The case PLOS ONE

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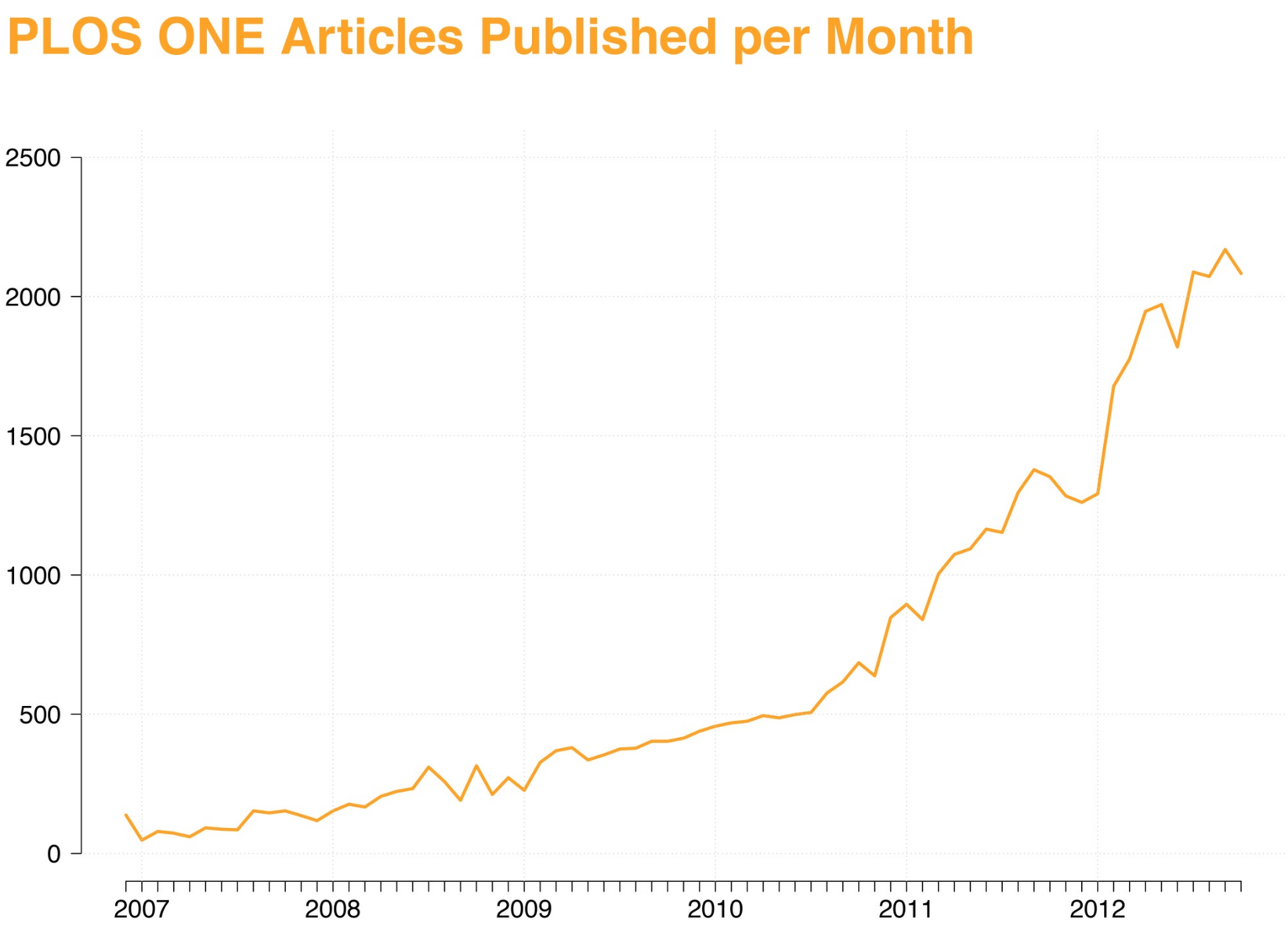
1. What is PLOS ONE?

