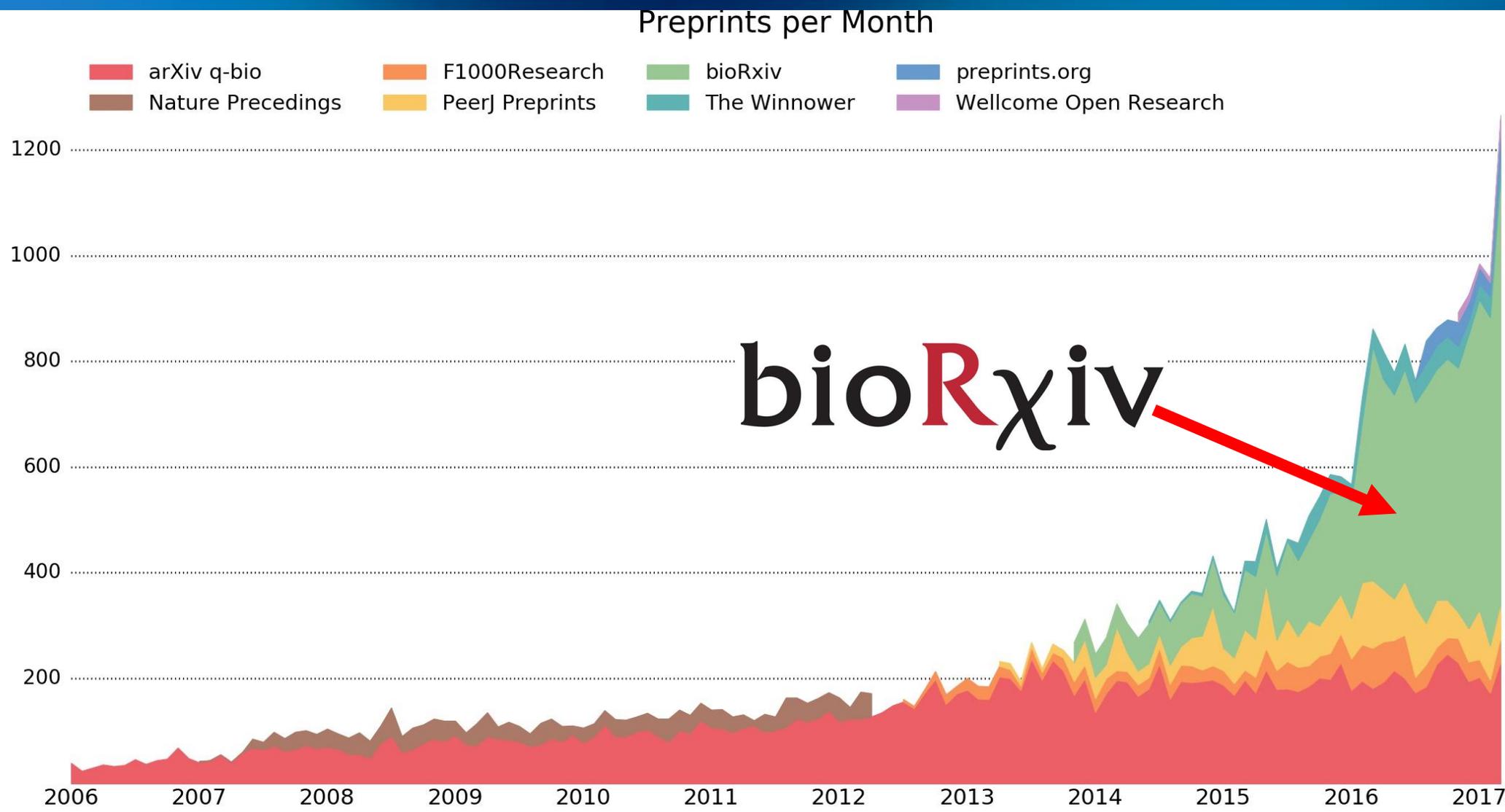


Number of preprint platforms started since the 1990s (source: Research Preprints and web research).

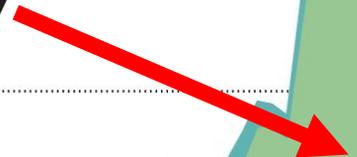
<https://researchpreprints.com/preprintlist/> (<https://researchpreprints.com/preprintlist/>).



Increase in # of preprints



bioRxiv











«Mr. Skeptic»

There is no agreement about what a preprint is



Knowledge Exchange

Knowledge Exchange 2019

What is a preprint?

