

# Peer Community In...

Denis Bourguet  
Benoit Facon  
Thomas Guillemaud



**A free recommendation process of unpublished scientific papers based on peer reviews**



<https://peercommunityin.org>, @PeerCommunityIn

PCI

# Scientific Publication

## • What is the value of publishing scientific articles?

- Makes science public
- Ensures the quality of science
- Defines anteriority of results
- Makes articles searchable/findable
- Archives for the future



Tennant et al. *Publications* 2019, 7(2), 34

## • Inefficient system

- Submissions/rejections in cascade
- 2 months to 1 year for an evaluation
- > 1-2 years to read a paper

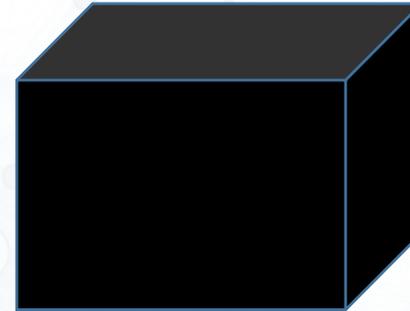


# Scientific Publication

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- **Not transparent**

- Reviews and decisions not published
- Editor not always known
- Readers do not know why papers are accepted



- **New model of paid OA: A Vicious system**

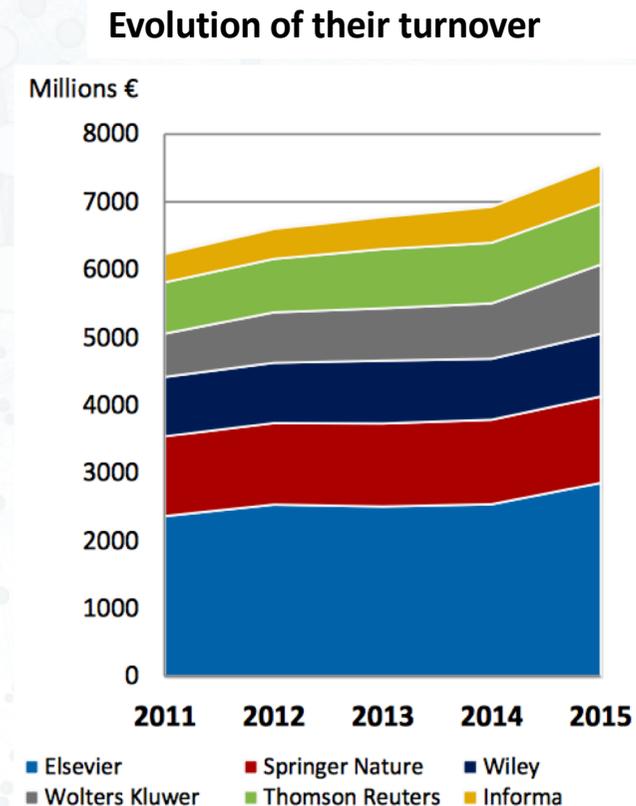
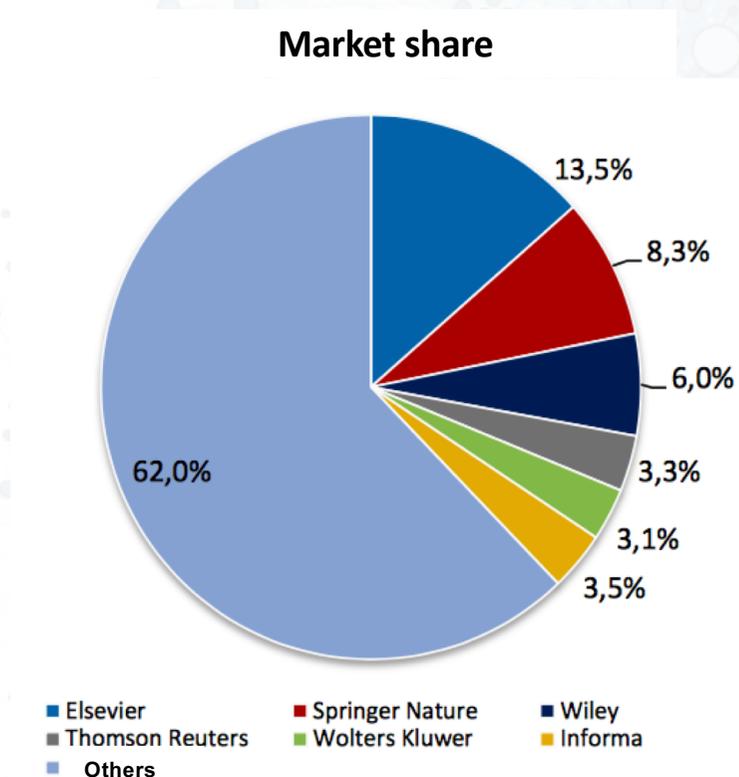
- Paying OA: Every accepted article contributes to the publishers' turnover
- + Researchers are evaluated on their ability to publish
- = Conjunction of interest between researchers and publishers
- snowball effect, should decrease quality



# Context 2

## Expensive system held by 6 big publishers

- Big 6 publishers publish 54% of the scientific publications, 38% of the market
- Paying readers (subscription) → Paying authors (APC), (France €120 M/year)
- €9 Billion / 3 millions articles = 3000 € / articles



