Peer Community In...

Denis Bourguet
Benoit Facon
Thomas Guillemaud
Marjolaine Hamelin

INRAE

A free recommendation process of preprints based on peer reviews

PCI

We’re facing several problems

Science quality issues

- publication bias toward positive results

Begley, C. G.; Ellis, L. M. (2012). "Drug Development: Raise Standards for Preclinical Cancer Research". Nature.
Baker, M. 1,500 scientists lift the lid on reproducibility. Nature 533, 452–454 (2016). https://doi.org/10.1038/533452a
Open Science Collaboration, Estimating the reproducibility of psychological science. Science 349, aa4716 (2015).

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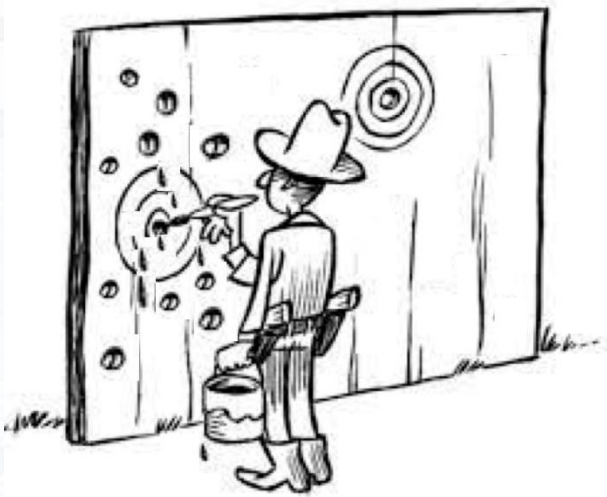
Science quality issues

- publication bias toward positive results
- story-telling – HARKing (Hypothesis stated After Results are Known) – p-hacking



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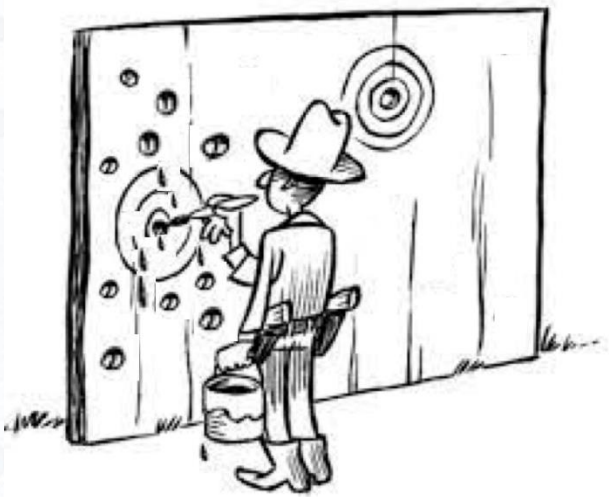
Science quality issues

- publication bias toward positive results
- story-telling – HARKing (Hypothesis stated After Results are Known) – p-hacking
- methods: not clear - not available
- data not available



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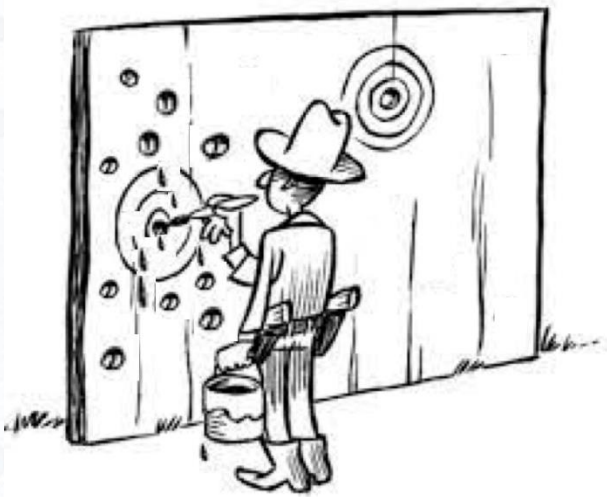

➔ 20-60% studies are non reproducible

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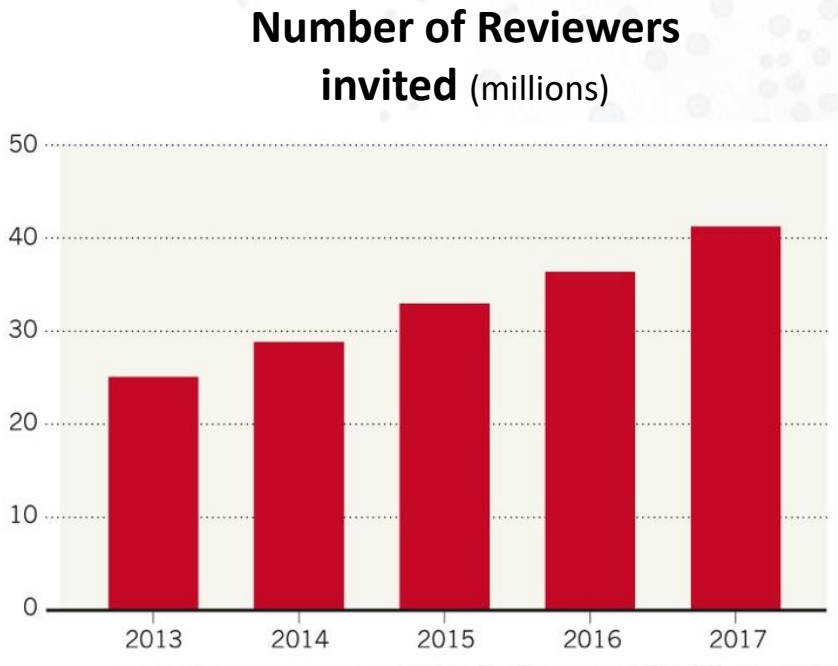
Inefficient & non transparent system

- submissions/rejections in cascade
- > 1-2 years to read a paper
- waste of evaluation
- reviewers availability issue

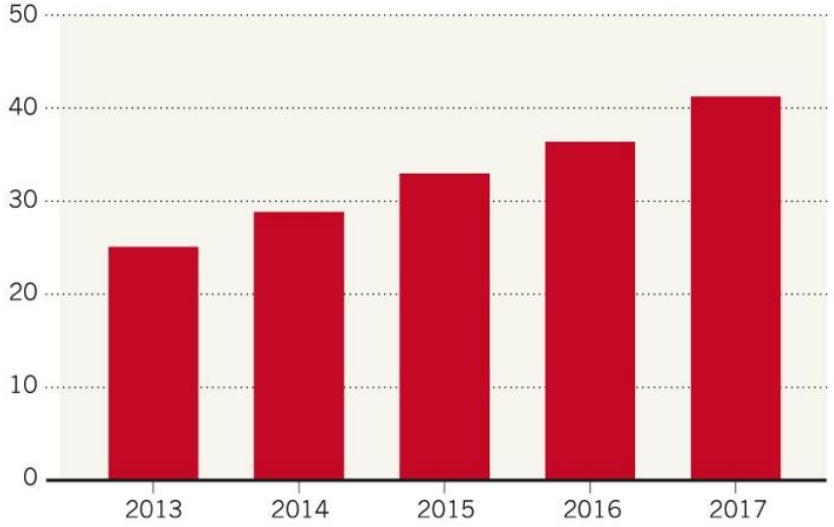
A system at the end of its rope



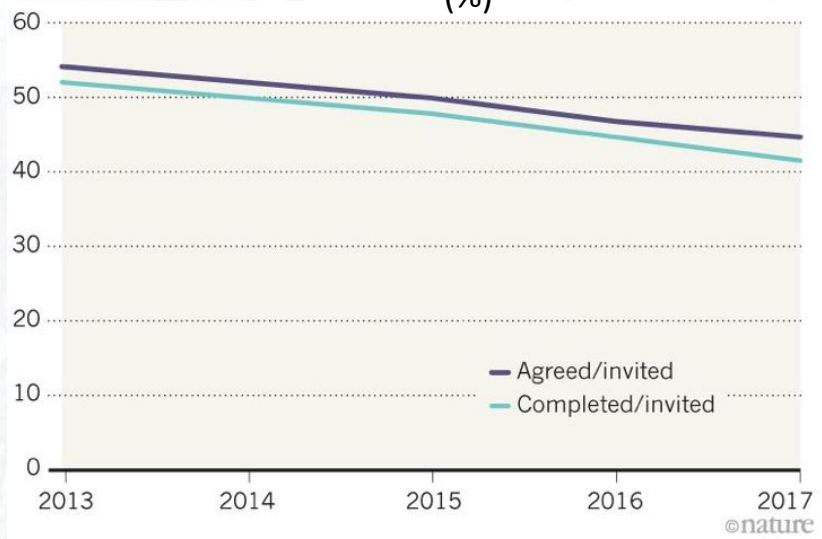
More and more reviewers needed

A system at the end of its rope

Number of Reviewers invited (millions)