Differing definitions: ambiguity is unavoidable in the landscape



Most common ↑
↓
Least common

A version of a paper ready to be submitted

A very early draft of a paper posted to receive comments from the community

A research output that hasn't been completed as a paper for review

A research output that is not expected to make it to the published stage (e.g. quality is too low, lack of necessity)

The author's accepted manuscript posted on a preprint server as a new version (even if this is, at least in theory, a post-print)

A version of an article uploaded to an institutional repository to comply with national/funder policies

Due to disciplinary differences, a definition cannot be artificially forced on the research community.



Despite the lack of a universal definition, preprints are

- Easily and widely accessible online
- Free to post and to access (for now)
- Have a DOI
- Are searchable
- Are not taken down when the material is eventually published in peer-reviewed form nor if it is never published (thus, how is it a PRE-PRINT?)
- Are online forever (supposedly).



Are preprints publications?



- Premise: A preprint is not a publication because it is not peer reviewed.
- However, a stated intent of posting a preprint is that it will be reviewed by the community. But if it is, then – following this premise - doesn't it become a publication?

Are preprints publications?

- Preprints are deemed not to be publications so that they are eligible for publication in a peer reviewed journal and are not considered duplicate publications or plagiarized material.
- Preprints are deemed to be publications so that they can be cited.





New Results

Comment on this paper

Parameter tuning differentiates granule cell subtypes enriching the repertoire of retransmission properties at the cerebellum input stage

Stefano Masoli, Marialuisa Tognolina, Umberto Laforenza, Francesco Moccia, Egidio D'Angelo

doi: <https://doi.org/10.1101/638247>

This article is a preprint and has not been peer-reviewed [what does this mean?].

bioRxiv preprint first posted online May. 14, 2019; doi: <http://dx.doi.org/10.1101/638247>. The copyright holder for this preprint (which was not peer-reviewed) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Parameter tuning differentiates granule cell subtypes enriching the repertoire of retransmission properties at the cerebellum input stage

Running title: cerebellar GrC richness

Stefano Masoli^{1}, Marialuisa Tognolina^{1*}, Umberto Laforenza⁴, Francesco Moccia³, Egidio D'Angelo^{1,2}*



What do they look like and how are they identified as preprints?

Should preprints be citable?

“The reference list at the end of the article should be restricted to work already published, or definitely accepted for publication (in press). Unpublished material, including work submitted to a journal but not yet formally accepted, should not be included.”

- Why are preprints an exception to this?
- Is it prudent to allow non-peer reviewed material to act as precedent/support for factual statements in a scholarly work?
- If we accept that preprints are exempt from this then, to be consistent, we will have to extend this exemption to many other previously uncitable items.



How do preprints relate to originality?

Typically, authors submitting their work to journals must state that the content of the manuscript is ORIGINAL (the “Ingelfinger rule”)

If it is already published on a preprint server that is free access, it has a DOI, it is searchable by indexing services, and the form in which it is submitted is essentially identical to the preprint version, then how is it original?



Benefits (?) of preprints

For authors

- Speeds up dissemination
- Low cost (currently free – is that sustainable?)
- Establishes precedence (prevents scooping)?
- Improves quality of papers pre-submission?
- Eliminates journal and other hierarchies?
- Identifies hypotheses not to test further by making negative results available?



For journals

- Source of submissions?
- Improves the quality of what is submitted?



Preprints speed up dissemination?



eLIFE
elifesciences.org

FEATURE ARTICLE

Open Access icon

CC icon

META-RESEARCH

Tracking the popularity and outcomes of all bioRxiv preprints

Abstract The growth of preprints in the life sciences has been reported widely and is driving policy changes for journals and funders, but little quantitative information has been published about preprint usage. Here, we report how we collected and analyzed data on all 37,648 preprints uploaded to bioRxiv.org, the largest biology-focused preprint server, in its first five years. The rate of preprint uploads to bioRxiv continues to grow (exceeding 2,100 in October 2018), as does the number of downloads (1.1 million in October 2018). We also find that two-thirds of preprints posted before 2017 were later published in peer-reviewed journals, and find a relationship between the number of downloads a preprint has received and the impact factor of the journal in which it is published. We also describe Rxivist.org, a web application that provides multiple ways to interact with preprint metadata.

