Preprinting and Publishing in the Life and Biomedical Sciences

The editorial process
and peer review

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In today's lesson we will discuss:

- The editorial process and scientific peer review

- The inner workings of the journal editorial process and the roots of modern peer review

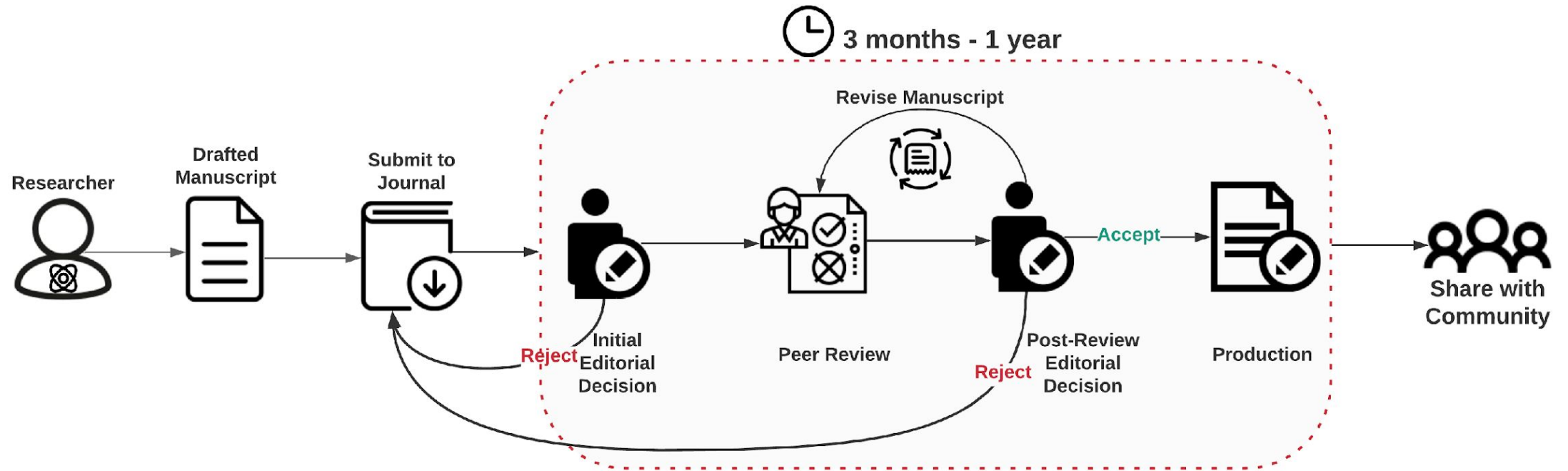- Challenges impacting existing models of peer review and journal workflows

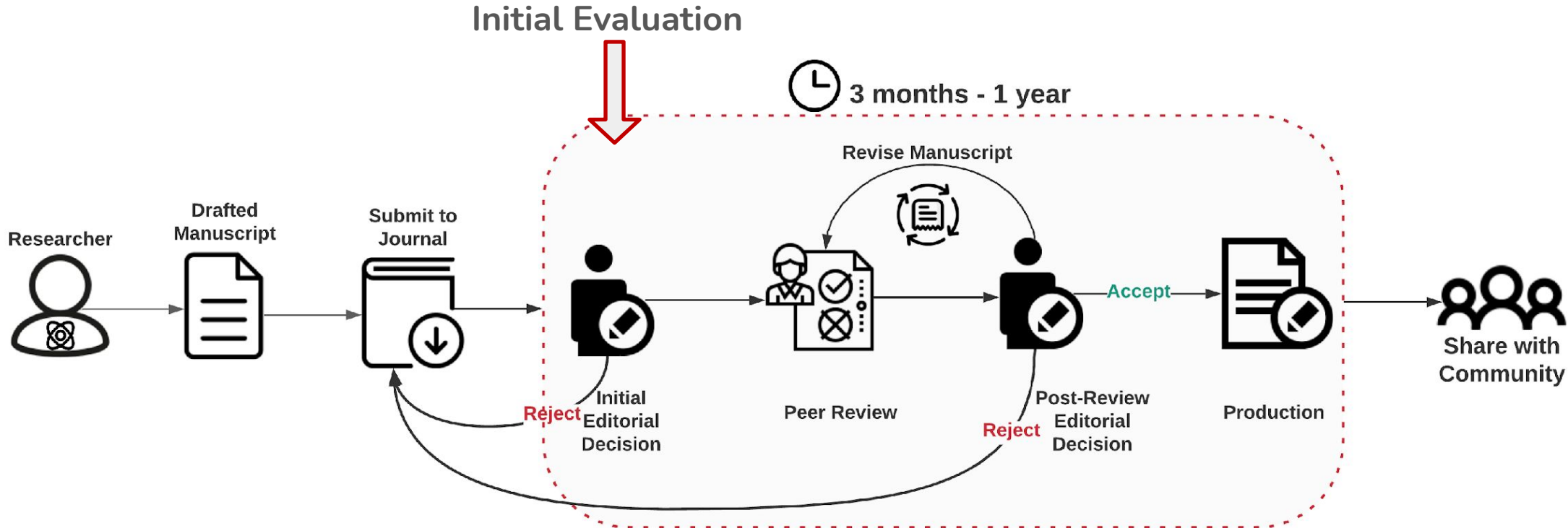- Emerging innovations and best practice in peer review and transparent editorial processes

