Cycle of scientific publication : an overview

Paola Galimberti, University of Milan

Violaine Jacq, Sorbonne University Library

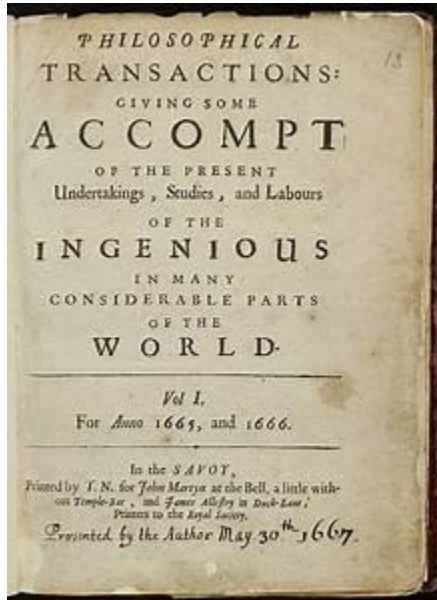# Open science (what we have learnt)

Why scientific publishing?

The aim of the new publication was to create a **public record** of **original contributions to knowledge**

Refereed Articles and Book Chapters

2009 Model-driven Architecture of a Maritime Surveillance System Simulator (**Martin Monperrus**, Benoit Long, Joel Champeau, Brigitte Hoeltzener, Gabriel Marchalot, Jean-Marc Jézéquel), *In Systems Engineering Journal, John Wiley and Sons*, volume 13, 2009.

2008 Measuring Models (**Martin Monperrus**, Jean-Marc Jézéquel, Joël Champeau, Brigitte Hoeltzener), *Chapter in Model-Driven Software Development: Integrating Quality Assurance, IDEA Group (Jörg Rech, Christian Bunse, eds.)*, 2008.

2006 Non-Local Estimation of Manifold Structure (Yoshua Bengio, **Martin Monperrus**, Hugo Larochelle), *In Neural Computation*, volume 18, 2006. (impact factor: 2.335)

Refereed Conference Papers

2008 A Model-driven Measurement Approach (**Martin Monperrus**, Jean-Marc Jézéquel, Joël Champeau, Brigitte Hoeltzener), *In Proceedings of the ACM/IEEE 11th International Conference on Model Driven Engineering Languages and Systems (MODELS'2008)*, 2008. (acceptance rate: 58/274)

2008 Model-driven Simulation of a Maritime Surveillance System (**Martin Monperrus**, Fabre Jaczafy, Gabriel Marchalot, Joël Champeau, Brigitte Hoeltzener, Jean-Marc Jézéquel), *In Proceedings of the 4th European Conference on Model Driven Architecture Foundations and Applications (ECMDA'2008)*, 2008. (acceptance rate: 27/82)

2008 Model-driven Engineering Metrics for Real Time Systems (**Martin Monperrus**, Jean-Marc Jézéquel, Joël Champeau, Brigitte Hoeltzener), *In Proceedings of the 4th European Congress on Embedded Real Time Software (ERTS'2008)*, 2008.

2004 Non-Local Manifold Tangent Learning (Yoshua Bengio, **Martin Monperrus**), *In Advances in Neural Information Processing Systems (NIPS'2004), MIT Press (Lawrence K. Saul, Yair Weiss, Léon Bottou, eds.)*, volume 17, 2004. (acceptance rate: 207/822)

Refereed Workshop Papers

2009 A Definition of "Abstraction Level" for Metamodels (**Martin Monperrus**, Joël Champeau, Antoine Beugnard), *In Proceedings of the 7th IEEE Workshop on Model-Based Development for Computer Based Systems (MBD'2009) co-located with ECBS'2009*, 2009.

2009 Untangling Crosscutting Concerns in Domain-specific Languages with Domain-specific Join Points (Tom Dinkelaker, **Martin Monperrus**, Mira Mezini), *In Proceedings of the 4th Domain-Specific Aspect Languages Workshop (DSAL'2009) co-located with AOSD'2009*, 2009.

2007 Counts Count (**Martin Monperrus**, Joël Champeau, Brigitte Hoeltzener), *In Proceedings of the 2nd Workshop on Model Size Metrics (MSM'07) co-located with MODELS'2007*, 2007.

Other Publications

2008 La mesure des modèles par les modèles : une approche générative (**Martin Monperrus**), *PhD thesis, Université de Rennes*, 2008. (Advisor: JM. Jézéquel; Examiners: H. Sahraoui, S. Ducasse)

Today a scientific publication has become **a line in a cv**

Scientific publications represent the possibility for career advancement, funding ecc.
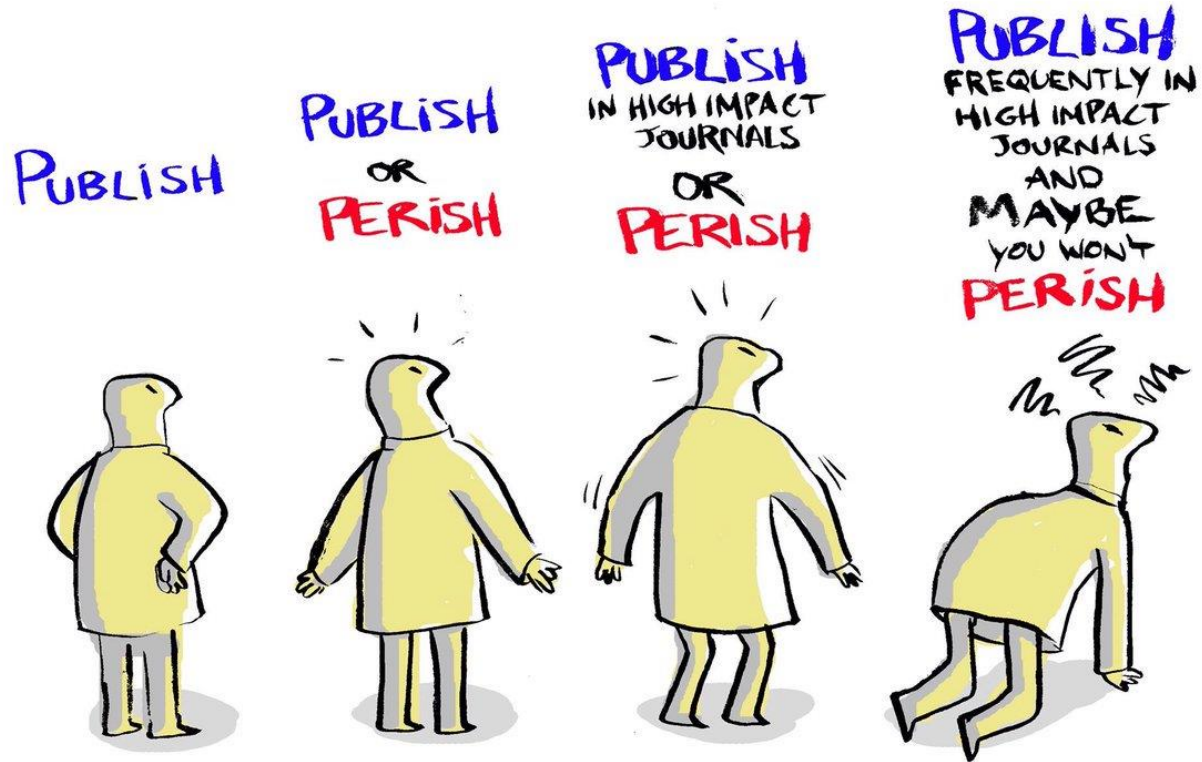
Divergent interests