Sources: Eprist, 2018 STM report

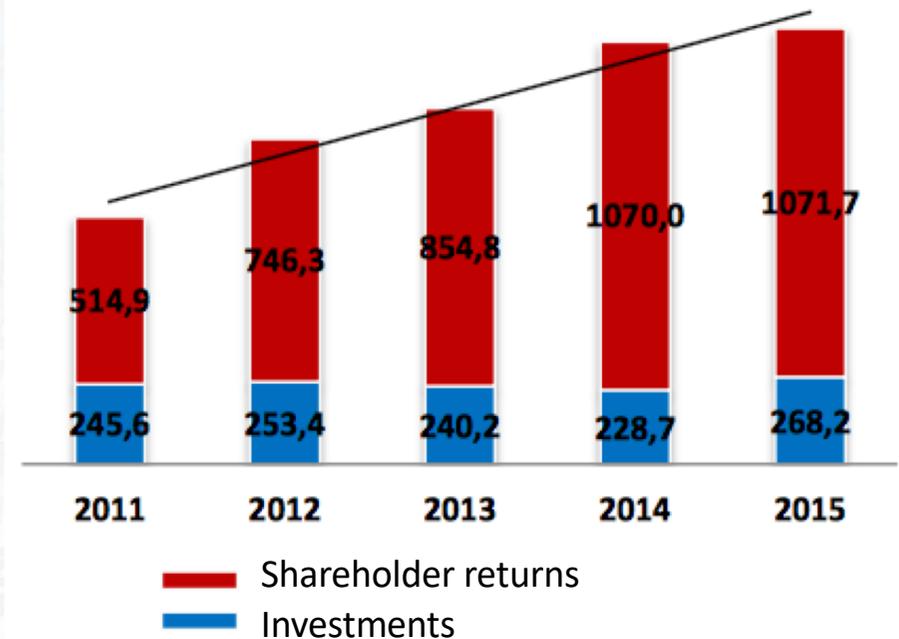
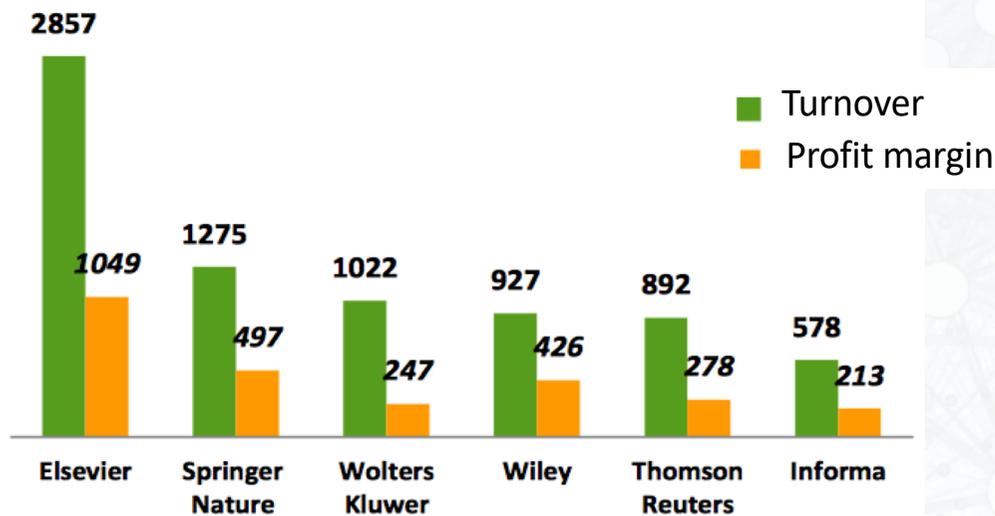
<https://peercommunityin.org>, @PeerCommunityIn

# Context 3

## Non-standard profit margins

Millions €

Mean profit margin = **38%**



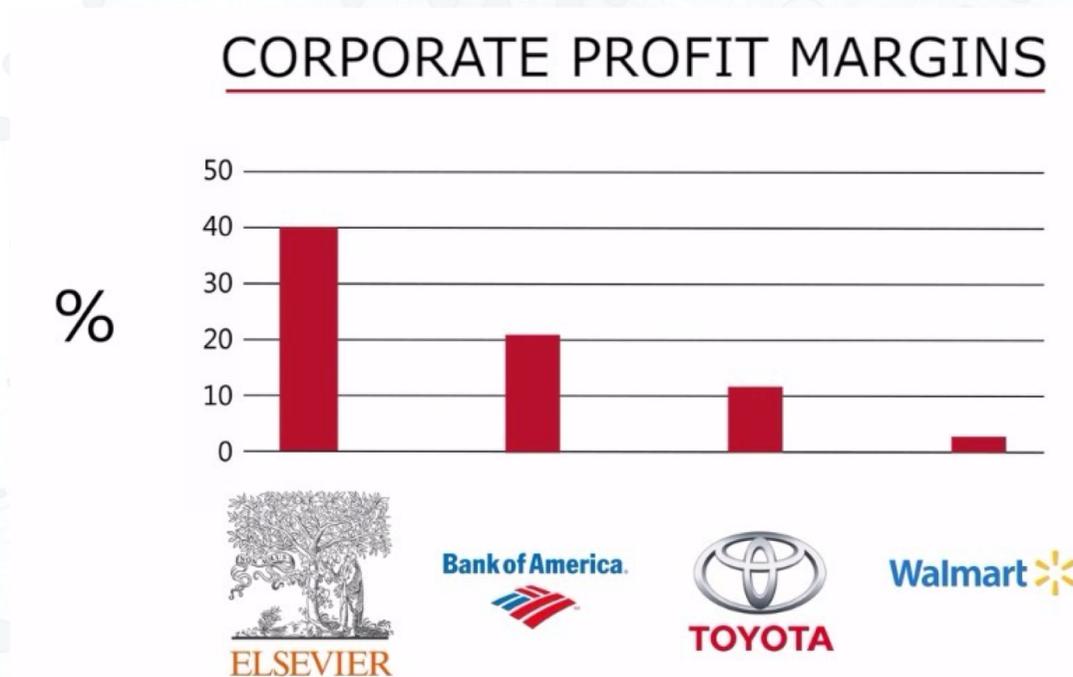
Sources: Eprist

<https://peercommunityin.org>, @PeerCommunityIn

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# Context 3

## Non-standard profit margins



**Researchers do almost everything:** write, evaluate, edit, proofread, format  
→ **idea of re-appropriating the publication system**