Proportion of accepted invitations (%)

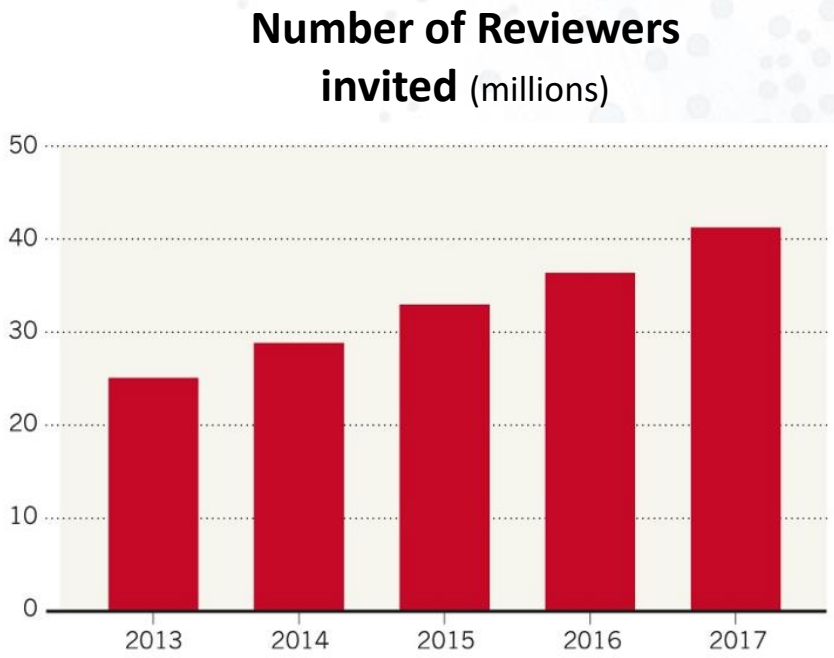


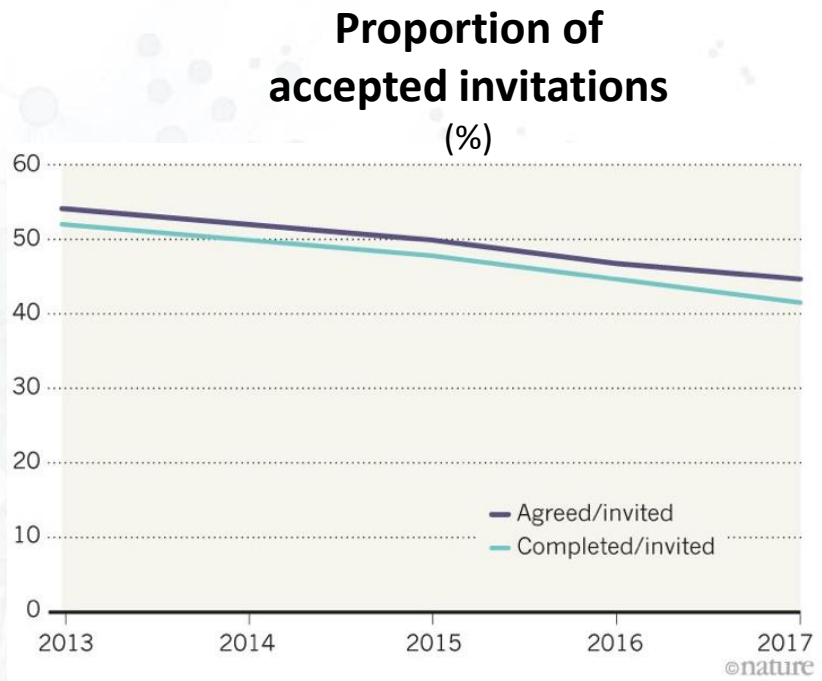
https://www.nature.com/articles/d41586-018-06602-y

More and more reviewers needed

Less and less accepted invitations

A system at the end of its rope





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More and more reviewers needed

Less and less accepted invitations

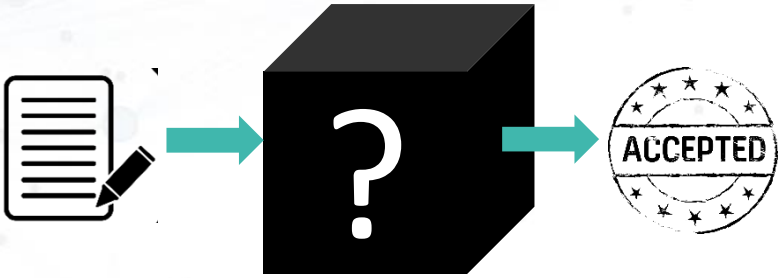
20% of scientists are performing up to 95% of all peer reviews
(10.1371/journal.pone.0166387)

Lack of visibility, lack of recognition

Inefficient & non transparent system

- submissions/rejections in cascade
- > 1-2 years to read a paper
- waste of evaluation
- reviewers availability issue

- invisible Reviews
- invisible Editorial Decisions
- unknown Editor
- unstated Conflicts of Interest



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A closed system

% of publications behind paywalls

Worldwide: **70%** (2019) Piwowar et al 2019. https://doi.org/10.1101/795310

Europe: **64%** (2018) https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/open-science/open-science-monitor/trends-open-access-publications_en

France: **44%** (2019) https://www.enseignementsup-recherche.gouv.fr/fr/barometre-francais-de-la-science-ouverte-47519