Researchers want to publish as much as possible and want to be read and commented. They need aknowledgement

Publishers want to maximize their revenue streams

The publication process
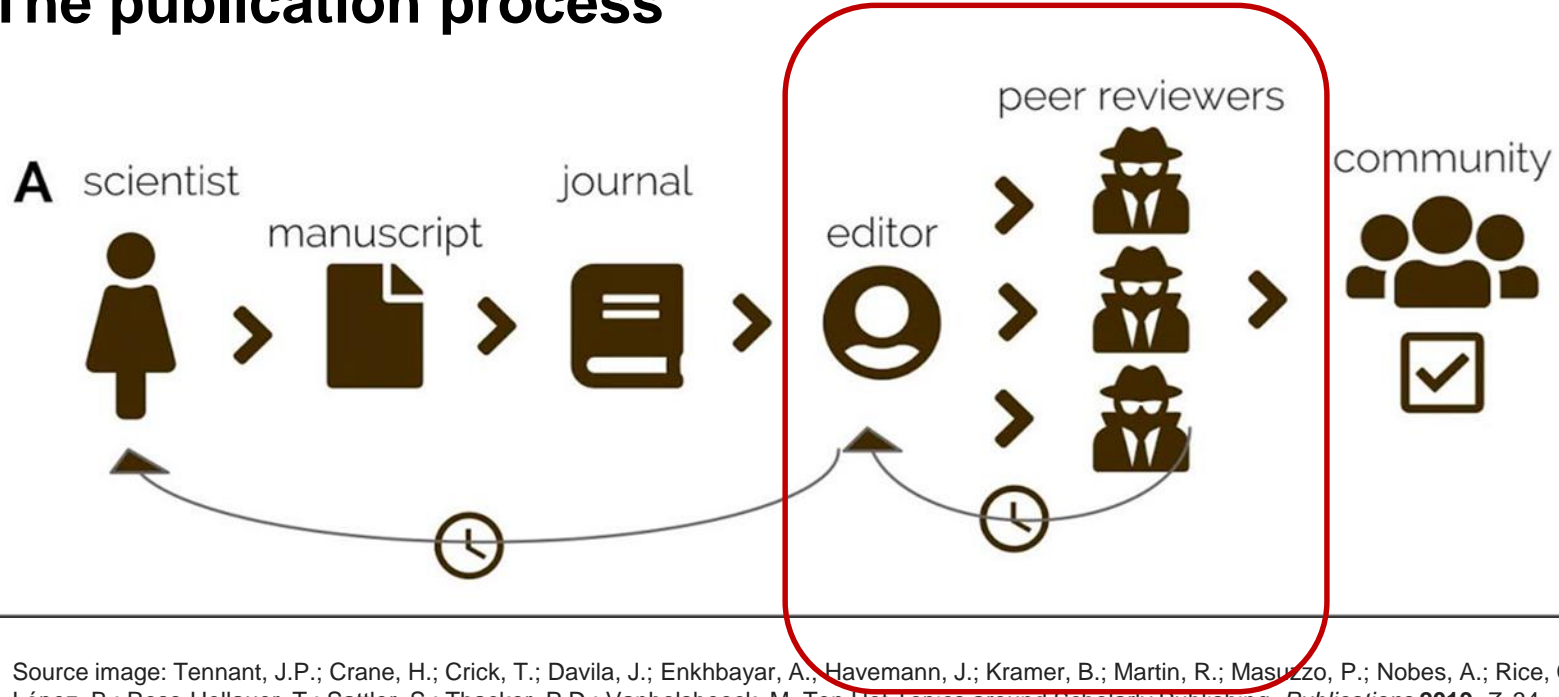
peer reviewers

A scientist

manuscript

journal

editor

community
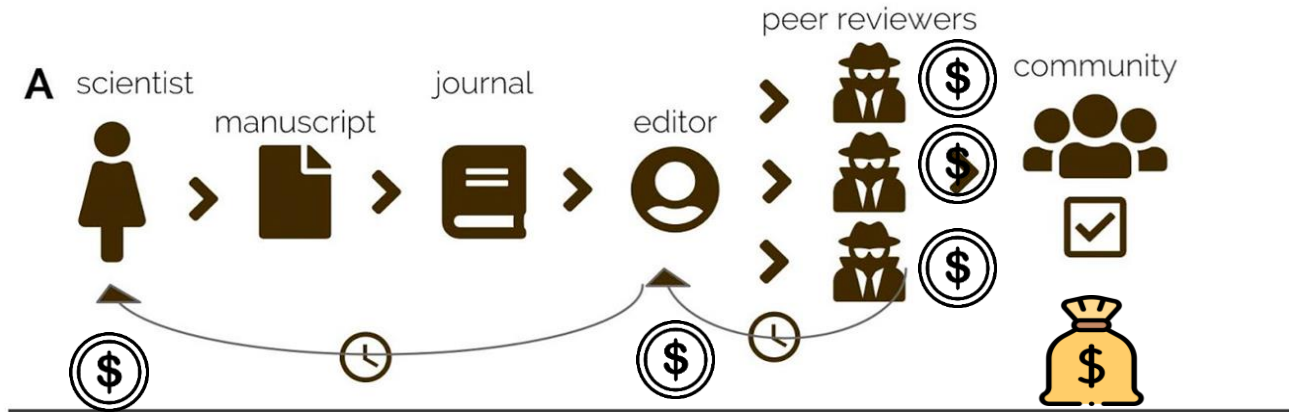
After paying researchers, reviewers, and editors through their salaries, public funding also pays for the results of their work.
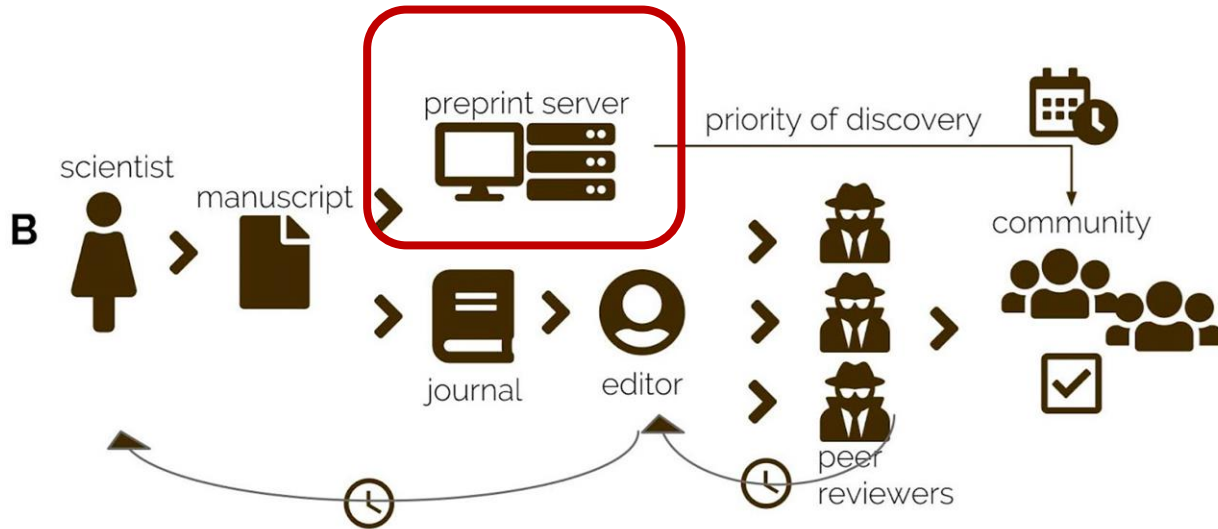
Publication in a preprint repository is NOT in contrast to publication in a peer reviewed journal. The article begins to circulate and collect comments (positive and negative) before publication while still assuring the author priority over the discovery. It facilitates public discussion

Types of journal articles

Article — It includes full Introduction, Methods, Results, and Discussion sections.

Letter — Brief reports of data from original research that editors believe will be interesting to many researchers, and that will likely stimulate further research in the field

Review — A comprehensive summary of research on a certain topic, and a perspective on the state of the field and where it is heading.

Case study — In-depth and extended example that is use to illustrate a particular argument.

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Structure of an academic paper in the STM

Research article ➡

- Proceedings paper
- Short article / Letters
- Theoretical papers
- Opinions
- Review
- Data paper
- Etc.

Introduction
- Context
- Hypotheses
- Experimental plan

Material and Methods
- Description of materials and protocols used in the study
- Referencing products

Results
- Description of scientific results
- « formal » deductions

Discussion
- Data recontextualization in the litterature
- Re-assesment of hypotheses
- New hypotheses
- Perspectives