•Public Library Of Science: is a non-profit organization of scientists and physicians (created in 2000, publishes articles since 2003)

•PLOS ONE publishes (online) primary research from any scientific discipline (other 6 PLOS journals are in biology or medicine)

•PLOS ONE is the largest journal of the world in number of published papers:



2. Open access and costs

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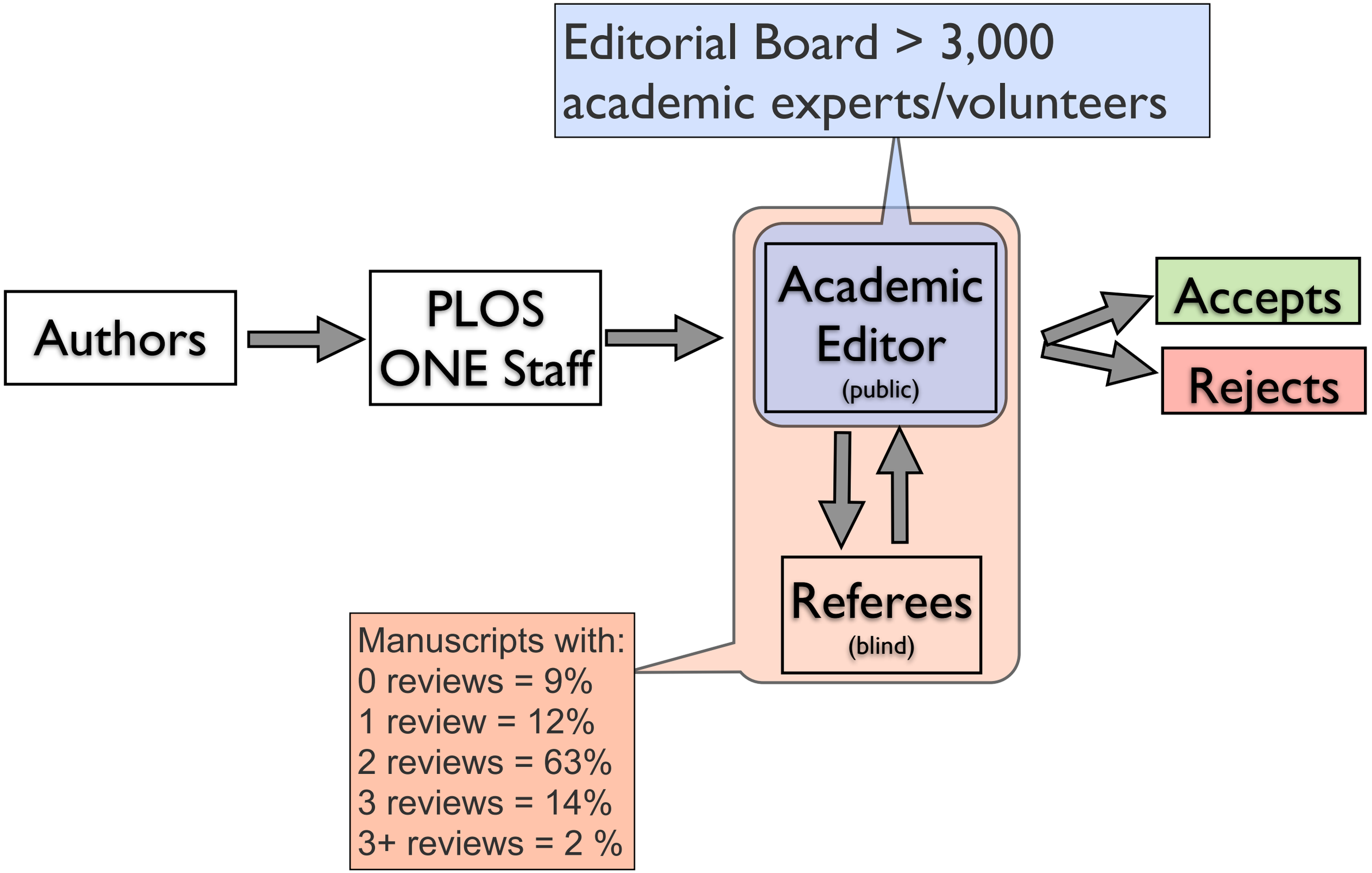
PLOS ONE is funded by charging to publish (pay once, price of storing << price of publishing)

Publication fee 1350 US$
(for german institutions, no effect on the submission process)

3. Peer-reviewed



3. Peer-reviewed

Example of a published Paper!