Costly system & Fantastic margin profit

France: ~ €150 M/year

Europe: ~ €3 B/year

World: ~ €10 B/ year

for 3 millions articles published /year

➔ cost of ~ €3000 /article

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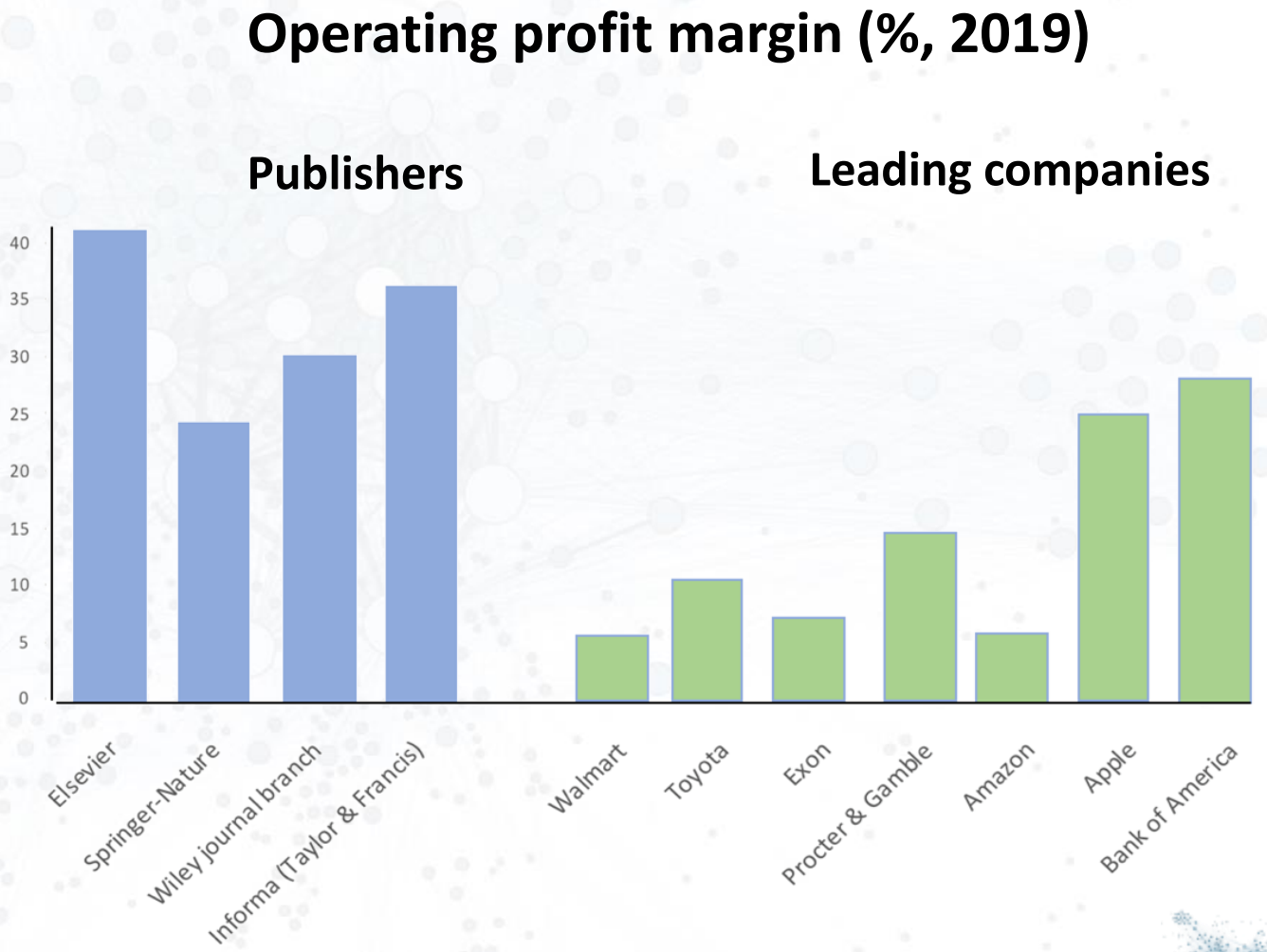
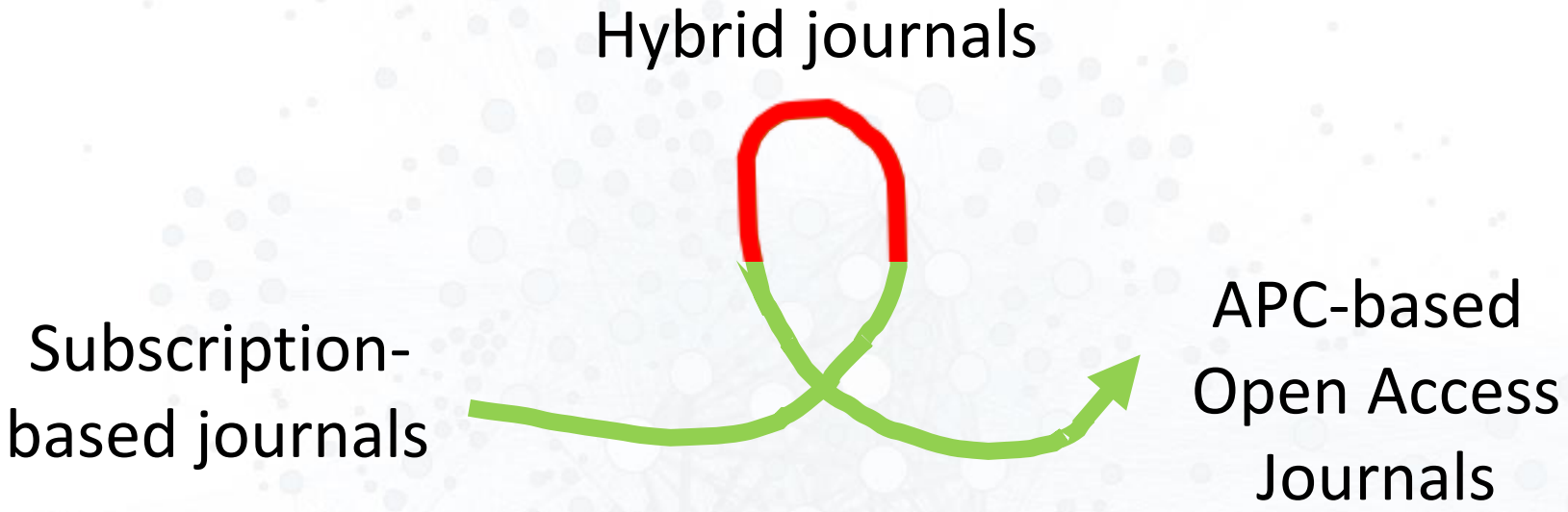


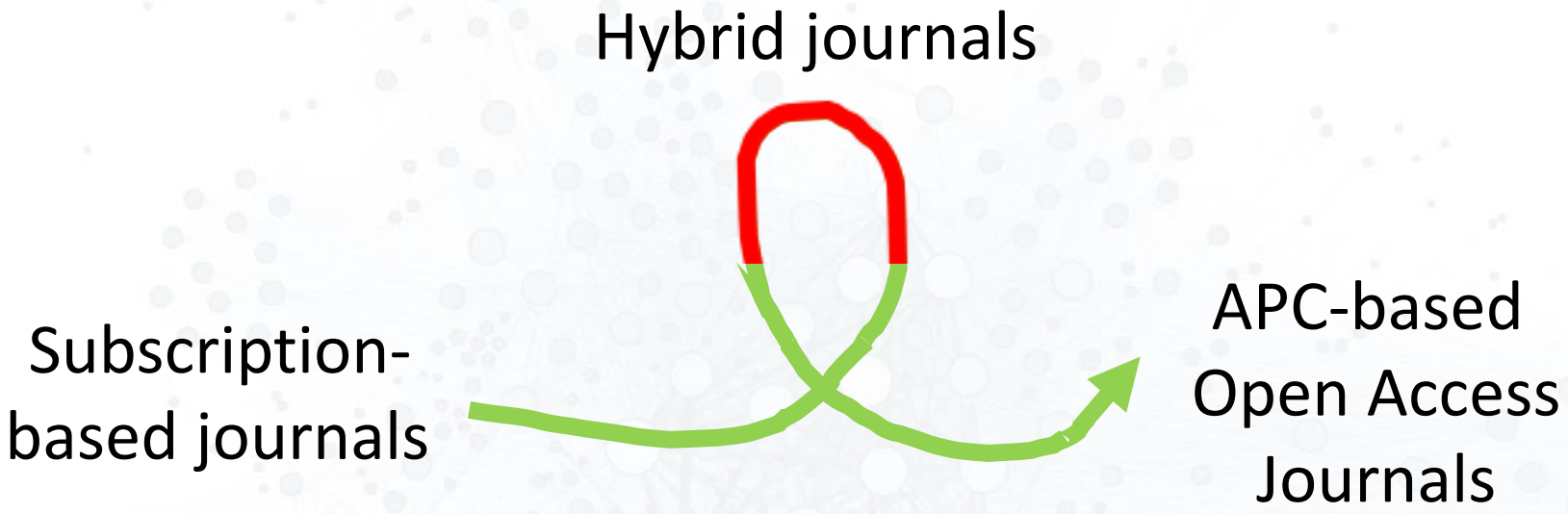
Sources: macrotrends.net, RELX annual report, bloomberg, SPARC, marketscreener.com,

Let’s pay twice …



1- Libraries pay subscriptions
2- Laboratories pay APCs

Let’s pay twice … or even thrice!



1- Libraries pay subscriptions
2- Laboratories pay APCs
3- Researchers are paid by research institutions to write, evaluate, edit, proofread, format articles

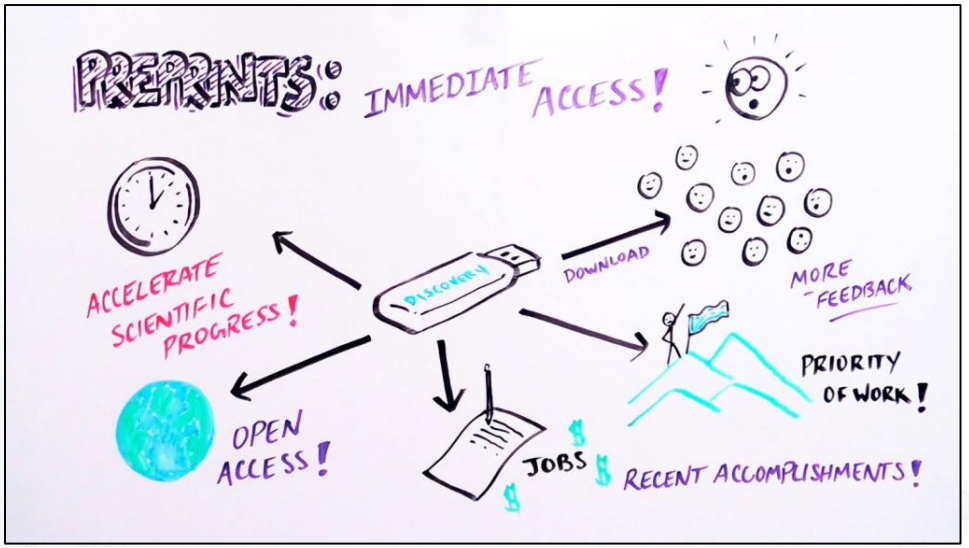
PCI

Re-appropriate the publication system:

Preprints may be part of the solution

Preprints are good...