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Structure of an academic paper in the HSS

Research article →

- Proceedings paper
- Short article / Letters
- Theoretical papers
- Opinions
- Review
- Data paper
- Etc.

Introduction

- Topic
- Reserach questions
- Objectives

State of the Art / Review of the literature

Empirical study

- Who, Where, What, How
- Materials and procedures
- Data analysis

Discussion and Conclusion

Authors guidelines?
Each journal has its rules

Common ground =
requirement of the scientific
community

▪ Conventions and languages

▪ Ethical and legal statements

▪ Images and data processing
(transparancy and
accessibility)

▪ References

Editor's requirements

▪ Must fit into pre-made
categories

▪ Must follow particular formats

Stakeholders of academic publishing

Scientists and the scientific community

Objectives:

Production and diffusion of knowledge and accrediation

Requirements:

Scientific rigour
Accessibility
Authorship of ideas

Scientific editors

Objectives:

Reviewing and diffusion of knowledge and quality assurance

Requirements :

Editorial policy
Originality
Scientific rigour

Publishers

Objectives:
Commercial
Diffusion

Requirements:

Licencing (rights transfer)

Access only for subscriber
Standardisation of formats

Stakeholders of academic publishing

Governments and institutions

Objectives:

Diffusion and valorization of knowledge, researchers assessment

Requirements:

Ethical regulations
Open archives
Open Access publications
Rights retention

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Students,
young and senior
scientists

Researchers

Data
production/analysis

↓

Writing

↓

Submission

Publisher

Professionals from the
editing field

Editorial process

- Novelty
- Editorial policy
- Scientific content
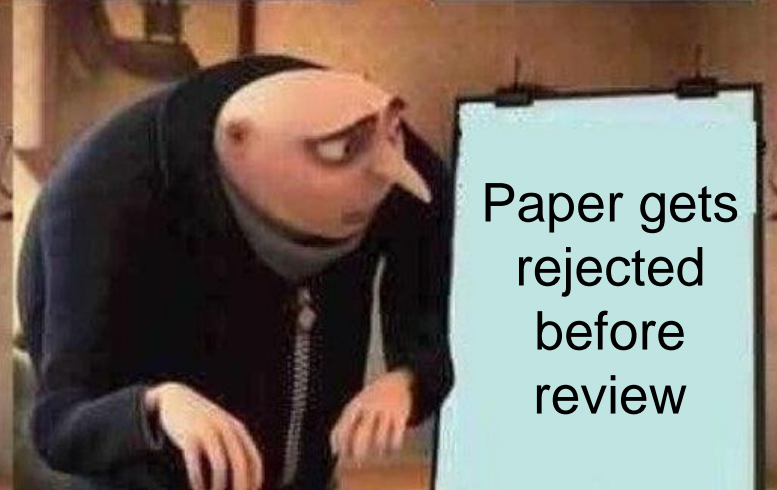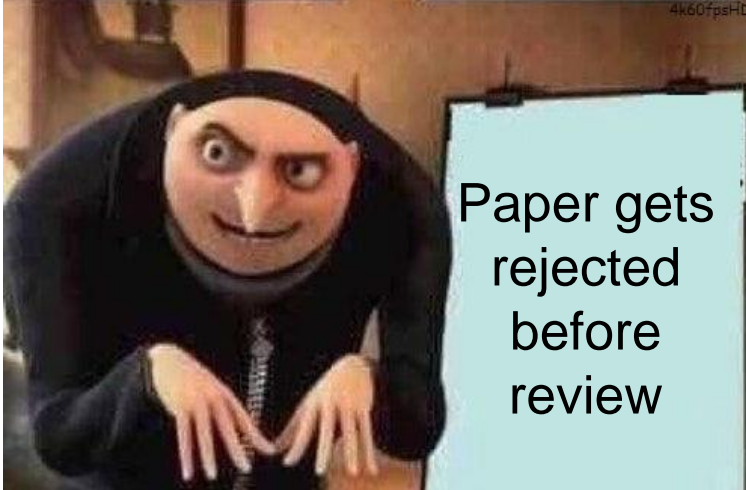
Editorial decision

Most articles submitted are rejected, many so **before review**.