- Hands-on peer review workshop

The traditional journal-dependent manuscript lifecycle

The traditional journal-dependent manuscript lifecycle:
## The editorial process

Initial editorial evaluation

Technical checks

Initial **technical checks** ensure that the submission includes all files and information required by the journal.

This process is usually administrative and the submission is returned to the authors for necessary amendments.

- Required disclosures
  - competing interests
  - ethics approval
  - authors' contributions
  - availability of data
  - funding information
- Text overlap (plagiarism)
- File completeness
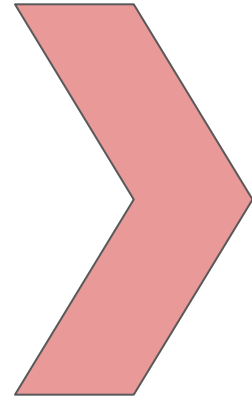
Initial editorial evaluation

After the technical checks, the manuscript is sent to an editor:

Scope
- Is the manuscript suitable for the disciplinary focus of the journal?
- Are there specific requirements for novelty/advance, does the work meet the expected level?

Editorial policies
- Are all policies met? E.g., regarding ethical requirements, data availability or other

The editor will make an initial decision:

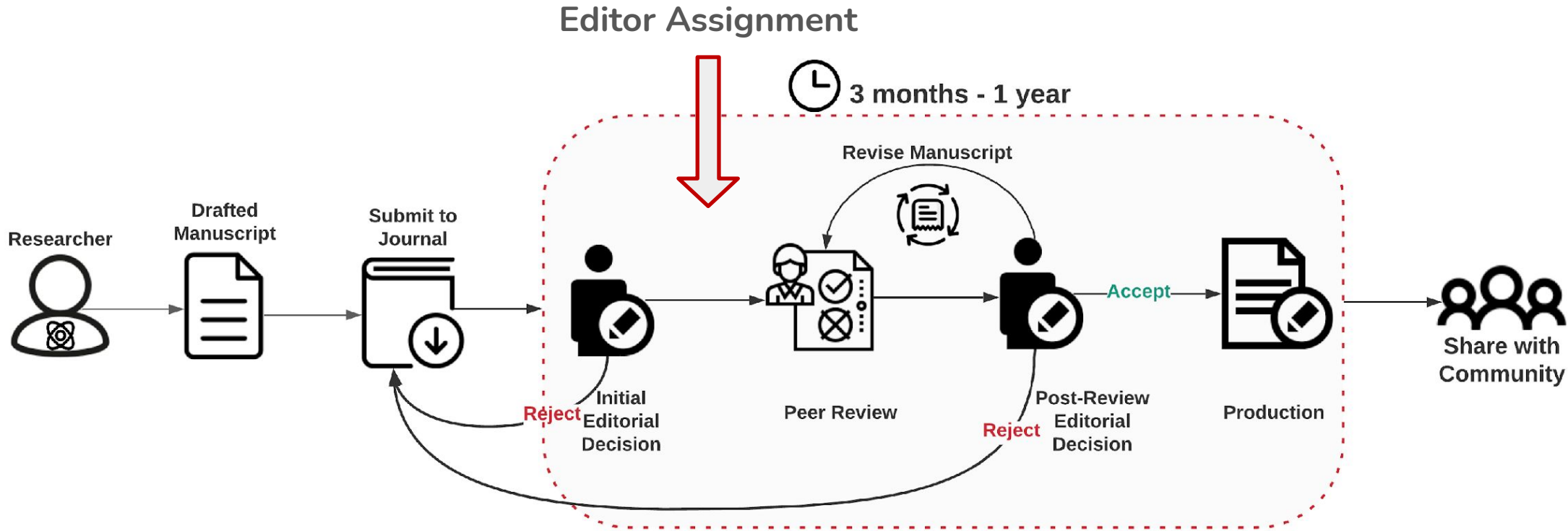👍 All requirements met ⇒ **proceed to peer review**