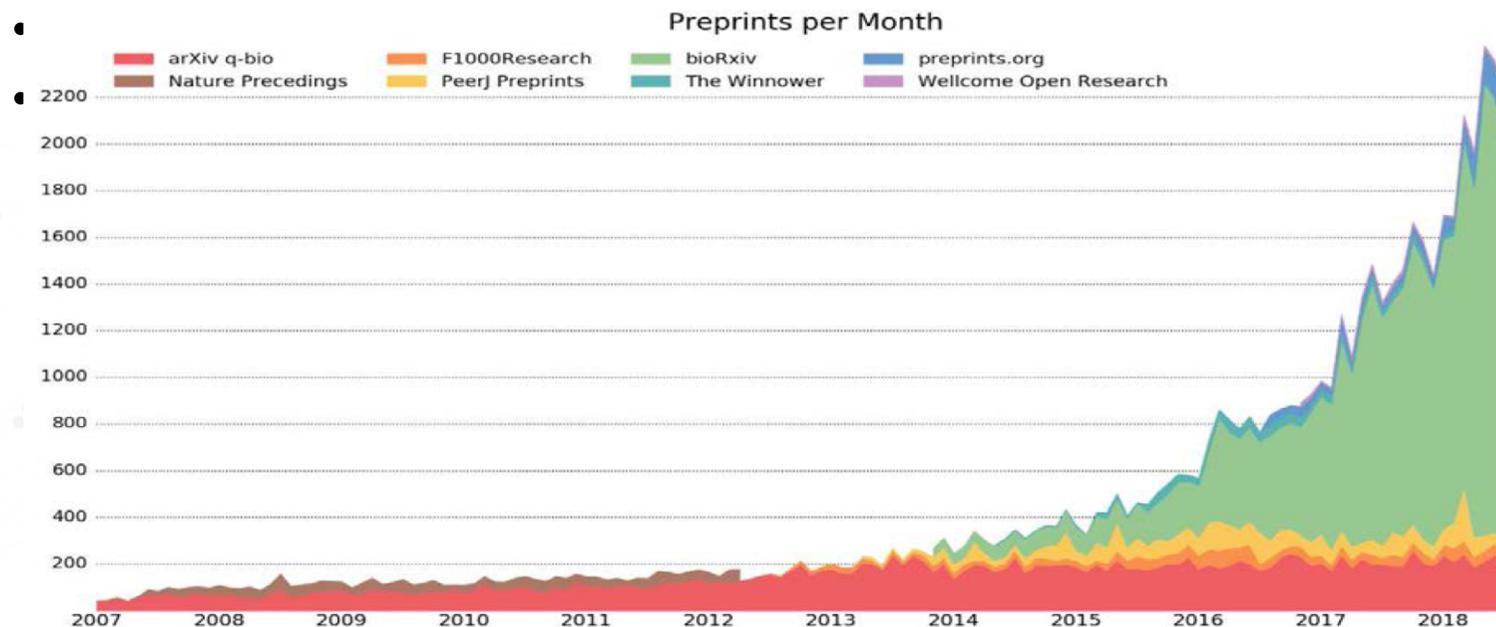
# Context 4

- **Scientific publishing on the internet**

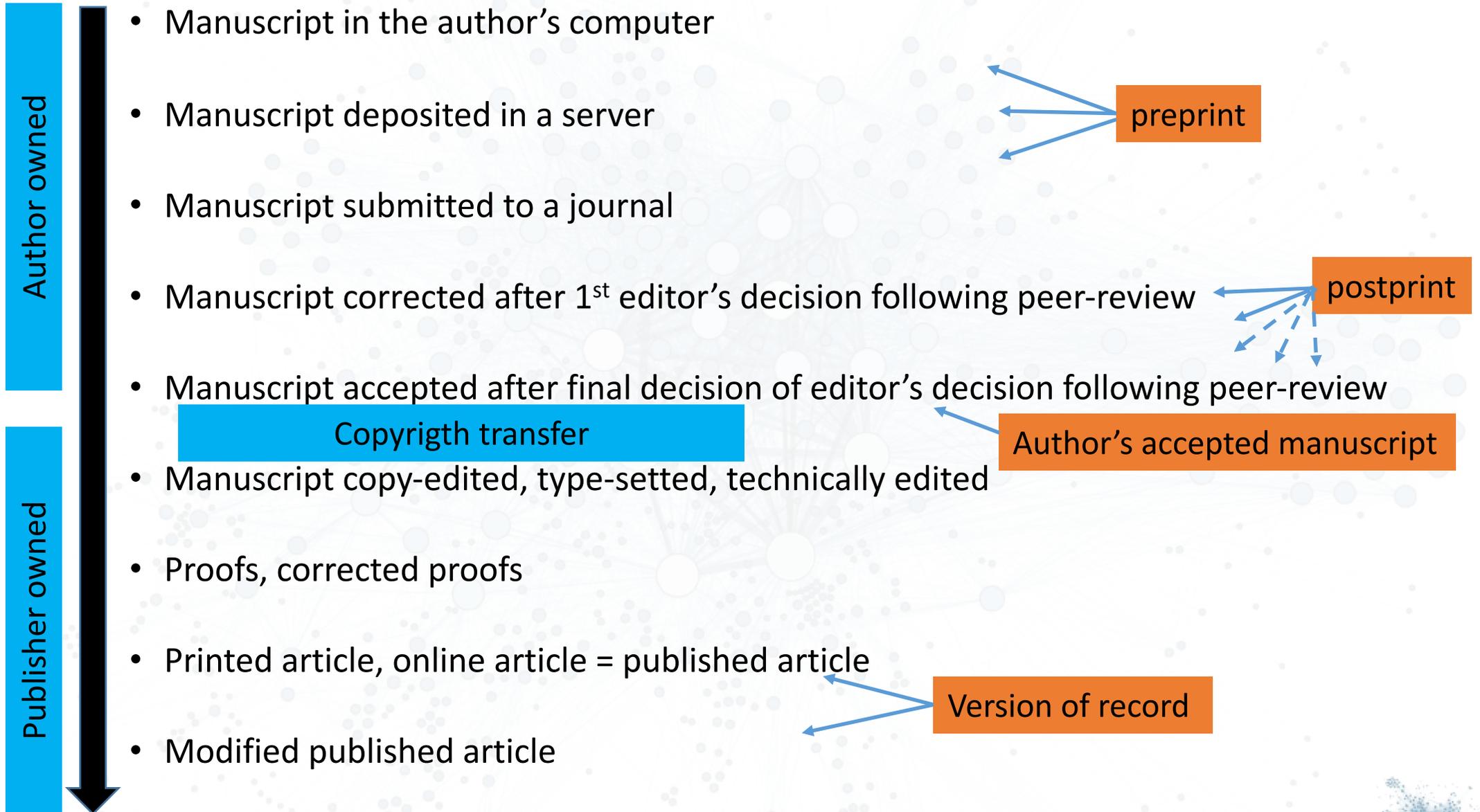
- Very low publishing costs (arXiv: 800 000 \$ / yr / 120 000 art / yr ~ 7 \$ / art)
- Free tools available (eg OJS)