- Low cost
- 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

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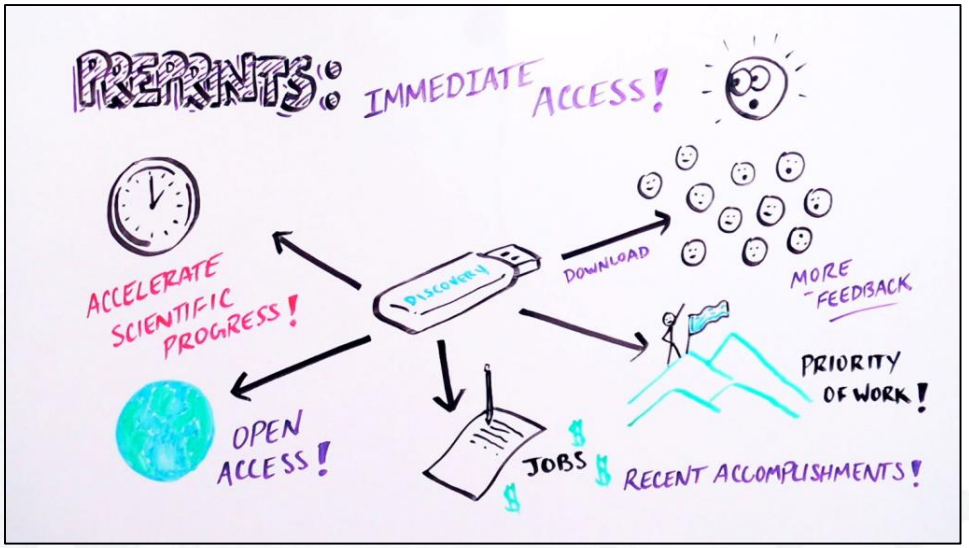

But putative quality problem...

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- Everything can be found in open archives including preprints of very bad quality

We therefore need preprint evaluation

The Peer Community in initiative

The aim of PCI

Communities of researchers handling the **evaluation** of (through peer review) and **recommending preprints** in their scientific field.

bioRxiv

arXiv.org

zenodo

HAL archives-ouvertes.fr

OSF PREPRINTS

etc …

PCI Ecology

PCI Evolutionary Biology

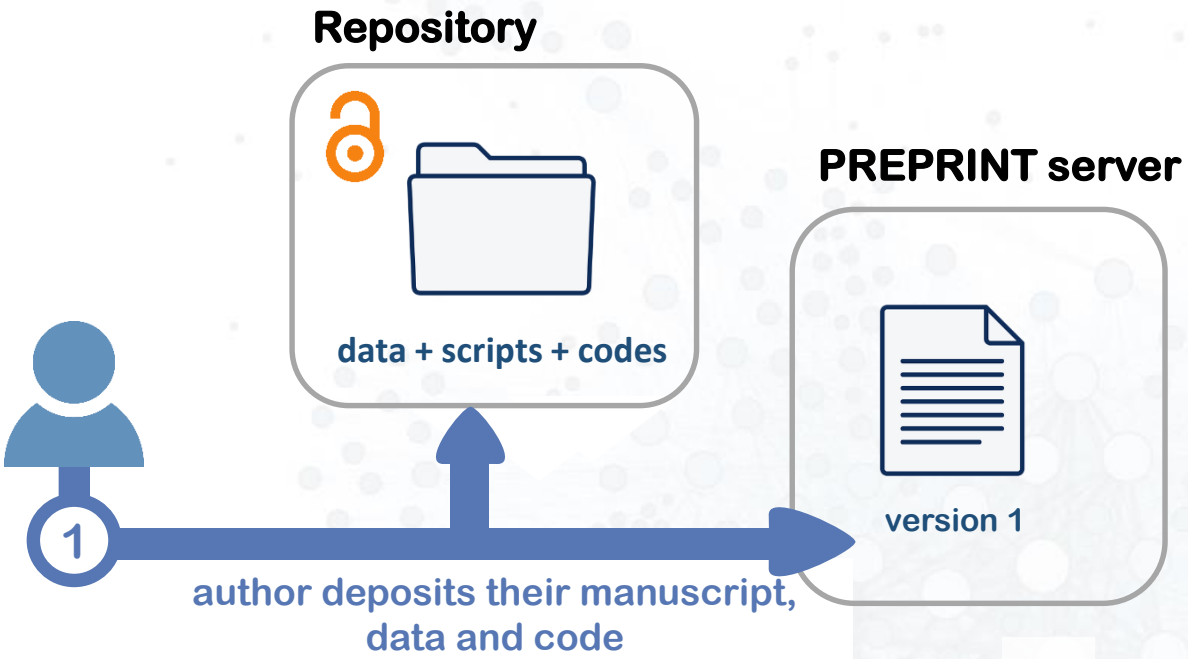
PCI Genomics

PCI Microbiology

etc..