OPEN ACCESS PEER-REVIEWED

1,512	3	46
VIEWS	ACADEMIC BOOKMARKS	SOCIAL SHARES

RESEARCH ARTICLE

Phylomemetic Patterns in Science Evolution—The Rise and Fall of Scientific Fields

David Chavalarias, Jean-Philippe Cointet

Figure 3

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Abstract
Introduction
Materials and Methods
Results

Abstract

We introduce an automated method for the bottom-up reconstruction of the cognitive evolution of science, based on big-data issued from digital libraries, and modeled as lineage

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Application of phylomemy reconstruction to blogs
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Test on additional indicators
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Related work and model of social dynamics of science
Posted by fmenczer

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3. Peer-reviewed

Publication criteria:

1. The study presents the results of primary scientific research.
2. Results reported have not been published elsewhere.
3. Experiments, statistics, and other analyses are performed to a high technical standard and are described in sufficient detail.
4. Conclusions are presented in an appropriate fashion and are supported by the data.
5. The article is presented in an intelligible fashion and is written in standard English.
6. The research meets all applicable standards for the ethics of experimentation and research integrity.
7. The article adheres to appropriate reporting guidelines and community standards for data availability.

No "relevance" or "significance" required!

Relevance of the article should be assessed by the whole scientific community on long time scales rather than on the basis of subjective opinion of the referees at submission date.

Similarly:

Relevance of the articles should be assessed on their own merit rather than on the basis of the journal in which they were published.

Criticism of the "traditional" approach :

- Fat-tailed distribution *P(X)* of the number of papers with *X* citations
=> Impact factor is driven by few papers and is a bad predictor of quality of individual papers.

- Delay in the publication because of: (successive) rejections and extra (non-useful) requestes of additional experiments.

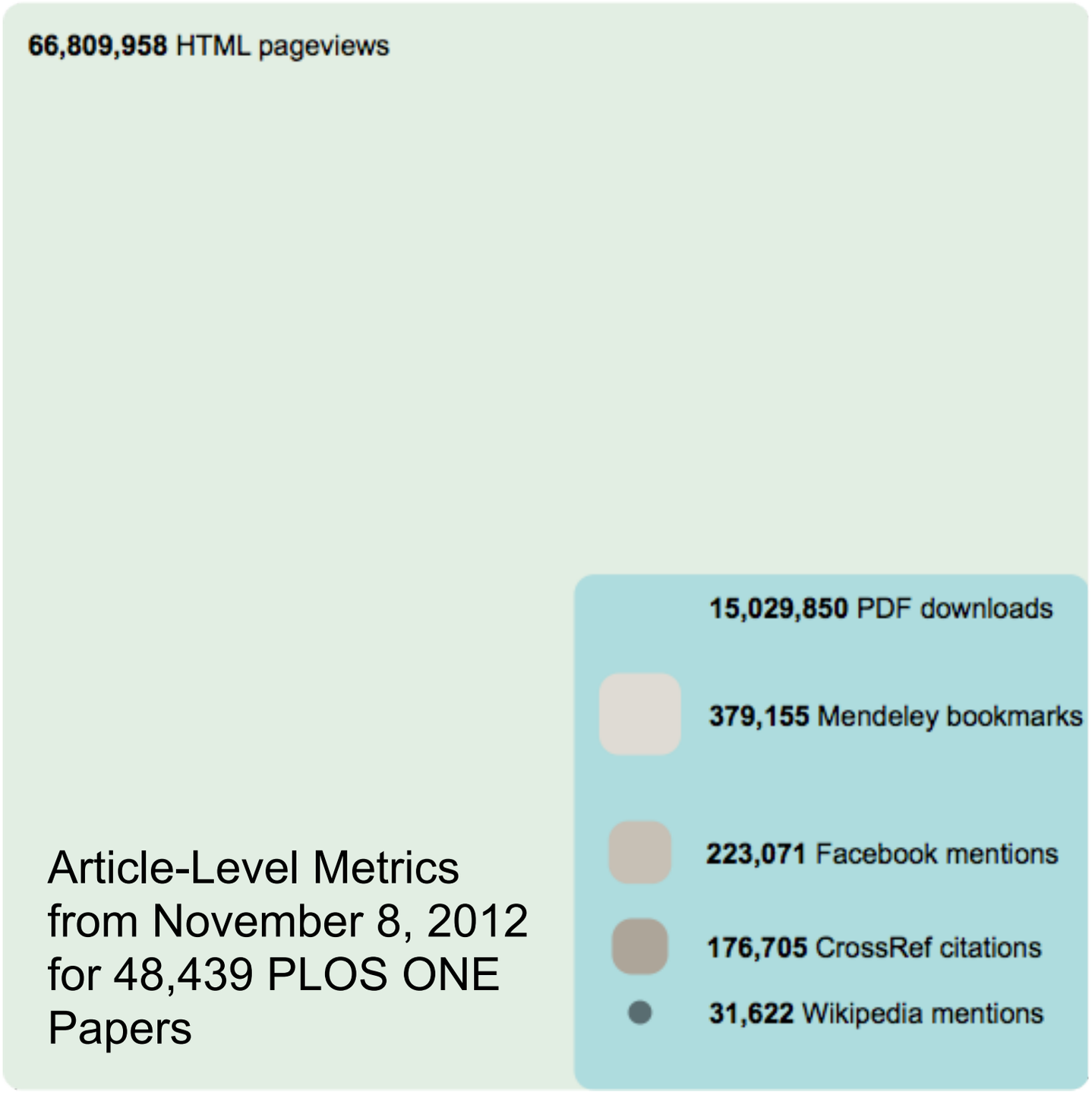
- Referee procedure becomes (highly) subjective ("high impact?" "general interest?")