- **A huge rise of preprints deposit**

in biology on open archives (mostly bioRxiv in a similar way than arXiv)



# What is a preprint?



# Preprint archives

**arXiv.org** (Cornell) (eprint, no DOI)

Institutional repositories, ex

**zenodo**

**bioRxiv** (CSHL)

preprints.org (MDPI)



<https://peercommunityin.org>, @PeerCommunityIn

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# Models of Open Access

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- Green Open Access
  - The article is published in a paywall journal
  - + The authors deposit an OA copy of the article
- Gold Open Access
  - The publisher deposits an OA copy of the article
  - To pay (ex PLoS) or not
- Diamond Open Access = 2-way OA, ex: Sci-Post, Eur J of Taxonomy
- Overlay journals, ex: Discrete Analysis

# A move to Open Access

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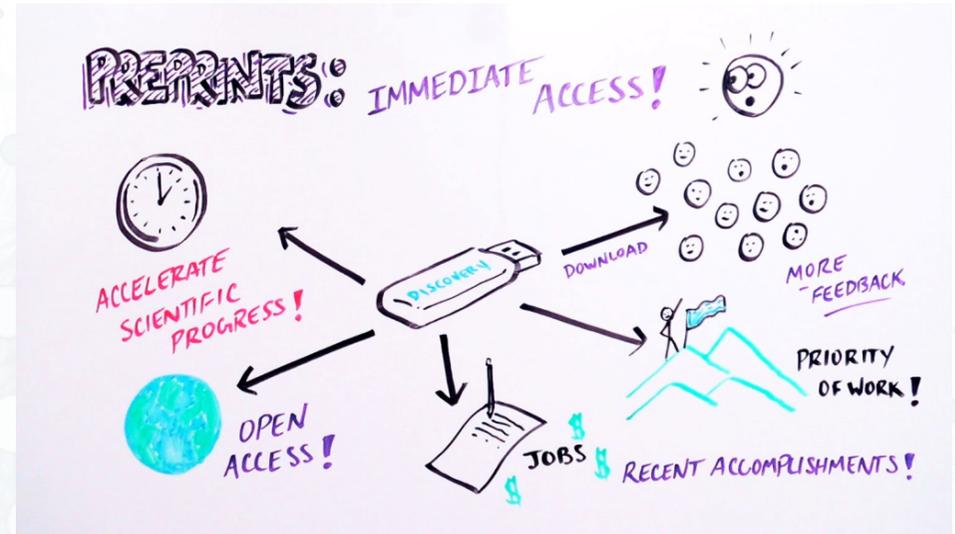
- National laws (US, France, ...)
  - OA but embargos
- Plan S
  - cOAlition S: 15 national funders + 4 foundations + ERC and EC
  - *“After 1 January 2020 scientific publications on the results from research funded by public grants provided by national and European research councils and funding bodies, must be published in compliant Open Access Journals or on compliant Open Access Platforms.”*

Open Access journals or Open Access platforms	Deposition of scholarly articles in Open Access repositories
Authors publish in a Plan S compliant Open Access journal or on a Plan S compliant Open Access platform with a CC BY license.	Immediately upon publication, authors deposit the final published version of a scholarly publication (Version of Record (VoR)) or an Author's Accepted Manuscript (AAM), in a Plan S compliant repository. The document is made available immediately open access (with no embargo) under a CC BY license.

# Context 5

- **Preprints are good...**

- Free for authors and readers
- Available immediately
- Archive
- Proof of anteriority
- Searchable/Findable



- **But putative quality problem...**

- No formal evaluation – no peer-review
- Everything can be found in open archives including preprints of very bad quality

- **We therefore need preprint evaluation**

- Evaluation could be disconnected from publication (open archives)
- Evaluation could be disconnected from the market
- Evaluation could be organized by the scientists themselves

# The *Peer Community in* (PCI) project

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- **Our goal**

Create several communities of researchers evaluating (through peer review) and recommending (highlighting) articles in their scientific field, e.g. *PCI Ecology*, *PCI Evolutionary Biology*, *PCI Paleontology*, etc..