PCI

How does it work?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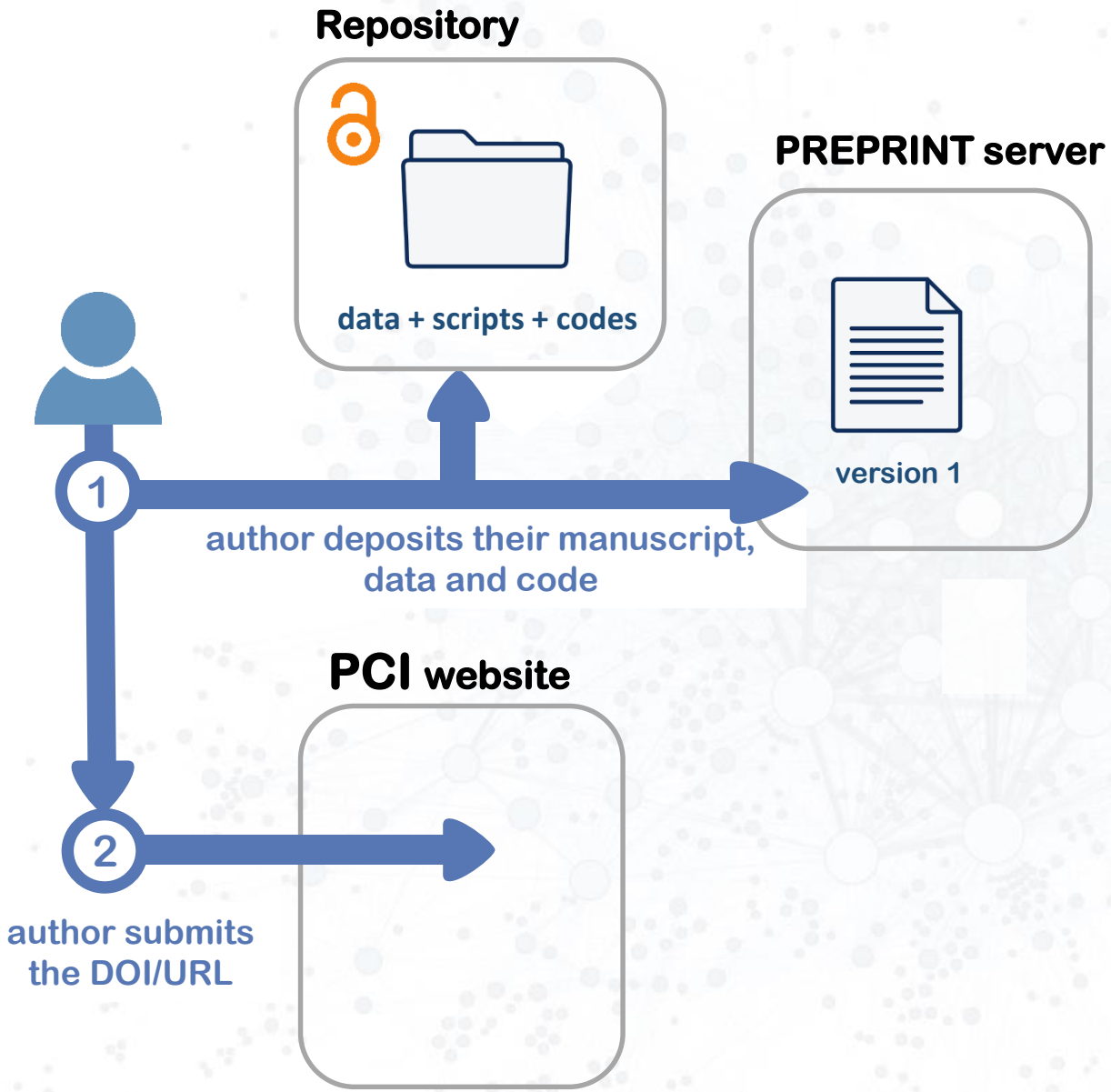
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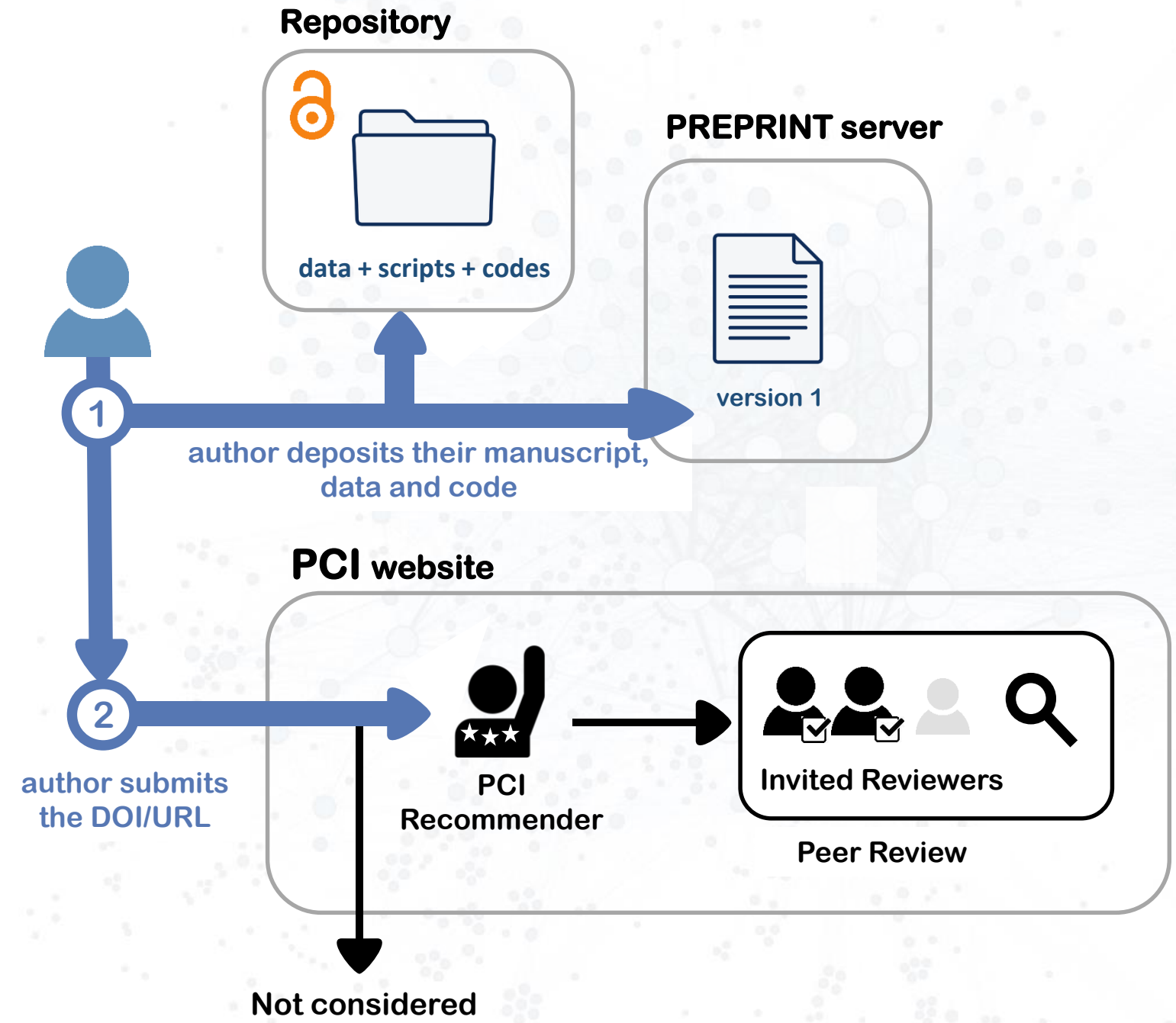
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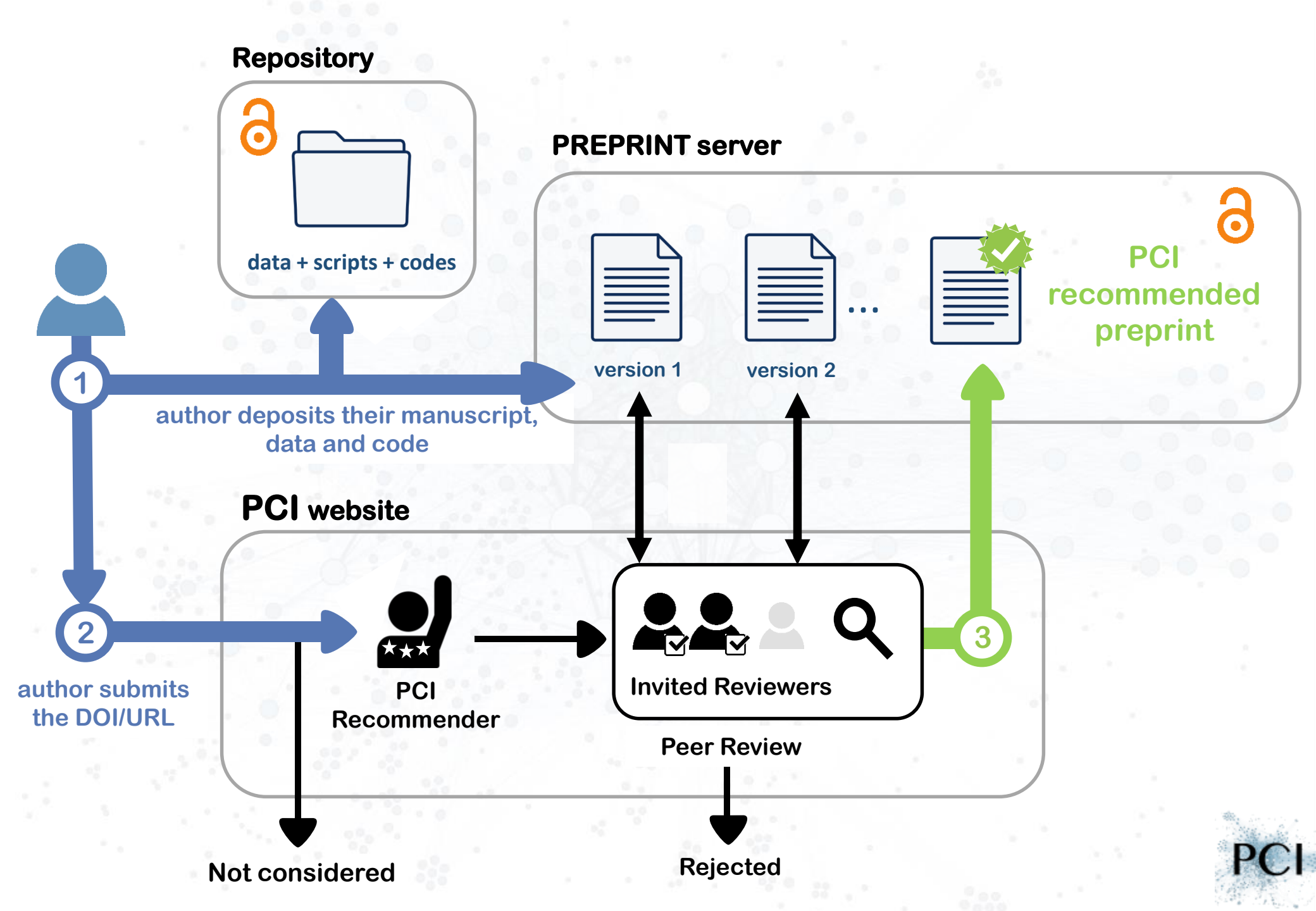
Invited Reviewers
Peer Review
Not considered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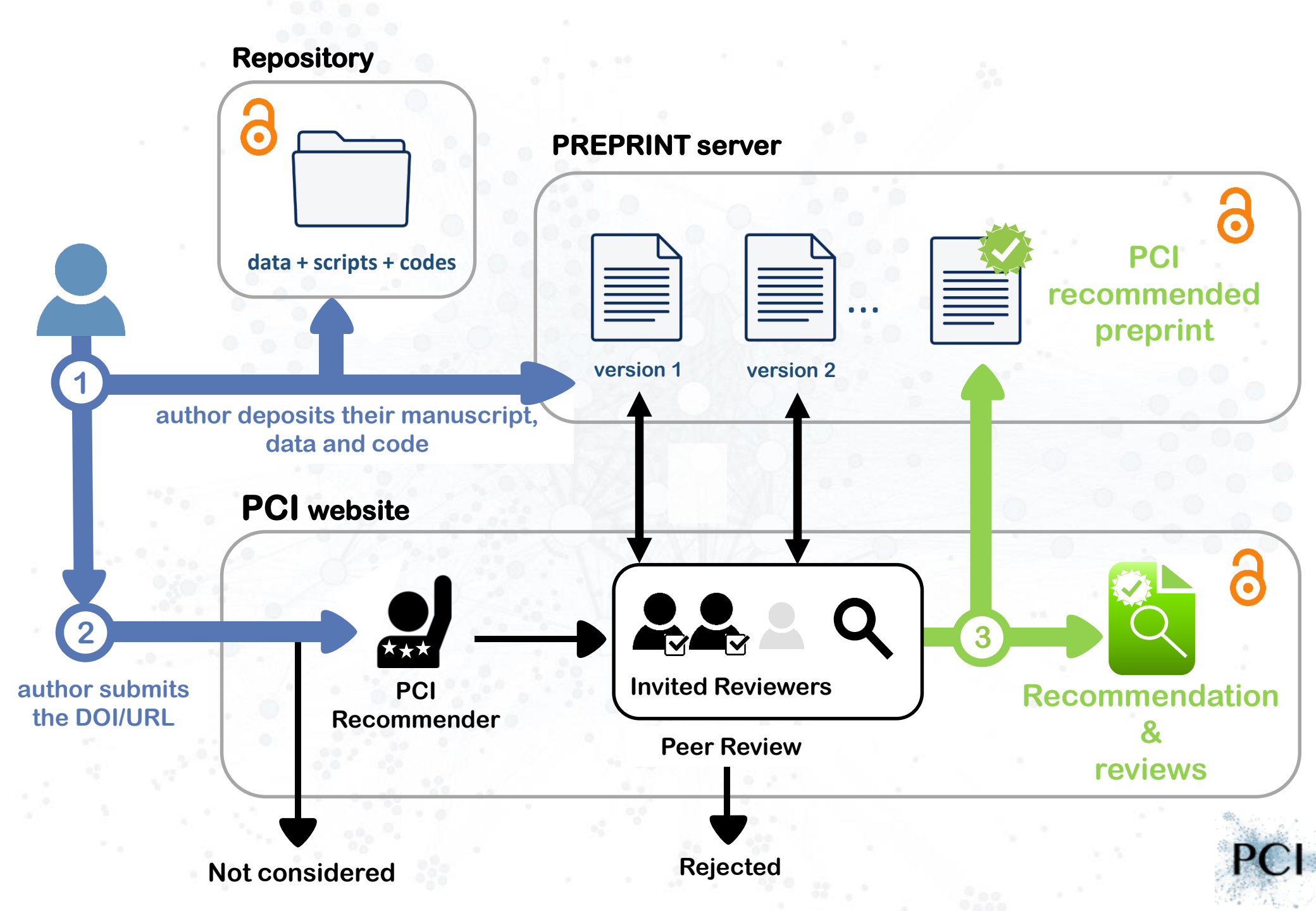
Peer Review
Not considered
Rejected