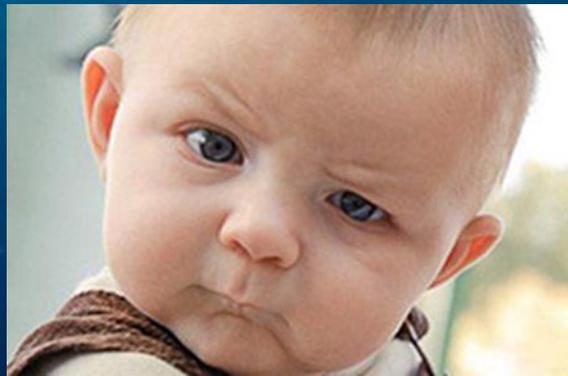
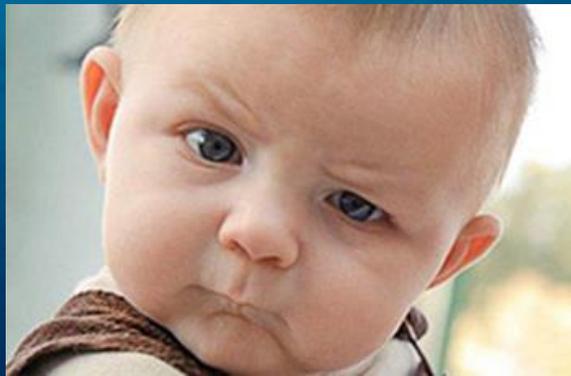
DOI: <https://doi.org/10.7554/eLife.45133.001>

RICHARD J ABDILL AND RAN BLEKHMAN*

“...the majority of published preprints appeared in a journal less than six months after being posted.”



**Does saving <6 months
significantly increase the
pace of discovery?**



Preprints improve the quality of papers?



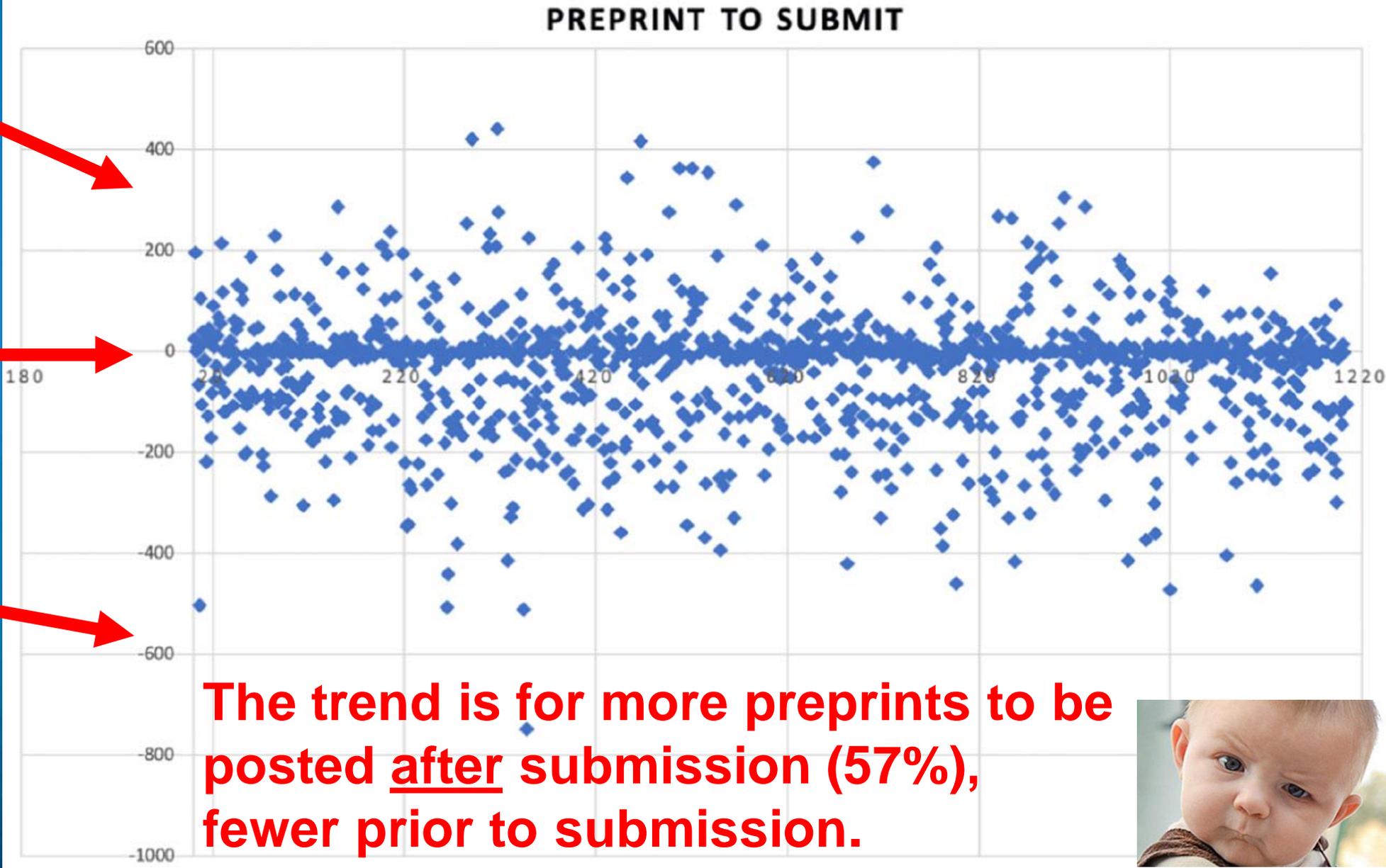
- 8-10% of preprints posted to bioRxiv are commented on. The majority of those comments are not substantive (Sources: John Inglis (bioRxiv); Sarabipour et al. 2019, PLOS Biology)
- Who is commenting on preprints? Peers?
- A small % of preprint authors report offline commenting. Even so, is that better than peer review?
- How long should authors wait for pre-publication review (do they wait)? What if they do not get any feedback?
- Why would a higher % of authors adopt recommendations on their preprint when they often do not do that after formal peer review?