- **Recommended articles**

Mostly preprints

bioRxiv arXiv.org

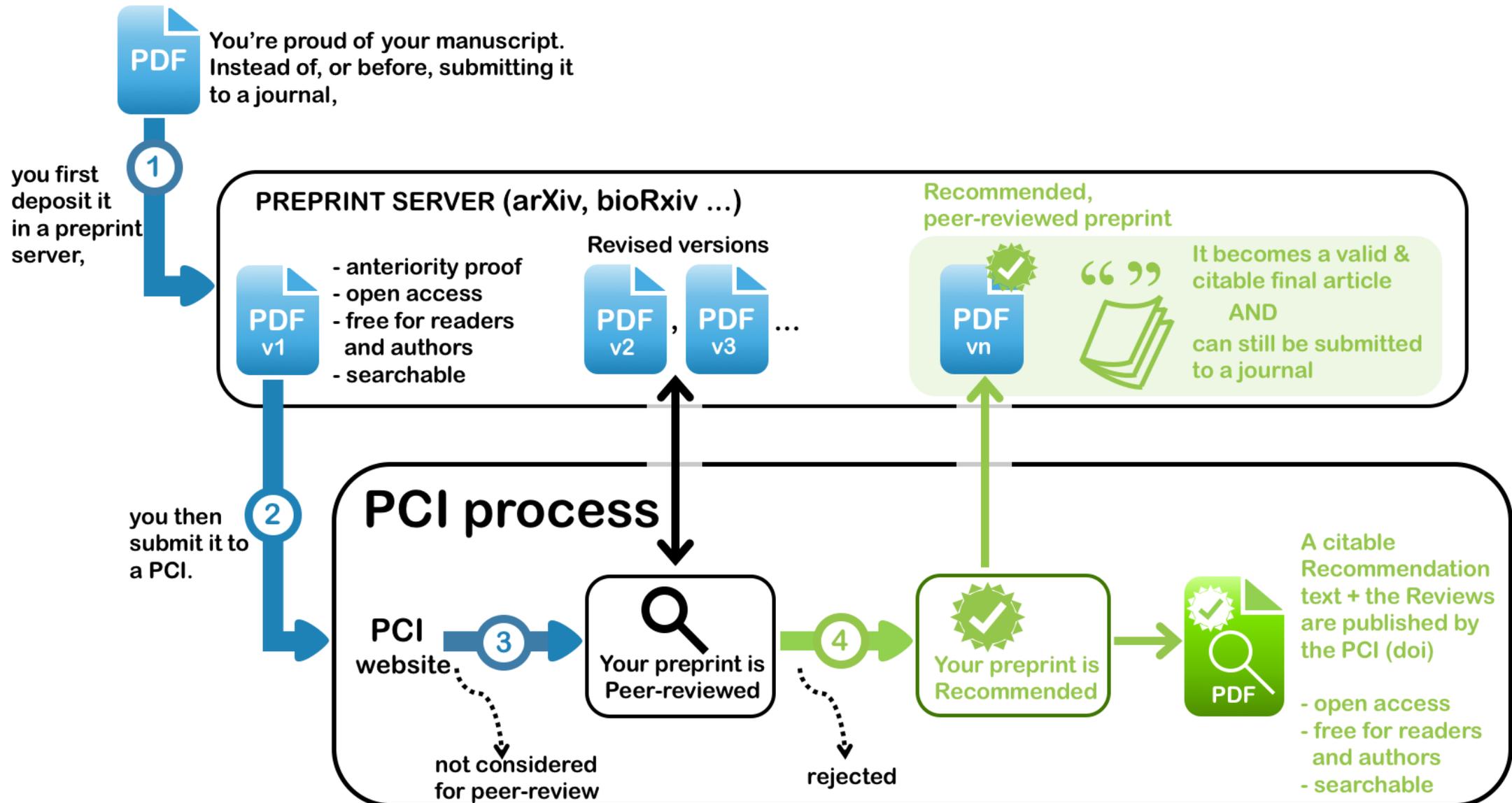
zenodo

- **Characteristics**

- Completely free (for authors as well as for readers) = DIAMOND OA
- Publication of recommendation texts and reviews not preprints.

=> different from traditional journals

# How does this work?



# Peer Community in ...

- **A preprint recommended by a PCI** is a valid and citable article.

*Noel et al. (2018). Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. bioRxiv 273367, ver. 3 peer-reviewed by PCI Evol Biol DOI: 10.1101/273367*

- **Editors**
  - Are equivalent to associate editors in traditional journals
  - Large number
- **Referees**
  - ≥ 2 who can be chosen within or outside the PCI
- **What does PCI publish?**
  - PCI only publishes reviews and recommendation of preprint if **recommended**
- **PCI ...**
  - = electronic journal of reviews and recommendation texts

## Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations

Elsa Noël, Elise Fruite, Denyss Lelaurn, Nicolas Bonel, Adeline Segard, Violette Sarda, Philippe Jarne, Patrice David

**Cite as:**  
Noël E, Fruite E, Lelaurn D, Bonel N, Segard A, Sarda V, Jarne P, and David P. (2018). Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. *bioRxiv* 273367. doi:10.1101/273367

Peer-reviewed and recommended by Peer Community in Evolutionary Biology

Recommendation DOI: 10.24072/pci.evolbiol.100055  
Recommender: Charles F Baer

Based on reviews by: anonymous and anonymous

## Inbreeding compensates for reduced sexual selection in purging deleterious mutations

Charles F Baer<sup>1</sup>

<sup>1</sup> Department of Biology, University of Florida – Gainesville, USA

**A recommendation of**  
Noël E, Fruite E, Lelaurn D, Bonel N, Segard A, Sarda V, Jarne P, and David P. Sexual selection and inbreeding: two efficient ways to limit the accumulation of deleterious mutations. *bioRxiv* 273367, ver. 3 peer-reviewed by PCI Evol Biol (2018). doi:10.1101/273367

Two evolutionary processes have been shown in theory to enhance the effects of natural selection in purging deleterious mutations from a population (here "natural" selection is defined as "selection other than sexual selection"): First, inbreeding, especially self-fertilization, facilitates the removal of deleterious recessive alleles, the effects of which are largely hidden from selection in heterozygotes when mating is random. Second, sexual selection can facilitate the removal of deleterious alleles of arbitrary dominance, with little or no demographic cost, provided that deleterious effects are greater in males than in females ("genic capture"). Inbreeding (especially selfing) and sexual selection are often negatively correlated in nature. Empirical tests of the role of sexual selection in purging deleterious mutations have been inconsistent, potentially due to the positive relationship between sexual selection and intersexual genetic conflict.