Who decides which pape ~~s~~ publish?

Nature has space to publish ~~~~ or so ~~~~ ~~~~ week, hence its selection criteria are rigorous. Many submissions ~~~~ ~~out being sent for revie~~

8%

200 papers / week

Many submissions are declined without sent for review

Year	N. of submissions	N. papers published	% published
2014	10,511	884	8.4
2015	10,427	790	7.6
2016	10,859	847	7.8
2017	10,768	820	7.6

https://www.nature.com/nature/for-authors/editorial-criteria-and-processes

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Researchers

Data production/analysis

↓

Writing

↓

Submission

Publisher

Editorial process
- Novelty
- Editorial policy
- Scientific content

What are the consequences ?
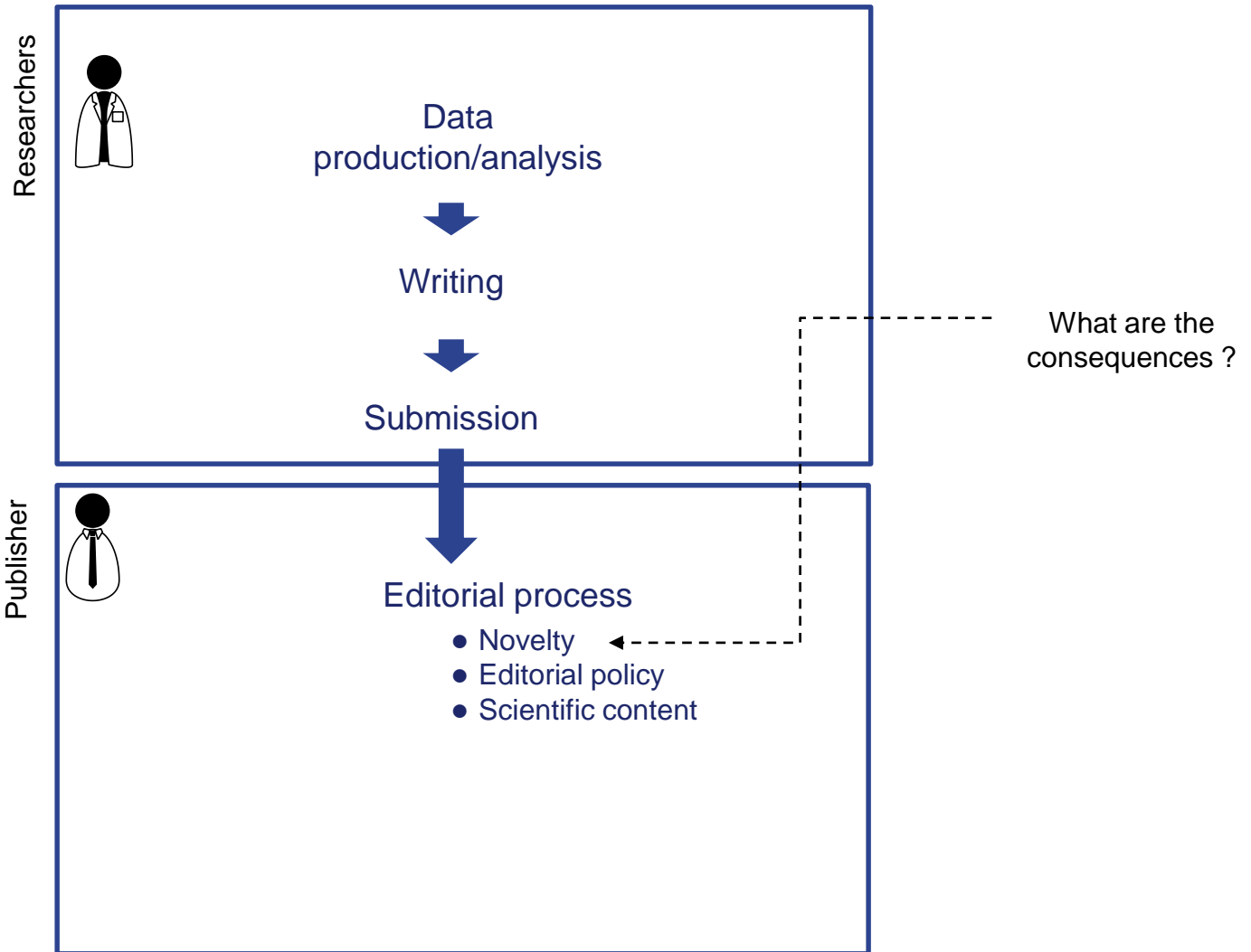
Reproducibility crisis

HAVE YOU FAILED TO REPRODUCE AN EXPERIMENT?
Most scientists have experienced failure to reproduce results.
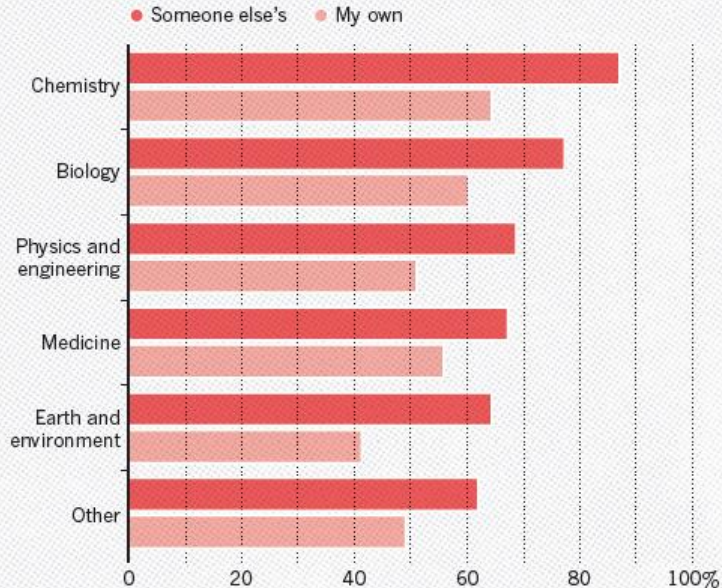
● Someone else's   ● My own

Chemistry
Biology
Physics and engineering
Medicine
Earth and environment
Other

0   20   40   60   80   100%

Baker, M. 1,500 scientists lift the lid on reproducibility. *Nature* **533**, 452–454 (2016).