days before submission that the preprint was posted

Day submitted to journal

days after submission that the preprint was posted



ORIGINAL ARTICLE

(wileyonlinelibrary.com) doi: 10.1002/leap.1265

The Association of Learned & Professional Society Publishers

Received: 4 September 2019 | Accepted: 16 October 2019

bioRxiv: Trends and analysis of five years of preprints

Kent R. Anderson

“...bioRxiv is being utilized by authors more as a pre-publication, post-acceptance platform...”

That is, NOT to improve their work before submission to a journal.



ORIGINAL ARTICLE

(wileyonlinelibrary.com) doi: 10.1002/leap.1265

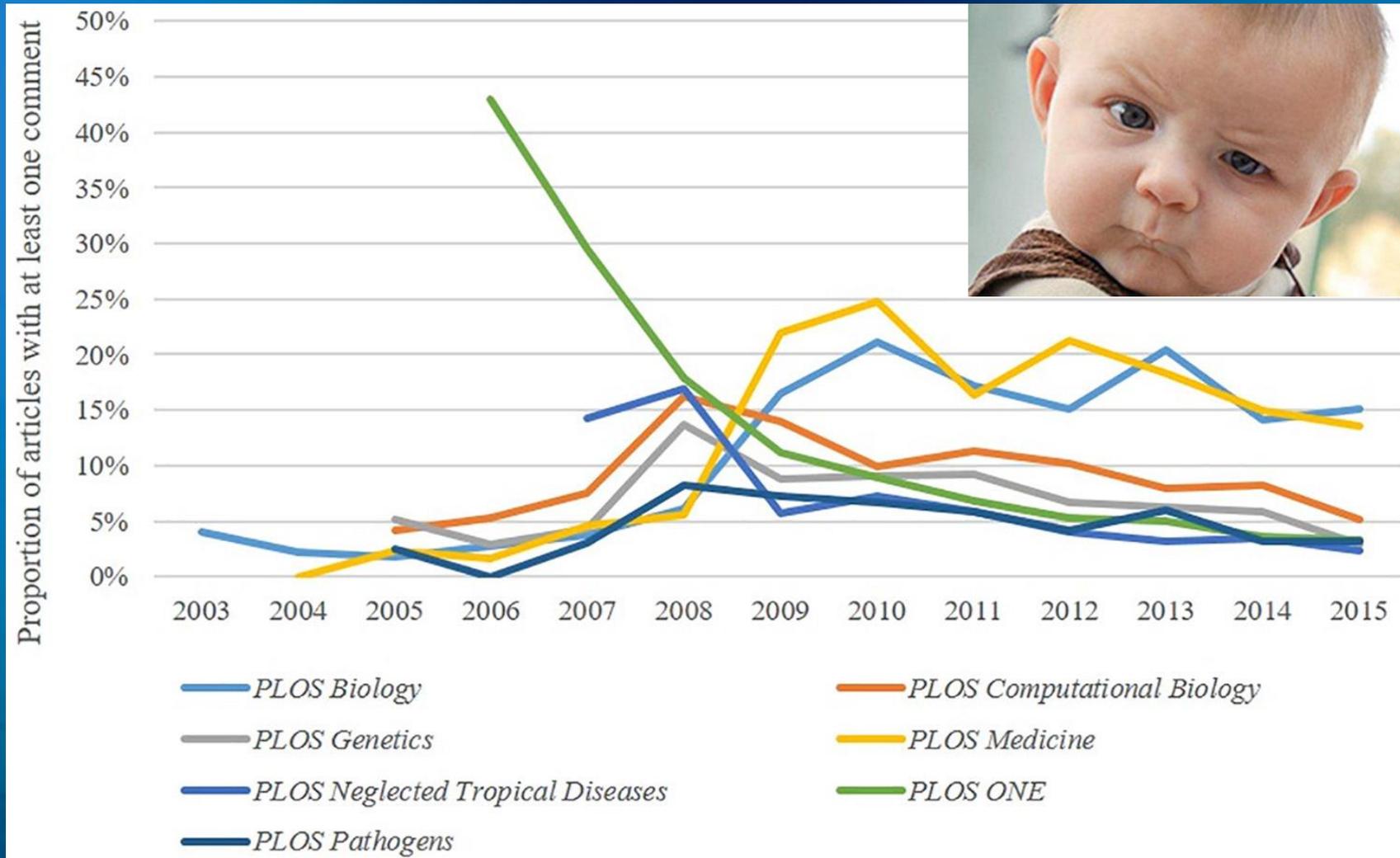
Received: 4 September 2019 | Accepted: 16 October 2019