In their preprint, Noël et al. [1] report a cleverly designed, and impressively long-term, experimental evolution study designed to tease apart the relative contributions of selfing and sexual selection in purging deleterious mutations, using the self-compatible hermaphroditic snail *Physa acuta*. Hermaphroditism relieves at least some of the potential conflict between males and females because each individual expresses traits of each sex. The authors report a 50-generation (ten years) evolution experiment with four experimental treatments: Control (C), in which snails reproduced by mass mating (allowing sexual selection) and the next generation was sampled randomly from offspring in proportion to maternal family size; Male-selection (M) in which snails reproduced by mass mating but maternal family size was

# How to find recommended papers?

The screenshot shows the Europe PMC search interface. The browser address bar displays the URL: [https://europepmc.org/search?query=\(LABS\\_PUBS:"1826"\)](https://europepmc.org/search?query=(LABS_PUBS:). The search bar contains the query "(LABS\_PUBS:"1826")" and a "Search" button. Below the search bar, there is a suggestion: "E.g. 'breast cancer' HER2 Smith J".

The results section shows 58 results. The first two results are preprints:

- [When higher carrying capacities lead to faster propagation](#) Preprint  
Haond M, Morel-Journel T, Lombaert E, Vercken E, Mailleret L, Roques L  
bioRxiv [25 Apr 2018]  
Cited: 0 times (PPR:PPR13986)
- [Palaeobiological inferences based on long bone epiphyseal and diaphyseal structure - the forelimb of xenarthrans \(Mammalia\)](#) Preprint  
Amson E, Nyakatura JA  
bioRxiv [13 May 2018]  
Cited: 0 times (PPR:PPR12894)

On the right side, there are filters for "Content types" and "Date":

- Content types:
  - [Free full text \(16\)](#)
  - [Open access \(11\)](#)
  - [Preprints \(34\)](#)
- Date:
  - [2018 \(4\)](#)
  - [2017 \(33\)](#)
  - [2016 \(18\)](#)

<https://peercommunityin.org>, @PeerCommunityIn

# Where are we?

*Peer Community in* **Evolutionary Biology**  
(Denis Bourguet, Benoit Facon & Thomas Guillemaud)



**Peer Community In**  
Evolutionary  
Biology

*Peer Community in* **Paleontology**  
(Jeremy Anquetin & Guillaume Billet)



**Peer Community In**  
Paleontology Free and transparent preprint  
peer-review in paleontology

*Peer Community in* **Ecology**  
(François Massol, Tim Couslon, Dominique Gravel & Cyrille Violle)



**Peer Community In**  
Ecology Free and transparent preprint and postprint  
recommendations in ecology

*Peer Community in* **Animal Science**  
(Rafael Muñoz-Tamayo)

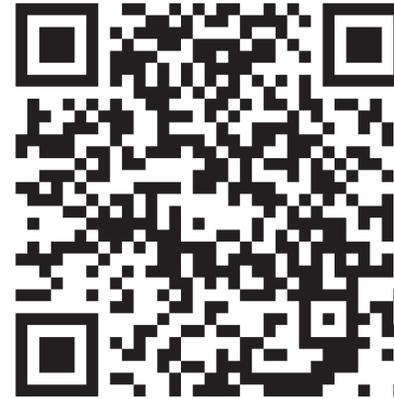


**Peer Community In**  
Animal  
Science Free and transparent preprint and postprint  
recommendations in animal science

*Peer Community in* **Entomology**  
(Denis Bourguet, Benoit Facon & Thomas Guillemaud)



**Peer Community In**  
Entomology



[edit text](#)

SUBMIT A PREPRINT

RECOMMEND A POSTPRINT

SUBMITTED PREPRINTS REQUIRING A RECOMMENDER

## Latest recommendations

2018-02-28



PREPRINT

### Insects and incest: sib-mating tolerance in natural populations of a parasitoid wasp

Marie Collet, Isabelle Amat, Sandrine Sauzet, Alexandra Auguste, Xavier Fauvergue, Laurence Mouton, Emmanuel Desouhant

<https://doi.org/10.1101/169268>

Recommended by [Caroline Nieberding](#) and [Bertanne Visser](#) based on reviews by 2 anonymous reviewers

#### *Incestuous insects in nature despite occasional fitness costs*

Inbreeding, or mating between relatives, generally lowers fitness [1]. Mating between genetically similar individuals can result in higher levels of homozygosity and consequently a higher frequency with which recessive disease alleles may be expressed within a population. Reduced fitness as a consequence of inbreeding, or inbreeding depression, can vary between individuals, sexes, populations and species [2], but remains a pervasive challenge for many organisms with small local population sizes,...

MORE

2018-02-19



PREPRINT

### Genomic imprinting mediates dosage compensation in a young plant XY system

Aline Muyle, Niklaus Zemp, Cecile Fruchard, Radim Cegan, Jan Vrana, Clothilde Deschamps, Raquel Tavares, Franck Picard, Roman Hobza, Alex Widmer, Gabriel Marais

<https://doi.org/10.1101/179044>

Recommended by [Tatiana Giraud](#) and [Judith Mank](#) based on reviews by 3 anonymous reviewers

#### *Dosage compensation by upregulation of maternal X alleles in both males and females in young plant sex chromosomes*

Sex chromosomes evolve as recombination is suppressed between the X and Y chromosomes. The loss of recombination on the sex-limited chromosome (the Y in mammals) leads to degeneration of both gene expression and gene content for many genes [1]. Loss of gene expression or content from the Y chromosome leads to differences in gene dose between males and females for X-linked genes. Because expression levels are often correlated with gene dose [2], these hemizygous genes have a lower expression leve...