Repository
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PREPRINT server
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version 2
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PCI recommended preprint
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PCI website
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author submits the DOI/URL
PCI Recommender
Invited Reviewers
Peer Review
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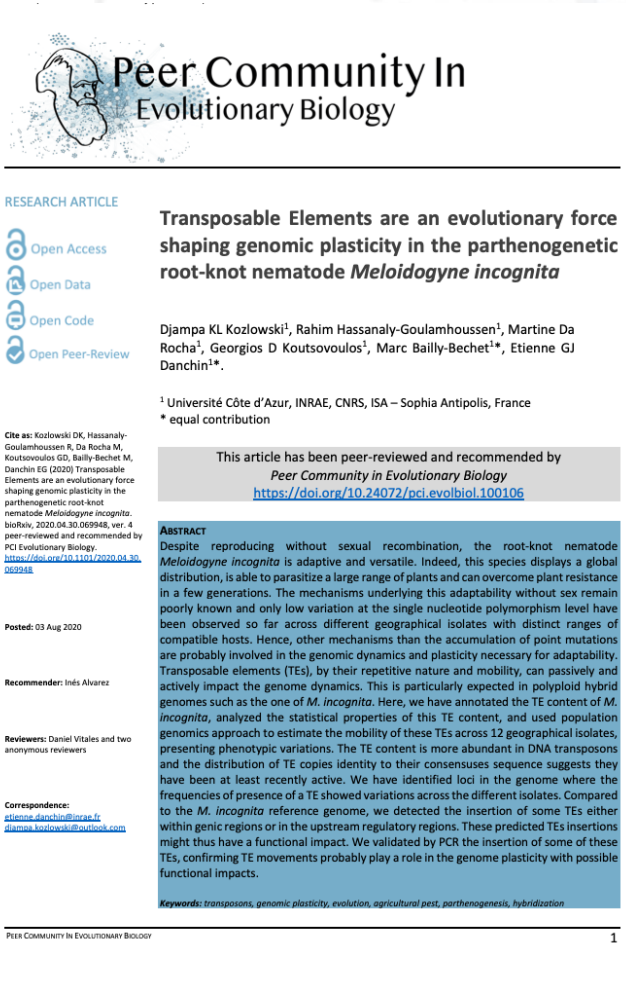
Recommendation & reviews
Not considered
Rejected
PCI

PCI-recommended preprint

Recommendation text



Peer Community In Evolutionary Biology

RESEARCH ARTICLE

Open Access
Open Data
Open Code
Open Peer-Review

Transposable Elements are an evolutionary force shaping genomic plasticity in the parthenogenetic root-knot nematode *Meloidogyne incognita*

Djampa KL Kozlowski[1], Rahim Hassanaly-Goulamhoussen[1], Martine Da Rocha[1], Georgios D Koutsovoulos[1], Marc Bailly-Bechet[1]*, Etienne GJ Danchin[1]*.

[1] Université Côte d'Azur, INRAE, CNRS, ISA – Sophia Antipolis, France
* equal contribution

This article has been peer-reviewed and recommended by *Peer Community in Evolutionary Biology*
https://doi.org/10.24072/pci.evolbiol.100106

ABSTRACT
Despite reproducing without sexual recombination, the root-knot nematode *Meloidogyne incognita* is adaptive and versatile. Indeed, this species displays a global distribution, is able to parasitize a large range of plants and can overcome plant resistance in a few generations. The mechanisms underlying this adaptability without sex remain poorly known and only low variation at the single nucleotide polymorphism level have been observed so far across different geographical isolates with distinct ranges of compatible hosts. Hence, other mechanisms than the accumulation of point mutations are probably involved in the genomic dynamics and plasticity necessary for adaptability. Transposable elements (TEs), by their repetitive nature and mobility, can passively and actively impact the genome dynamics. This is particularly expected in polyploid hybrid genomes such as the one of *M. incognita*. Here, we have annotated the TE content of *M. incognita*, analyzed the statistical properties of this TE content, and used population genomics approach to estimate the mobility of these TEs across 12 geographical isolates, presenting phenotypic variations. The TE content is more abundant in DNA transposons and the distribution of TE copies identity to their consensuses sequence suggests they have been at least recently active. We have identified loci in the genome where the frequencies of presence of a TE showed variations across the different isolates. Compared to the *M. incognita* reference genome, we detected the insertion of some TEs either within genic regions or in the upstream regulatory regions. These predicted TEs insertions might thus have a functional impact. We validated by PCR the insertion of some of these TEs, confirming TE movements probably play a role in the genome plasticity with possible functional impacts.

Keywords: *transposons, genomic plasticity, evolution, agricultural pest, parthenogenesis, hybridization*

Cite as: Kozlowski DK, Hassanaly-Goulamhoussen R, Da Rocha M, Koutsovoulos GD, Bailly-Bechet M, Danchin EG (2020) Transposable Elements are an evolutionary force shaping genomic plasticity in the parthenogenetic root-knot nematode *Meloidogyne incognita*. bioRxiv, 2020.04.30.069948, ver. 4 peer-reviewed and recommended by PCI Evolutionary Biology. https://doi.org/10.1101/2020.04.30.069948

Posted: 03 Aug 2020

Recommender: Inés Alvarez

Reviewers: Daniel Vitales and two anonymous reviewers

Correspondence:
etienne.danchin@inrae.fr
djampa.kozlowski@outlook.com

PCI Evol Biol

Recommendation

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Determinants of population genetic structure in co-occurring freshwater snails

Trine Bilde and Matteo Fumagalli based on reviews by 3 anonymous reviewers

A recommendation of:

Connectivity and selfing drives population genetic structure in a patchy landscape: a comparative approach of four co-occurring freshwater snail species

Jarne P., Lozano del Campo A., Lamy T., Chapuis E., Dubart M., Segard A., Canard E., Pointier J.-P., David P.