bioRxiv: Trends and analysis of five years of preprints

Kent R. Anderson 

Post-publication commenting also has a low uptake



Research Paper

'No comment'? A study of commenting on PLOS articles

Simon Wakeling
Information School, The University of Sheffield, UK

JIS
Journal of Information Science
1-19
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DOI: 10.1177/0165551518819965
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While we can all agree that pre-publication peer review is not perfect...

...how is it possible to argue or conclude that post-publication commenting is better?



Key concerns-challenges about preprints

- **Safety**: Peer review removes more errors and unvetted claims than no review.
- **Safety**: Multiple competing versions (all of which are citable) of what, without careful and informed examination, appears to be the same content, persist in perpetuity. BUT the preprint version is much more likely to contain errors and unvetted claims.
- **Safety**: Presently, no one is responsible for updating the preprint version, nor to link it to the final published version.



Clin Orthop Relat Res (2019) 477:1-4
DOI 10.1097/CORR.0000000000000565

Clinical Orthopaedics
and Related Research®
A Publication of The Association of Bone and Joint Surgeons®

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Editorial

Editorial: *Clinical Orthopaedics and Related Research, The Bone & Joint Journal, The Journal of Orthopaedic Research, and The Journal of Bone and Joint Surgery* Will Not Accept Clinical Research Manuscripts Previously Posted to Preprint Servers

Seth S. Leopold MD, Fares S. Haddad FRCS(Orth), Linda J. Sandell PhD, Marc Swiontkowski MD

[OPEN](#)

The risk

Rapidly increasing number of freely available unvetted documents that look like peer reviewed articles (about 33% of which are never published (Anderson 2019))

Given the limited time saved, and the lack of improvement to most preprints, is it worth it?



Other concerns-challenges about preprints

Authors



- Loss of novelty
- Not all journals will accept mss that are already available as preprints
- Citation confusion (which is the VoR and when?)
- Adds to information overload
- Adds to author workload
- Impact on credibility and public perception of science



Other concerns-challenges about preprints



Journal editors

- If a piece of work is already out there in the public domain, and has been “community” peer reviewed on a preprint server, and has a DOI and is searchable and citable forever, then why should the volunteer editors and reviewers of a journal use their time to do that all over again?
- Why would a publisher, whose existence is based on ORIGINAL content, republish it?



Other concerns-challenges about preprints



Journals-publishers

- Possible publishing and access right conflicts
- Duplicate-redundant publication - definitions will have to be revisited
- Plagiarism – definitions will have to be revisited
- Loss of originality – what “originality” means will have to be revisited
- Loss of newsworthiness
- Multiple versions/version confusion and citation confusion
- Who is responsible for corrections-expressions of concern-retractions?



Final thoughts and provocations



“By granting authors wide distribution, permanent identifiers, social and online promotional opportunities, and a branded interface, preprint servers remove many of the incentives for seeking peer-review and working with editors on a solid, final, sound version of a paper. Peer-review becomes optional.”



Kent Anderson – The Geyser, 7 November 2019



How are preprint platforms different from social media or blogs?



Immediate dissemination of unvetted information feeds the instant-everything culture and is risky, particularly if it informs public policy or health, resulting in an erosion of confidence in formerly trusted sources of information

INSTANT
GRATIFICATION
YOU NEED THIS. RIGHT NOW. ←



**FAKE
NEWS**

CORP™

Fairly Imbalanced