Novelty in science – real necessity or distracting obsession?
3 janvier 2018, 12:20 CET

In a survey of over 1,500 scientists, more than 70 percent of them reported having been unable to reproduce other scientists' findings at least once. Roughly half of the surveyed scientists ran into problems trying to reproduce their own results. No wonder people are talking about a "reproducibility crisis" in scientific research – an epidemic of studies that don't hold up when run a second time.

But there's at least one major obstacle to investing time and effort in this endeavor: the quest for novelty. The prestige of an academic journal depends at least partly on how often the research articles it publishes are cited. Thus, research journals often want to publish novel scientific findings which are more likely to be cited, not necessarily the results of newly rerun older research.

A study of clinical trials published in medical journals found the most prestigious journals prefer publishing studies considered highly novel and not necessarily those that have the most solid numbers backing up the claims. Funding agencies such as the National Institutes of Health ask scientists who review research grant applications to provide an "innovation" score in order to prioritize funding for the most innovative work. And scientists of course notice these tendencies – one study found the use of positive words like "novel," "amazing," "innovative" and "unprecedented" in paper abstracts and titles increased almost ninefold between 1974 and 2014.

http://theconversation.com/novelty-in-science-real-necessity-or-distracting-obsession-84032

Researchers

Data production/analysis

Writing

Submission / Revision

Peer reviewing

Editors / Publishers

Editorial process
- Novelty
- Editorial policy
- Scientific content

DECISION

Acceptation

Rejection

Your article here is called a **Post-Print** version or **Author Accepted Manuscript**

Researchers **appointed by editors**

(unpaid for that specifically)

Double blind

Single blind

Open

Open Research Europe

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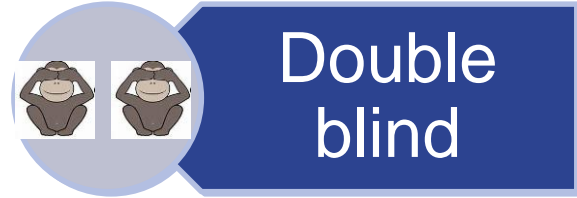
Home › Articles › A Google Earth Engine-enabled Python approach for the ...

RESEARCH ARTICLE

REVISED **A Google Earth Engine-enabled Python approach for the identification of anthropogenic palaeo-landscape features [version 2; peer review: 2 approved, 1 approved with reservations]**

Previous title: A Google Earth Engine-enabled Python approach to improve identification of anthropogenic palaeo-landscape features

Filippo Brandolini ✉ , Guillem Domingo-Ribas , Andrea Zerboni , Sam Turner

This article is included in Excellent Science gateway

This article is included in Safeguarding Cultural Heritage collection

Article   Authors   Metrics

Abstract

< Back to all reports

Reviewer Report   50 Views   ©

? **Approved with reservations**   ⓘ

20 Apr 2021   VERSION 1

Richard Boothroyd ⓘ, School of Geographical and Earth Sciences, University of Glasgow, Glasgow, UK

❞ Cite this Report

💬 Responses (1)

The research article provides an interesting application of a Google Earth Engine-enabled Python approach for identifying palaeo-landscape features on the Po Plain, Italy. Using Sentinel-2 satellite imagery, the study presents a freely accessible and open-source methodology for detecting and interpreting buried features in the landscape. Several locations on the Po Plain with well-known archaeological sites are used to test the methodology, with excellent descriptions of the sites provided. In general, the methodology is clearly described and logical to follow. For each site, palaeo-landscape features (e.g., palaeochannels and canals) are detected and interpreted, with discussion of the advantages and disadvantages of the different identification approaches (including spectral indices and spectral decomposition). Overall, the study provides an important research contribution that is of interest to a range of audiences (both technical and general).

The study is original in terms of material and argument. Although established spectral indices and spectral decomposition techniques are used, the multitemporal element for detecting palaeo-landscape features is original. The study engages with relevant methodologies and secondary literature on the topic (spanning heritage, remote sensing and fluvial geomorphology literature).

Parts of the results section could be more clearly presented. Specific
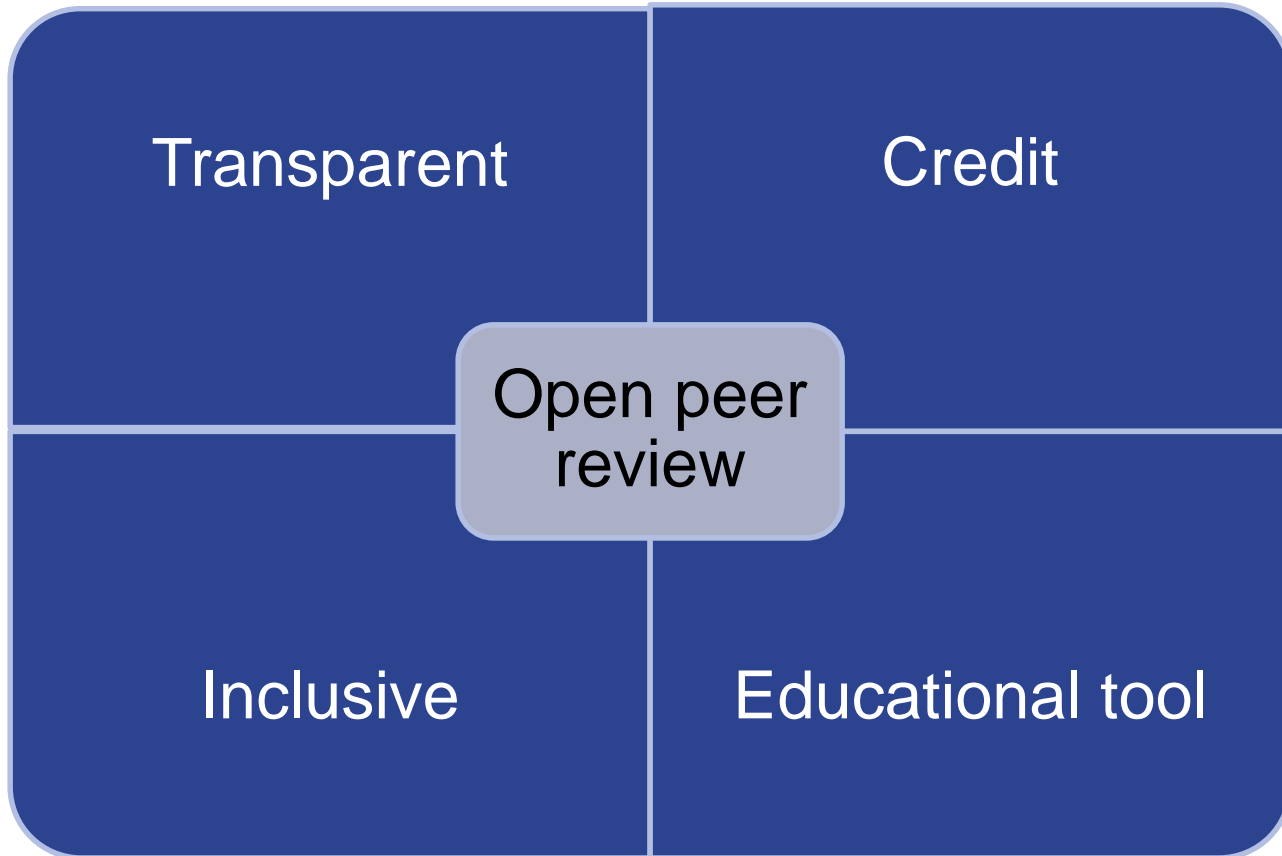
Predatory publishers (the dark side of open access?)