- Acceptance is affected by the "agenda" of the journal or by the journal's interest in increasing its impact factor.

Motivation for an: Article level metrics

4. Article level metrics

Citations are only a small fraction of how a paper is reused and discussed



4. Article level metrics

The PLOS Article-Level Metrics project started in 2009 and tracks usage, citations and social web activity for all PLOS articles

Usage

PLOS Journals (HTML, PDF, XML)

PubMed Central (abstract, fulltext, PDF, figures)

Citations

CrossRef

Scopus

Web of Science

PubMed Central

Social Web

Mendeley

CiteULike

Facebook

Twitter

Research Blogging

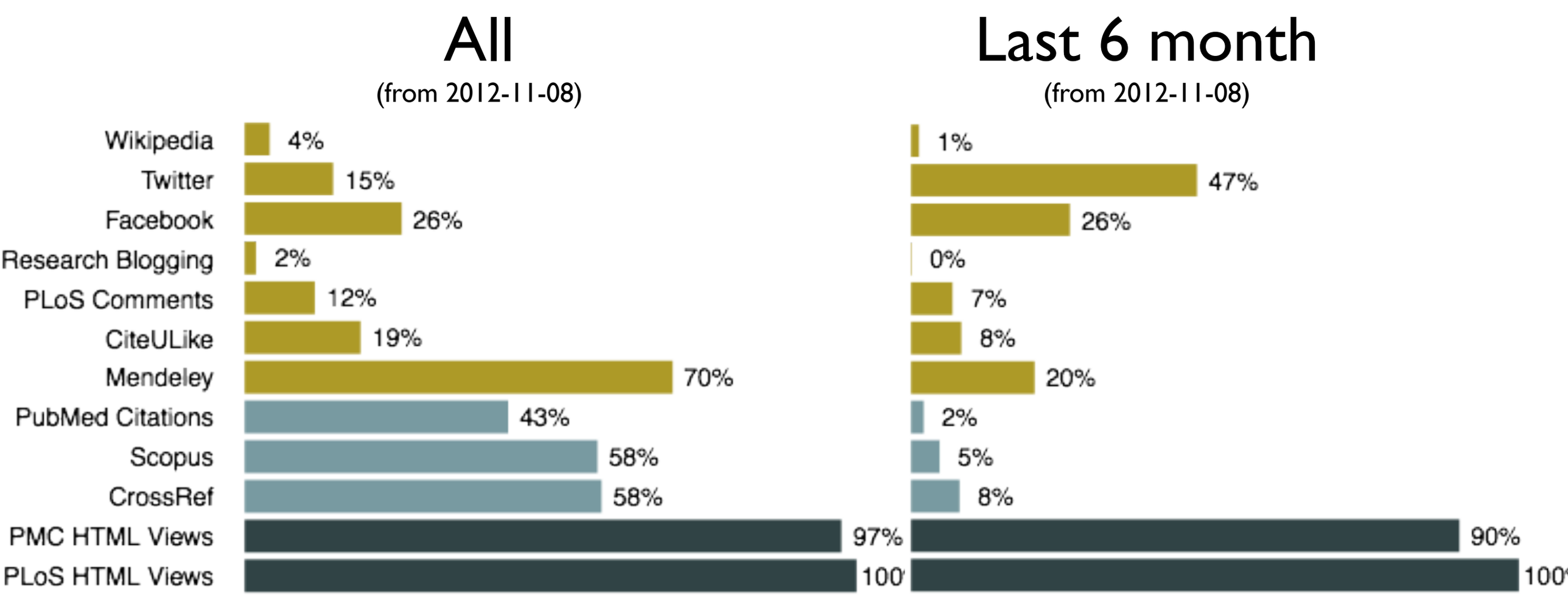
PLOS Comments

Wikipedia

See https://speakerdeck.com/mfenner/article-level-metrics-1, by Martin Fenner

4. Article level metrics

Proportion of articles covered by source



What are all these features measuring?

Impact

Attention

Self-Promotion

4. Article level metrics

is more than just a tool to assess the impact of papers/authors