MORE

## Tweets by @PCIEvolBiol

 **PeerComInEvoBiol**  
@PCIEvolBiol

the [#preprint](#) of Clemente et al. 2017 BioRxiv, 113274, [doi.org/10.1101/113274](https://doi.org/10.1101/113274), peer reviewed and recommended by [@PCIEvolBiol](#) ==> Accepted in Behavioral Ecology, "IT CERTAINLY IMPROVED THE MANUSCRIPT, HENCE THE CHANCES OF BEING ACCEPTED", the authors said

 **Despite reproducti...**  
This preprint has be...  
[biorxiv.org](https://doi.org/10.1101/113274)

♡ [ ] Mar 8, 2018

 **PeerComInEvoBiol**  
@PCIEvolBiol

Replying to [@PCIEvolBiol](#)

[@GaltierNicolas](#) understood [@PCIEvolBiol](#): « I think the idea is: once you get your PCI reviews+recommendation for free, if you really want to pay \$2000 for being "published" in "famous" journals that do nothing, well, yes you can »

♡ [ ] Mar 6, 2018

 **PeerComInEvoBiol Retweeted**

 **LBE INRA**  
@LBE\_INRA

Le LBE est heureux d'accueillir aujourd'hui Thomas Guillemaud et Denis Bourguet fondateurs du projet Peer Community In [@PCIEvolBiol](#)

# GREENFIELD Michael D



- IRBI (UMR 7261), CNRS, Tours, France
- Behavior & Social Evolution, Evolutionary Ecology, Phenotypic Plasticity, Phylogeography & Biogeography, Quantitative Genetics, Sexual Selection
- **recommender**

B.A. New York University (1973 ; biology, engineering) Ph.D. University of Wisconsin, Madison (1978 ; entomology)

assistant - associate professor ; University of California, Los Angeles (1981-1993) professor ; University of Kansas (1991 - 2007) adjunct professor ; University of Kansas (2007 - present)

professeur / chercheur ; CNRS (IRBI, UMR 7261) , Tours, France (2006 - present)

## 1 recommendation

2016-12-16



Evolutionary robotics simulations help explain why reciprocity is rare in nature.

André J-B, Nolfi S  
[10.1038/srep32785](https://doi.org/10.1038/srep32785)

Recommended by [Michael D Greenfield](#) and [Joël Meunier](#)  
*Simulated robots and the evolution of reciprocity*

Of the various forms of cooperative and altruistic behavior, reciprocity remains the most contentious. Humans certainly exhibit reciprocity – under certain circumstances – and various non-human animals behave in ways suggesting that they do as well. Thus, evolutionary biologists have sought to explain why non-relatives might engage in altruistic transactions when a substantial delay occurs between helping and compensation; i.e. an individual may be a donor today and a beneficiary tomorrow,...

MORE

## 1 review

2017-07-12



*Tetranychus evansi* (in red) and *T. urticae* (in blue) individuals. S. Magalhães

PREPRINT

Despite reproductive interference, the net outcome of reproductive interactions among spider mite species is not necessarily costly

Salomé H. Clemente, Inês Santos, Rita Ponce, Leonor R. Rodrigues, Susana A. M. Varela and Sara Magalhães  
<https://www.biorxiv.org/content/biorxiv/early/2017/09/19/113274.full.pdf>

Recommended by [Vincent Calcagno](#) based on reviews by [Michael D Greenfield](#) and [Joël Meunier](#)  
*The pros and cons of mating with strangers*

Interspecific matings are by definition rare events in nature, but when they occur they can be very important, and not only because they might condition gene flow between species. Even when such matings have no genetic consequence, for instance if they do not yield any fertile hybrid offspring, they can still have an impact on the population dynamics of the species involved [1]. Such atypical pairings between heterospecific partners are usually regarded as detrimental or undesired; as ...

MORE

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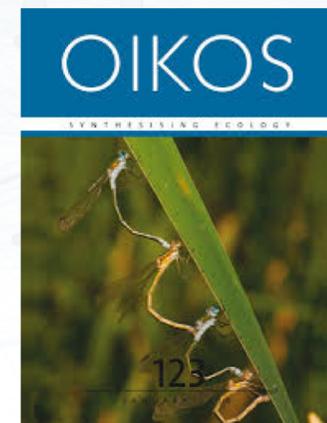
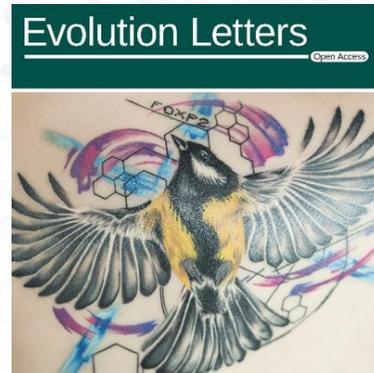
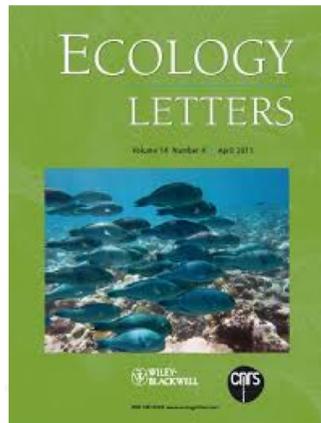
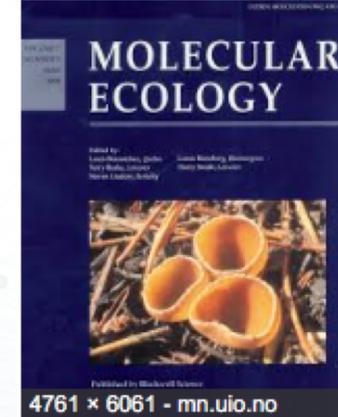
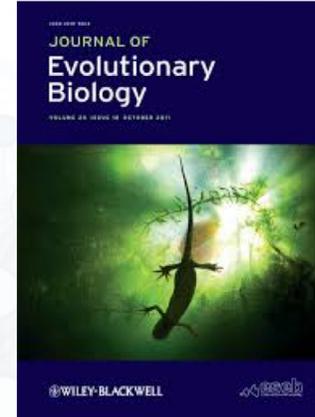
PCI

# PCI and journals

Trends in Ecology & Evolution

Trends in Plant Science

PLOS BIOLOGY



etc.