authors pay a fee to be published in a journal that does not make a selection and does not apply any peer review.

Predatory publishers (the dark side of quantitative evaluation systems)

NEWS | 22 November 2021

Hundreds of gibberish papers still lurk in the scientific literature

"It is very worrying," says Guillaume Cabanac, a computer scientist at the University of Toulouse in France, who has worked to uncover nonsense science papers in special issues. He adds that it is shocking to see such papers in journals from 'flagship' publishers and that "it is not only predatory journals that publish bullshit".

A Springer Nature spokesperson said that an investigation had revealed "deliberate attempts to subvert the trust-based editorial process and manipulate the publication record". They added that they did not yet know who was responsible (*Nature* is editorially independent of its publisher).

https://www.nature.com/articles/d41586-021-03035-y

How can you avoid publishing with a predatory publisher?

How can you avoid publishing with a predatory publisher?

A white list of Open Access journals and their policies

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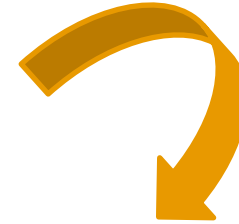
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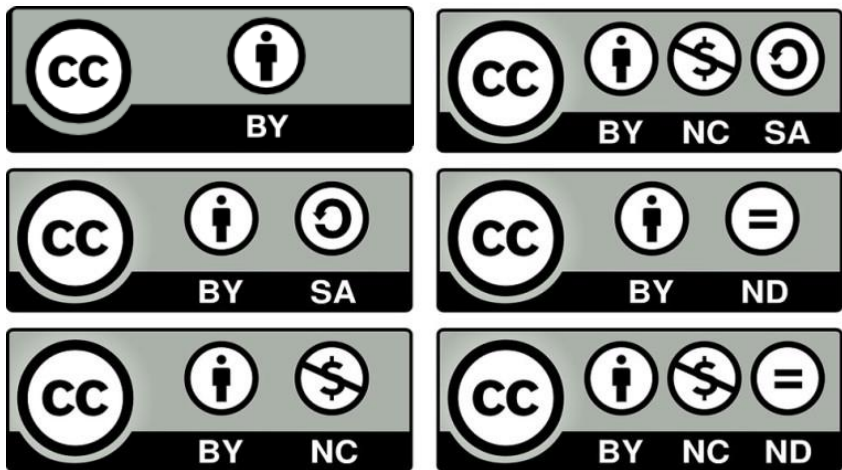
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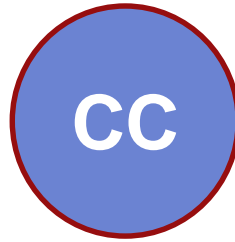
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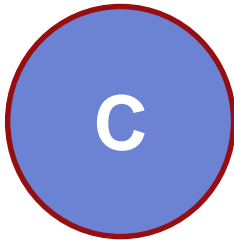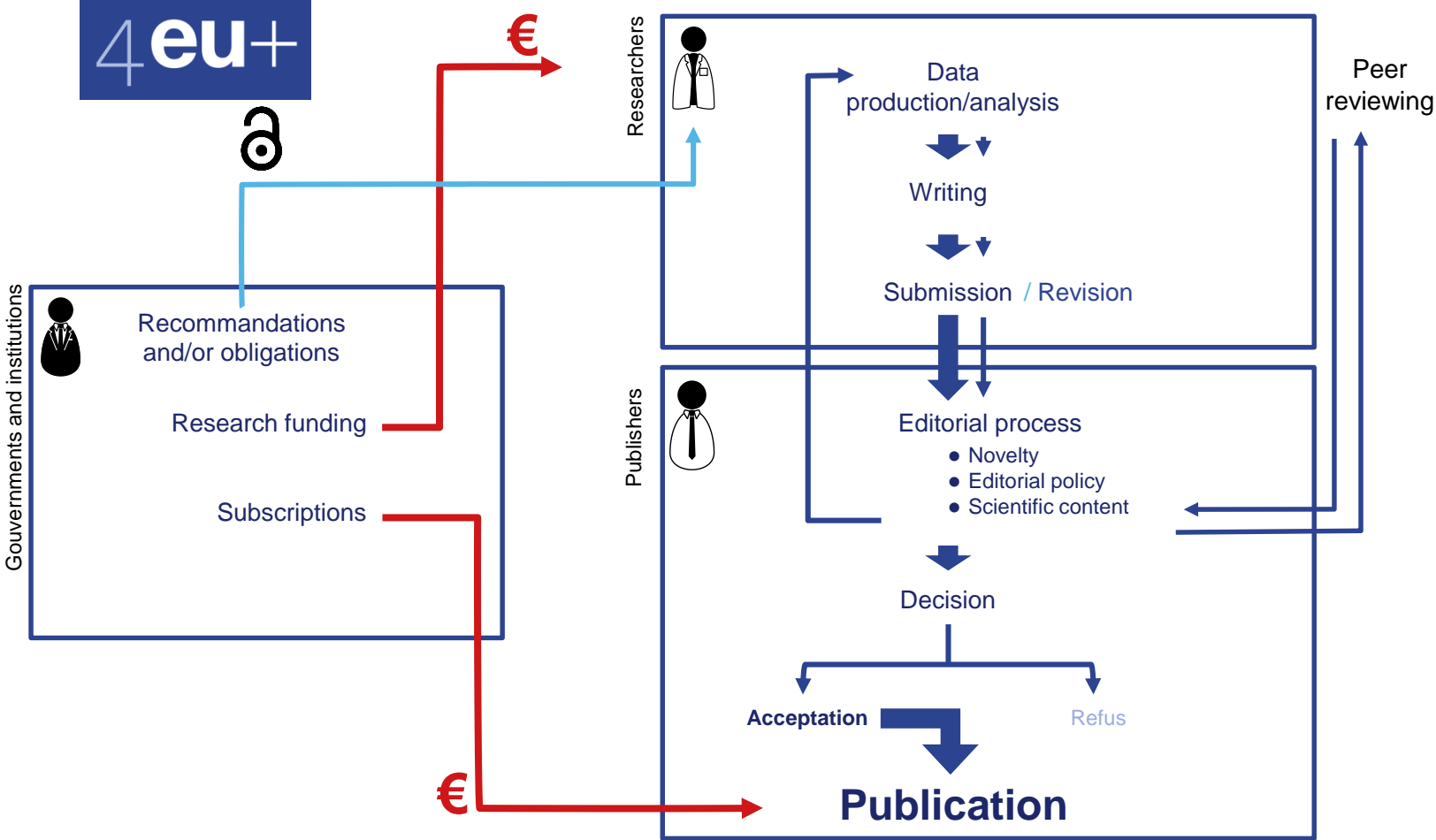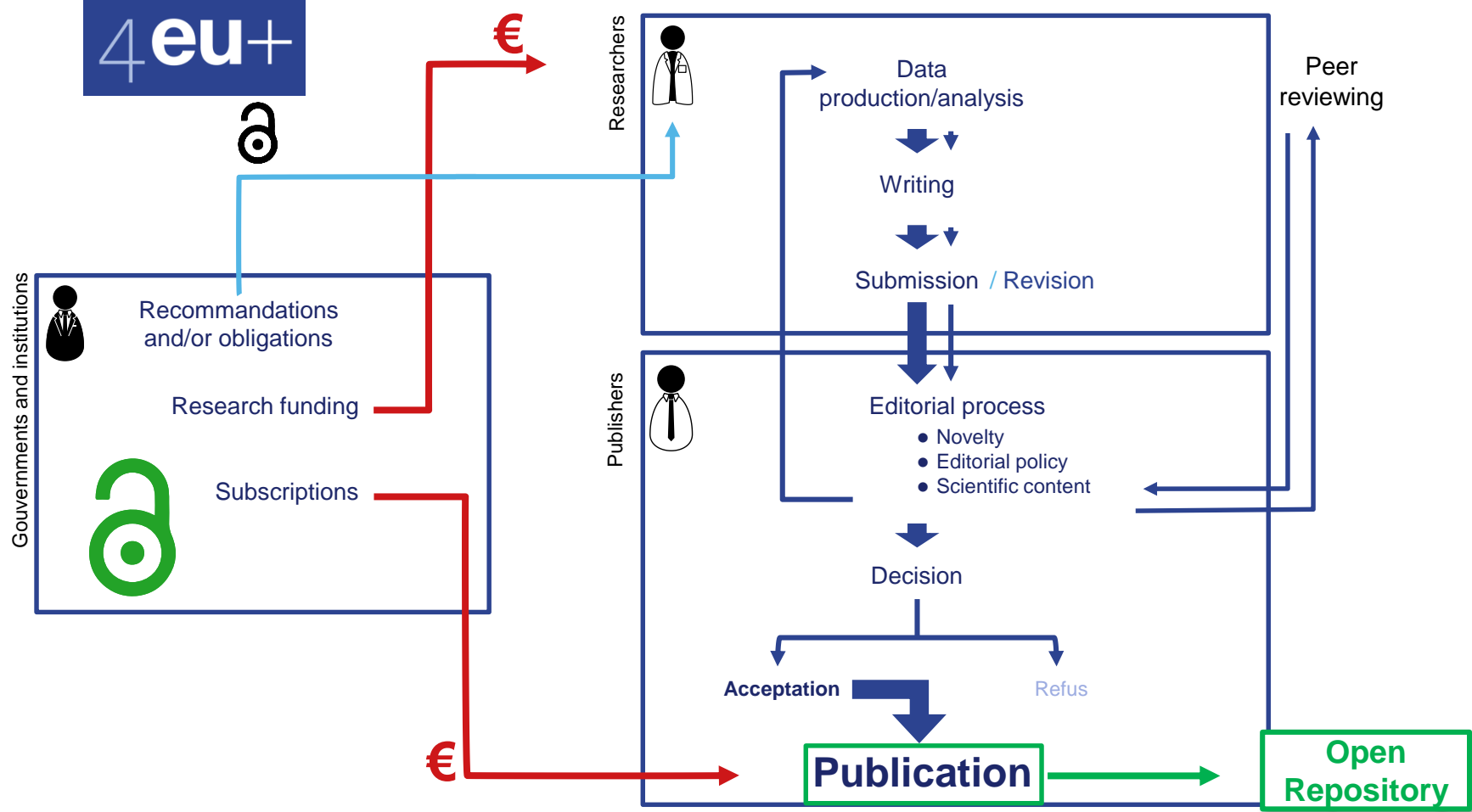
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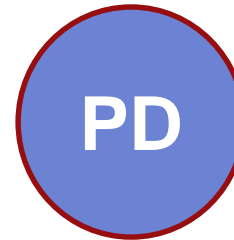
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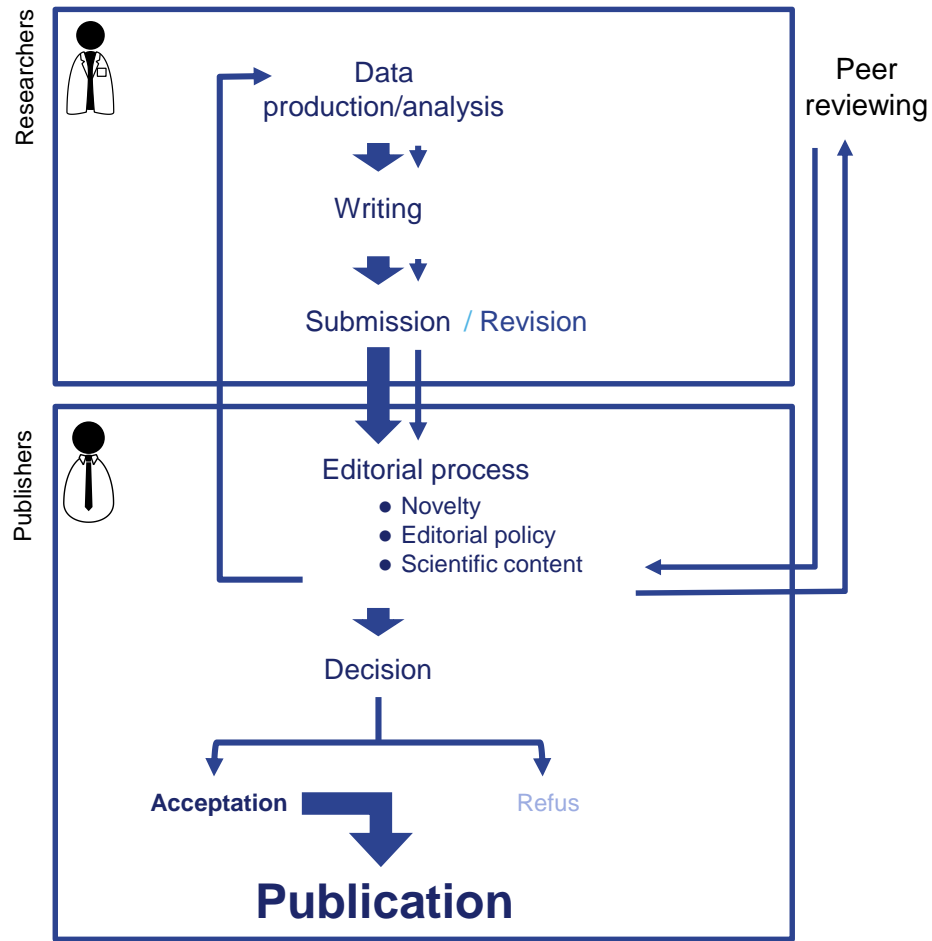
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Researchers