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RESEARCH ARTICLE

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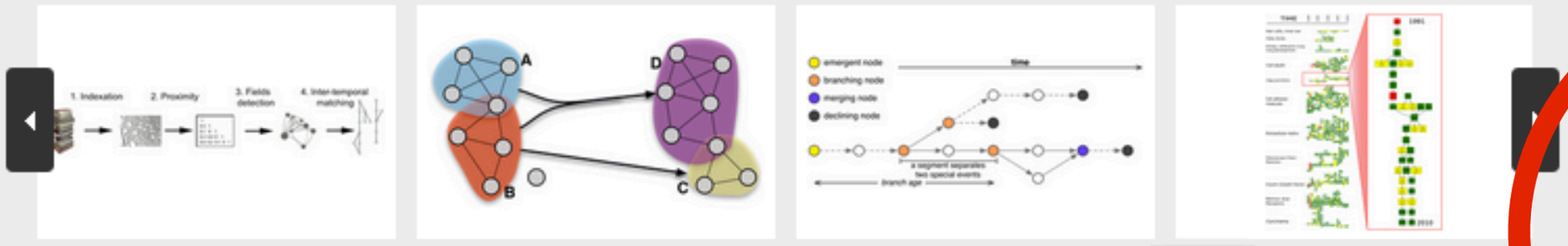

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Abstract

Abstract

4. Article level metrics

Metrics as a discovery tool

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- [ ] Computational Biology (2,038)

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Detection o RNAs on an Oligonucleotide Microarray

Michael J. Lodes iu, Sandra Munro, Amit Kumar, Brooke Anderson

*of **Cancer** with **Serum** miRNAs on an Oligonucleotide **Microarray** **Cancer** Detection with miRNAs Michael J. Lodes ... Detection of **Cancer** with **Serum** miRNAs on an Oligonucleotide **Microarray** ... was used to detect **serum** miRNA from ovarian **cancer***

PLoS ONE: Research Article, published 14 Jul 2009

10.1371/journal.pone.0006229

Views: 12056 Citations: Yes Bookmarks: Yes

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Michael Tachezy, Hilke Zander, Andreas H. Marx, Phillip R. Stahl, Florian Gebauer, Jakob