*We would value the recommendations seriously and may even use them for handling without further peer review (only peer review by handling editors)*

<https://peercommunityin.org>, @PeerCommunityIn

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# PCI Evolutionary Biology

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- Launch of the PCI Evol Biol website in January 2017  
~ 2000 unique visitors /month

- # editors
  - At launch = 162
  - Currently (November 2018) = 400



- 107 submissions of preprints
  - 46 published recommendations of preprints
  - 24 preprints in evaluation
  - 37 not considered, cancelled or rejected
- Median time between submission and first editorial decision = 44 days

# PCI Ecology

# PCI Paleontology



## Peer Community In

Ecology Free and transparent preprint and postprint  
recommendations in ecology

- Launch of the website in January 2018
- 314 recommenders/editors
- 51 preprint submissions
- 18 recommendations



## Peer Community In

Paleontology Free and transparent preprint  
peer-review in paleontology

- Launch of the website in January 2018
- 80 recommenders/editors
- 3 submissions
- 1 recommendation

# Advantages of PCI?

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## For authors

You obtain  $\geq 2$  reviews of your preprint  $\rightarrow$  You improve the quality of your preprint

A text recommending your preprint is signed by the editor and published (like a N&V)

Well known journals consider PCI reviews as they stand and/or to speed up their decisions

## For Editors/recommenders

You choose to pick up or not papers, you edit only interesting papers

You edit few papers each year (maximum = 5)

You sign a news & views like paper that is published (with a DOI, citable)

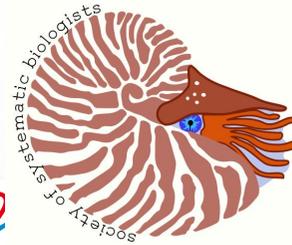
## For reviewers

You get direct credit for reviews: they are published by PCI and deposited in an open archive  
<https://peercommunityin.org>, @PeerCommunityIn



# Institutional Supports

## Scientific Societies



Just submitted a project to  
Max Plank Digital Library

## Institutions



MAX-PLANCK INSTITUTE  
FOR EVOLUTIONARY BIOLOGY



<https://peercommunityin.org>, @PeerCommunityIn



# Supports of evaluation committees

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## **Finland: Recognition of PCI Evol Biol**

## **France: Recognition of PCI and Public Motion of Ecology and evolution committees of**

**-CNRS, sections 29-30-52**

**-Universities, CNU67**

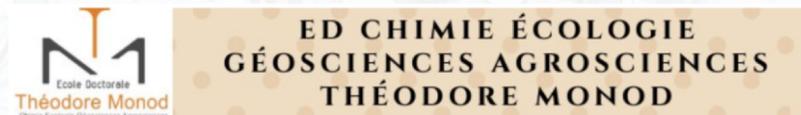
**-Inra, CSS BPE**

**-IRD, CSS3**

« During all its work (evaluations, promotions, competitions...), Section 29 [of the National Committee of the Scientific Research] will consider the articles recommended by PCI Evol Biol, PCI Ecology and PCI Paleo in the same way as an article published in an indexed scientific journal. This measure will be extended to any other variations of PCI that may emerge.' »

# Supports

## Doctoral schools



# Economic model

## • Principles

- PCI led by scientists for scientists, non profit and non-commercial.
- as efficient as possible for the lowest cost possible.
- Work is shared among scientists hired by research organisations.
- No extra salary or bonus for reviewers, editors, administrators of the PCIs and co-founders of the PCI project
- Workload shared as much as possible / Low individual workloads
- Most of the article treatment time = scientific evaluation.

## • Human time

- Promoting the whole Project: 1 full time job until 2020 then 1/2
- Administrating a PCI: 10h-100h / PCI
- Preprint management: 2h/preprint
- No technical edition
- Preprint evaluation: 1-6 days/preprint
- Maintenance of the web sites + addresses: ~ 300h until 2020 then 50h/yr

## • Functioning :

- about 5 K€/year/each PCI for Web hosting, mail addresses, crossref, travels, congress, etc.

## • Total cost of PCI

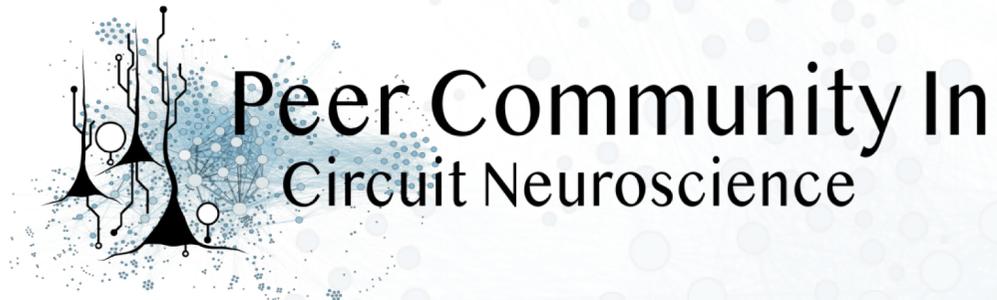
- Today : About 3000 €/ recommended preprint (~ the same as current system)
- Equilibrium: ~150 € / recommended preprint (20 x less than current system)



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# Future of PCI?

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PCI Genomics

PCI Mathematical & Computation Biology

## **Under discussion**

PCI Virology

PCI Ecotoxicology

PCI Registered reports

# How to set up a new PCI?

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- 1 Choose 1 or 2 colleagues
- 2 Define a subject
- 3 Gather a 1st circle of editors
- 4 Send your proposal to PCI
- 5 Set a managing board
- 6 Recruit more editors
- 7 Publicly open the PCI

# New perspectives...

- *blind evaluations*
- Evaluation of pre-registrations



## BEFORE conducting your study...

Submit your preregistration to *PCI Ecology* for peer review