Peer reviewing

Data production/analysis

Writing

Submission / Revision

Gouvernements and institutions

Recommandations and/or obligations

Research funding

Subscriptions

Publishers

Editorial process
- Novelty
- Editorial policy
- Scientific content

Decision

Acceptation   Refus

Publication

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Researchers

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Decision

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Acceptation   Refus

Publication

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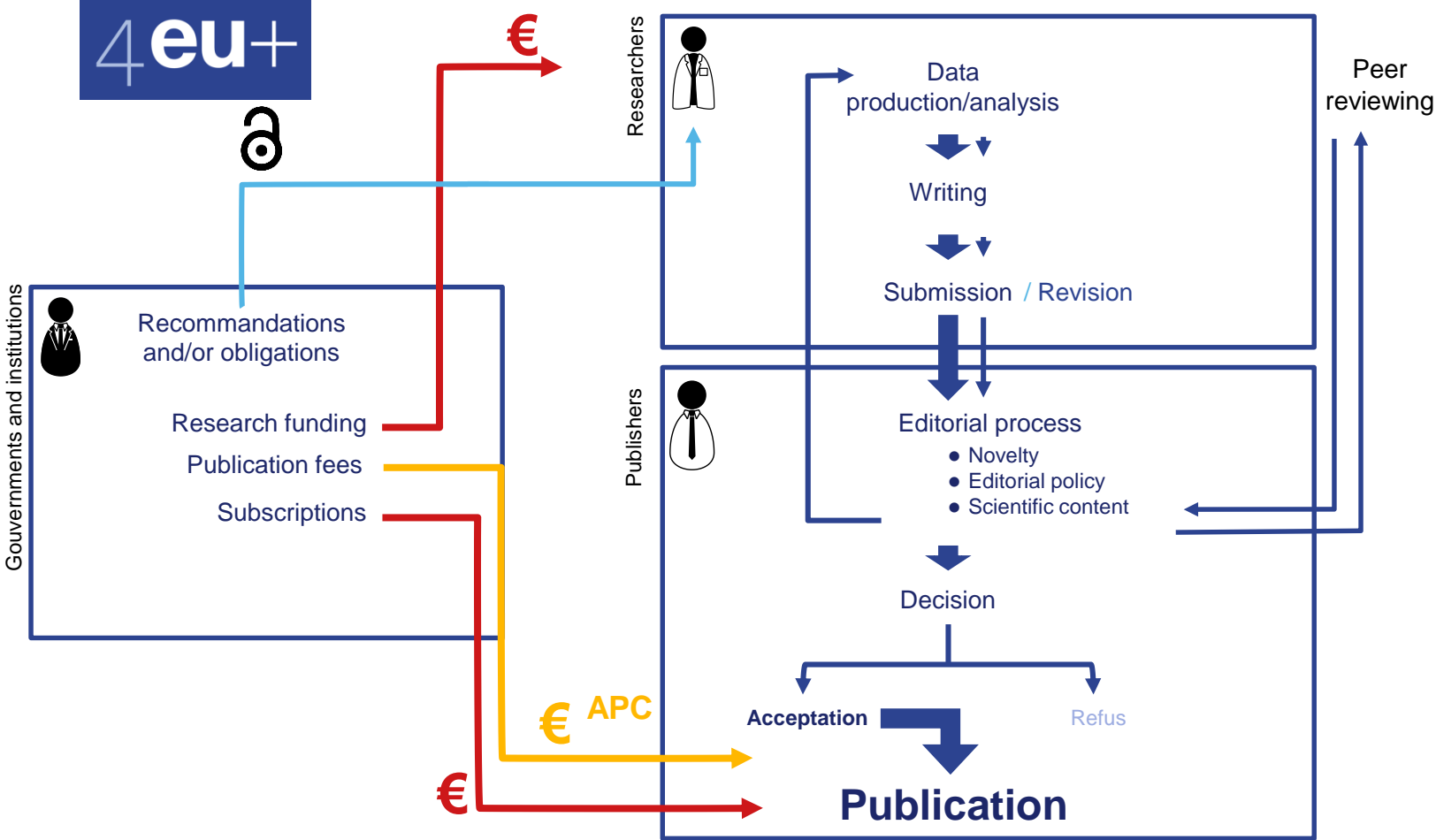
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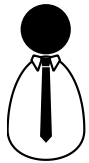
Managed entirely by the publisher

APC (Article Processing Charges)
~**1500€** / article

Nature:
9500€ …!

Journal choice

Who's your audience?

What's your message?

What's the best format for your message and target audience?
- Thorough article
- Rapid communication
- Literature review
- Methodology paper
- Etc.

What's your community do?

Do your funders, institution or state require you to publish in open access?

Register for our upcoming events: https://4euplus.eu/4EU-273.html

Next sessions:
- "What are my funders requirements on Open Science? A focus on Plan S" | 29 November 2021, 14:00 - 15:30
- "Strategies for publishing in Open Access journals" | 13 December 2021, 11:00 - 12:30
- 10 further session in 2022

Thank you

Paola Galimberti, University of Milan

Violaine Jacq, Sorbonne University Library

Cycle of scientific publication : an overview