(2021), HAL, hal-03295242, ver. 4 peer-reviewed and recommended by Peer Community in Evolutionary Biology
https://hal.archives-ouvertes.fr/hal-03295242

Abstract

Submitted: 11 February 2021, Recommended: 01 September 2021

Recommendation

Genetic diversity is a key aspect of biodiversity and has important implications for evolutionary potential and thereby the persistence of species. Improving our understanding of the factors that drive genetic structure within and between populations is, therefore, a long-standing goal in evolutionary biology. However, this is a major challenge,

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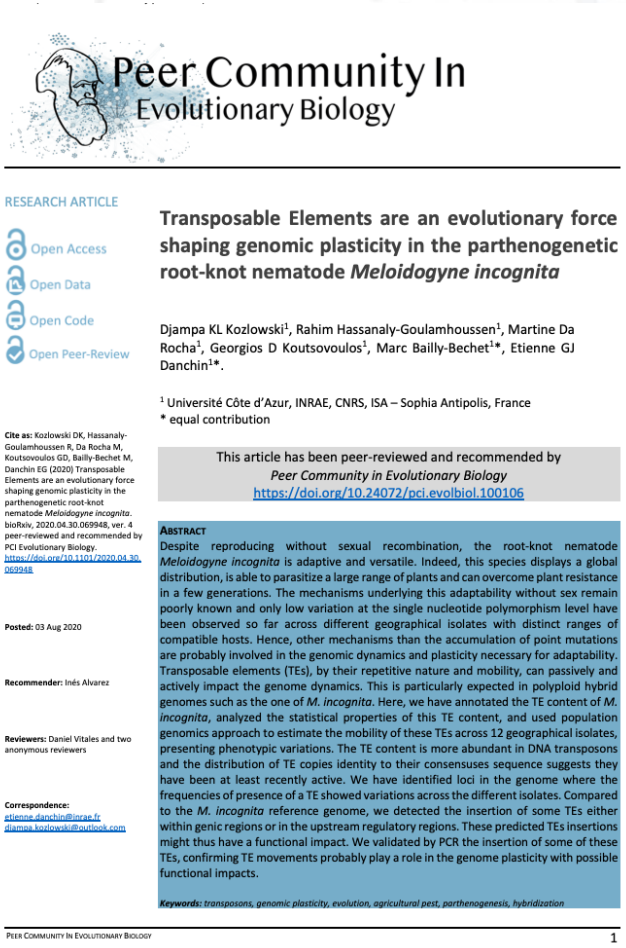
Open Peer-Review
Open Data
Open Code

PCI

PCI-recommended preprint

Recommendation text



Peer Community In Evolutionary Biology

RESEARCH ARTICLE

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Open Peer-Review
Open Data
Open Code

Final, valid, findable and citable article

PCI

Fate of PCI-recommended preprints

PCI-recommended preprint

Peer Community Journal

Direct publication in diamond open access

OR

PCI-friendly journals

OR

Other journals

PCI

PCI-friendly journals

3 categories

1. Accept without further reviews

- Peer Community Journal
- Frontiers of Biogeography
- Rethinking Ecology
- Acarologia
- Belgium J of Zool
- J Lithic Studies
- OCL
- Theoretical Roman Archaeology Journal

PCI RR

- Addiction Research & Theory
- Advances in Cognitive Psychology
- BMJ Open Science
- Brain and Neuroscience Advances
- Cambridge Educational Research e-Journal
- Cortex
- Experimental Psychology
- F1000Research
- Infant and Child Development
- Journal for Reproducibility in Neuroscience
- Journal of Cognition
- Meta-Psychology
- NeuroImage: Reports
- Peer Community Journal
- PeerJ
- PeerJ Computer Science
- PeerJ Physical Chemistry
- PeerJ Organic Chemistry
- PeerJ Inorganic Chemistry
- PeerJ Analytical Chemistry
- PeerJ Materials Science
- Royal Society Open Science
- Swiss Psychology Open

PCI-friendly journals

3 categories

1. Accept without further reviews

2. Fast response (≤ 5 days) to presubmission enquiry

- Accept without further reviews
  OR
- Need further reviews
  OR
- Not interested

- Ecology Letters
- PLOS Biology
- Evolution
- OIKOS
- Journal of Evolutionary Biology
- Evolution Letters
- Journal of Biogeography
- GigaByte
- GigaScience
- Ecology and Evolution
- Animal Welfare
- Annals of Forest Science
- Bulletin of the History of Archaeology
- Bulletins et Mémoires de la Société d'Anthropologie de Paris (BMSAP)
- Collabra: Psychology
- European zoological journal
- Evolutionary Applications
- Evolutionary Ecology
- Heritage
- Journal of Applied Entomology
- Journal of Avian Biology
- Journal of Computer Applications in Archaeology
- Journal of Neolithic Archaeology
- Journal of Open Archaeology Data
- Journal of the Israel Prehistoric Society
- Molecular Ecology
- Veterinary Research

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PCI-friendly journals

3 categories

1. Accept without further reviews

2. Fast response (≤ 5 days) to presubmission enquiry

   - Accept without further reviews
   - OR
   - Need further reviews
   - OR
   - Not interested

3. May use the evaluations of PCI if adequate

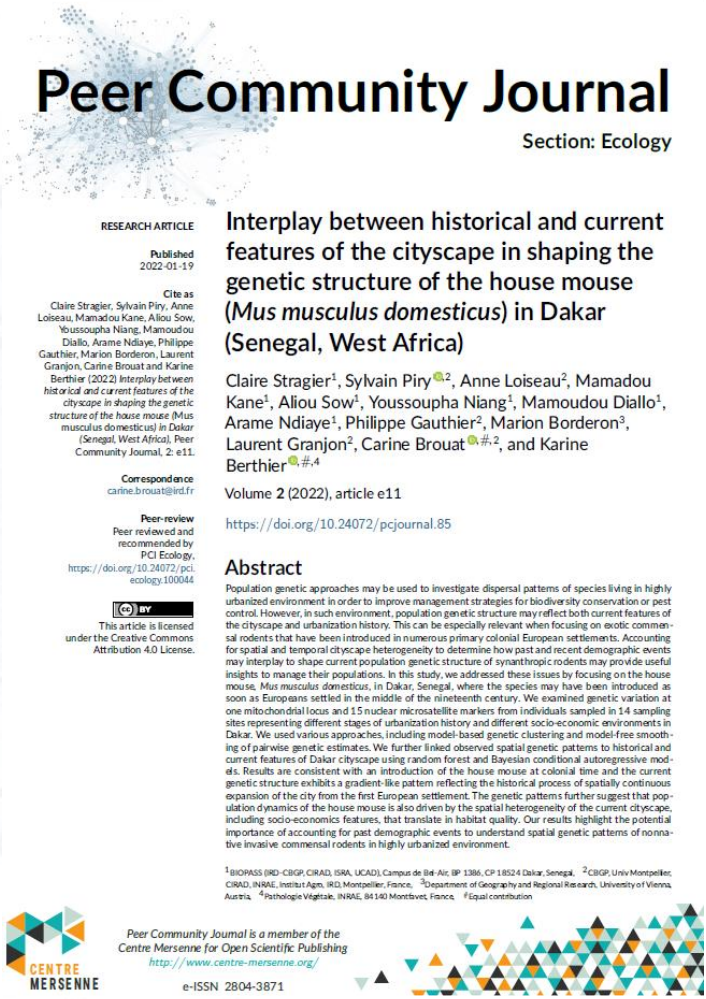
- Adansonia
- Agronomy for Sustainable Development
- Anthropozoologica
- Archäologische Informationen
- Comptes Rendus Palevol
- Cryptogamie, Algologie
- Cryptogamie, Bryologie
- Cryptogamie, Mycologie
- eLife
- European Journal of Taxonomy
- EXARC Journal
- G3: Genes, Genomes, Genetics
- Genetics
- Geodiversitas
- Global Ecology and Biogeography
- Internet Archaeology
- Journal of Pollination Ecology
- Naturae
- Neuroanatomy and Behaviour
- Zoosystema
- Animal
- Animal microbiome
- Anthropologica et Praehistorica
- Arqueologia
- BMC Ecology and Evolution
- Botany Letters
- Genetica
- Integrative Organismal Biology
- Molecular Ecology Resources
- Nordic Journal of Botany
- Open Quaternary
- PLOS One
- Quaternary
- Trends in Plant Science