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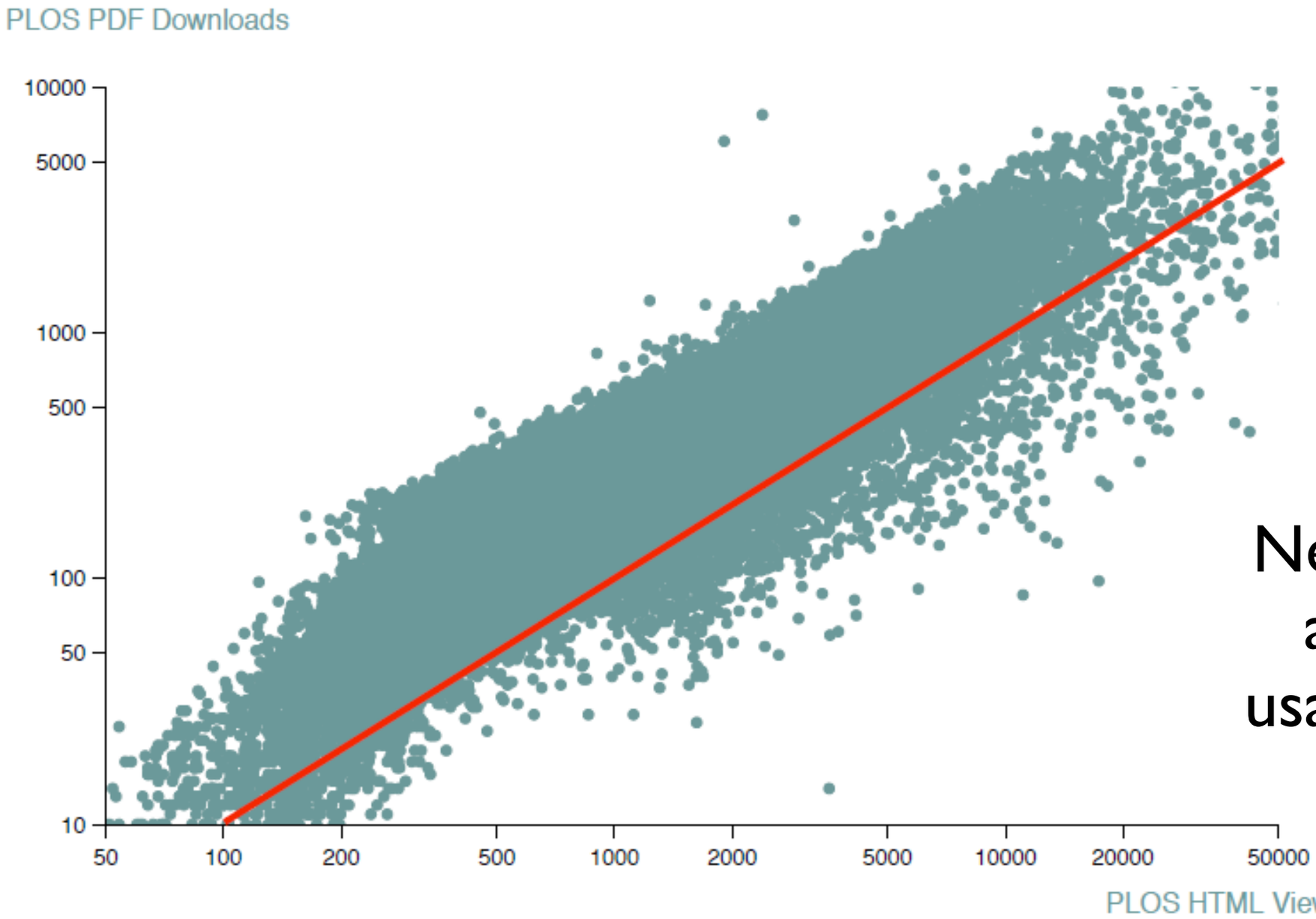
4. Article level metrics

Data!, e.g. to:
- understand how people use the journal
- find out how specific topics are related/discovered

Usage data from the PLOS website for 56,208 PLOS articles. Data collected August 8, 2012. Log−log scale.



New possibilities of applications and usages in the future!

Thank

PLOS ONE staff
(Masami Overstreet, Camron Assadi, Lindsay Kelley)

Martin Fenner
(see also https://speakerdeck.com/mfenner/article-level-metrics-1)

for the help in organizing this presentation
(data and slides)

you

for your attention!

More?

http://www.plosone.org

http://www.pks.mpg.de/~edugalt

@egaltmann (on twitter)