PCI

Peer Community Journal

https://peercommunityjournal.org/

e-ISSN 2804-3871



- Launched in November 2021
- Accepts **as is any and only** recommended articles
- **Free for readers and authors**
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- **14 sections**
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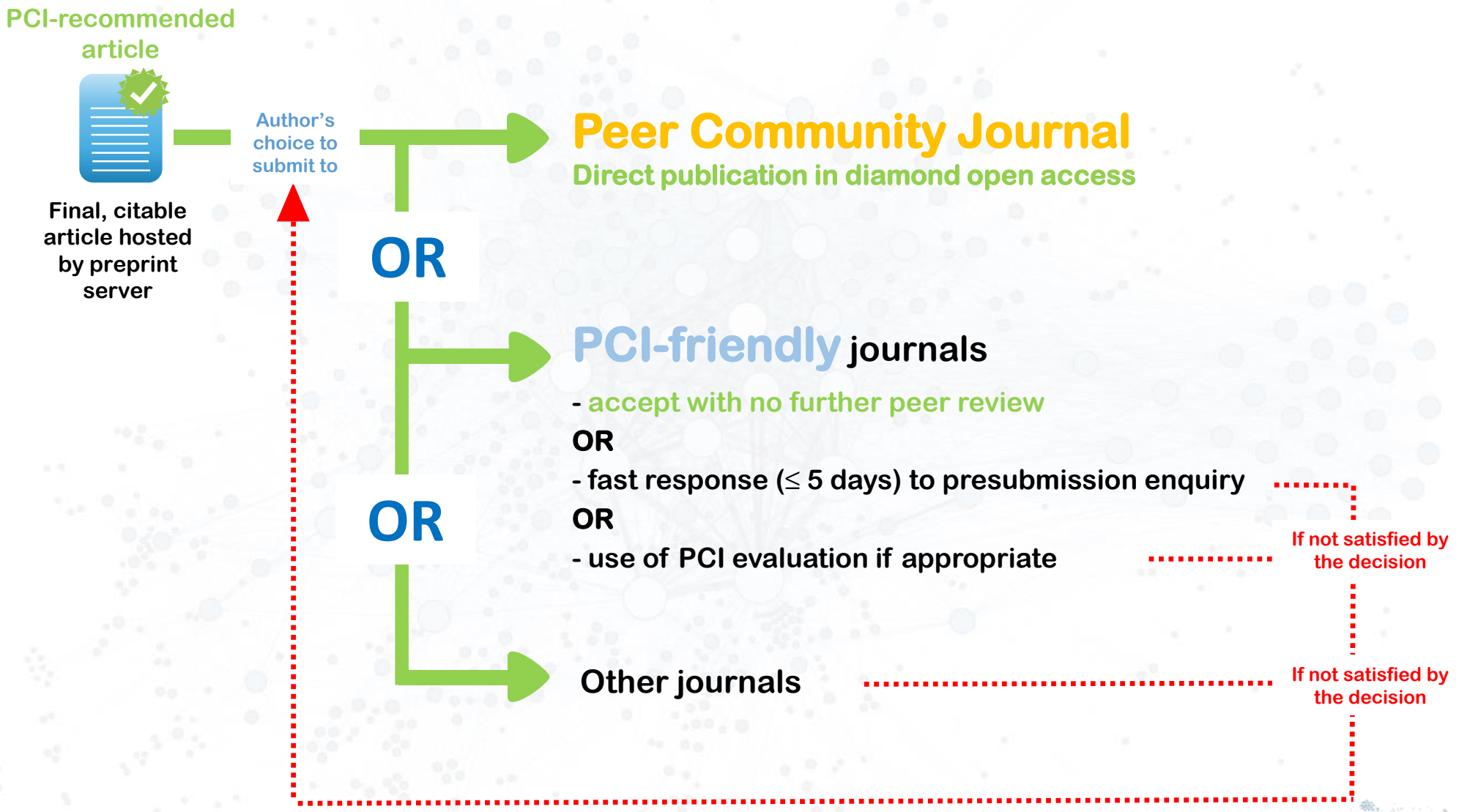
CAB ABSTRACTS

PCI

In summary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- fast response (≤ 5 days) to presubmission enquiry
OR
- use of PCI evaluation if appropriate
OR
Other journals
If not satisfied by the decision
If not satisfied by the decision

Authors of PCI-recommended preprints

- **... can know** within a few days **if one or more PCI-friendly journals**
  - are interested
  - will request or not further peer-review

- **... get 100% chance to publish rapidly** in an indexed and free open access journal (Peer Community Journal)

Consequences

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- A mean to break the publishers' business (diamond OA)

PCI in figures
&
Current PCIs

PCI in figures

15 PEER COMMUNITIES

556 SUBMITTED ARTICLES

301 RECOMMENDED ARTICLES

54 MEDIAN TIME TO 1ST DECISION (DAYS)

3210 TWITTER FOLLOWERS

>5600 REGISTERED USERS

>1600 RECOMMENDERS

120 MANAGING BOARD MEMBERS

997 REVIEWERS

90 FRIENDLY JOURNALS

>12000 VISITORS TO PCI WEBSITES

105 SUPPORTING ORGANISATIONS

Current PCIs

2017
PCI Evolutionary Biology

2018
PCI Ecology
PCI Paleontology

2019
PCI Animal -Science
PCI Zoology

2020
PCI Mathematical and Computational Biology
PCI Forest and Wood Science
PCI Network Science
PCI Genomics
PCI Archaeology
PCI Circuit Neuroscience

2021
PCI Registered Reports
PCI Ecotoxicology and Environmental Chemistry
PCI Infections

2021
PCI Microbiology

Four key factors leading to low reproducibility

low power

Harking

publication bias

p-hacking

(D. Bishop, oxford)

➔ Peer Community In Registered Reports

Peer Community In

Registered Reports

Free and transparent pre- and post-study recommendations across research fields

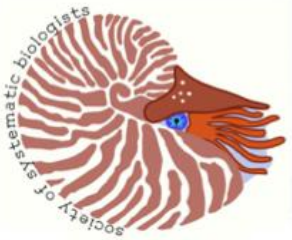
PCI

Supports awards and recognition

Authors

- 96% of authors think using PCI improved their article
- 37% of authors considered PCI as the publication endpoint (no submission to a journal)
- 1/3 of submitted papers after recommendation were accepted as is

Scientific societies



aeet
ASOCIACIÓN
ESPAÑOLA DE
ECOLOGIA
TERRESTRE

PCI

Institutions and universities

Libraries and other supporters

PCI

Grants, awards and projects

PCI is one of the winners of the first call for projects of the French National Open Science Fund (2020)

Pilote project « Notify » with COAR, Harvard Library, Los Alamos Lab, HAL, etc...

2020 LIBER Award for Library Innovation

COAR
Confederation of Open Access Repositories

PCI

How to participate?

Sign and share the #PCIManifesto

https://peercommunityin.org/pci-manifesto/

1. I agree to submit at least one of my best articles to a PCI for peer review before the end of 2023 and, if recommended, to publish it in Peer Community Journal.

2. "I will be bound by this promise only if at least 500 other researchers make the same commitment."

796 colleagues have signed so far

PCI

peercommunityin.org

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- **More generally participate in real open science (Diamond OA, society/university journals, ...)**

PCI

Thanks!

@PeerCommunityIn

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621 colleagues have signed so far

Recognition by evaluation committees

Finland: recognition of PCI Evol Biol

Julkaisufoorumi

France:

Sections 29, 30 and 52 of the National Committee for Scientific Research

CNU Conseil National des Universités

Section 67 of the Conseil National des Universités

évaluation et qualité Hcéres

INRAE

CSS BPE of the French National Institute for Agricultural Research

IRD Institut de Recherche pour le Développement FRANCE

CSS3 of the French National Research Institute for Development

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

PCI

Recognition by Doctoral Schools

Doctoral Programme in Biodiversity, Genetics and Evolution (BIODIV) – Univ. Porto & Univ Lisbon, Portugal

Programa de Doctorado en Biología Integrada – Univ. de Sevilla, Spain

ED Sciences de la Vie et de la Santé – Univ. Nice, France
ED SEVAB – Univ. Toulouse, France
ED Science de l'Environnement – Univ Aix Marseille, France
ED Gaïa – Univ Montpellier, France
ED Sciences, Technologies et Santé – Univ. La Réunion, France
ED Écologie, Géosciences, Agronomie, ALimentation – Univ. Rennes, France
ED Energie et Environnement – Univ. Perpignan, France
ED Sciences de la Mer et du Littoral – Univ. Brest, Nantes, , France
ED Theodore Monod – Univ Poitiers, France
ED ABIES – Univ. Saclay, France
ED Environnements-Santé – Univ. Bourgogne Franche-Comté, France
ED E2M2 – Univ Lyon, France
ED Sciences de la Nature et de l'Homme : écologie & évolution – MNHN, France
ED Sciences du végétal : du gène à l'écosystème – Univ. Orsay, France
ED SMRE – Univ. Lille, France
ED Structure et Dynamique des Systèmes Vivants – Univ. Saclay, France
ED Sciences et Environnement – Univ. Bordeaux, France

ED Sciences Exactes et Applications – Univ. Pau et Pays de l'Adour, France

ED SVSAE – Univ. Clermont Auvergne, France