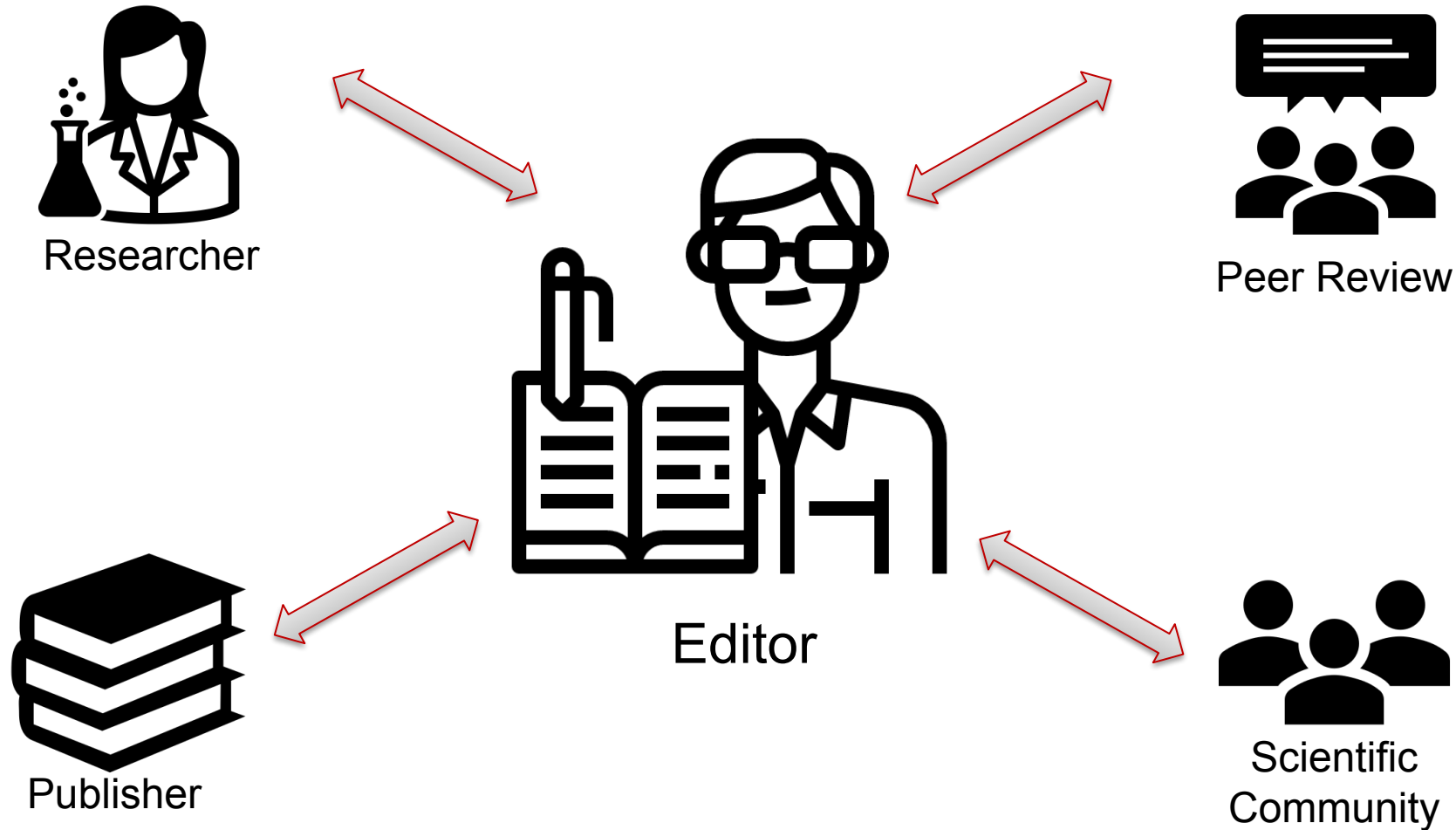👎 Scope and/or policies not met ⇒ **desk reject**, the journal notifies the author

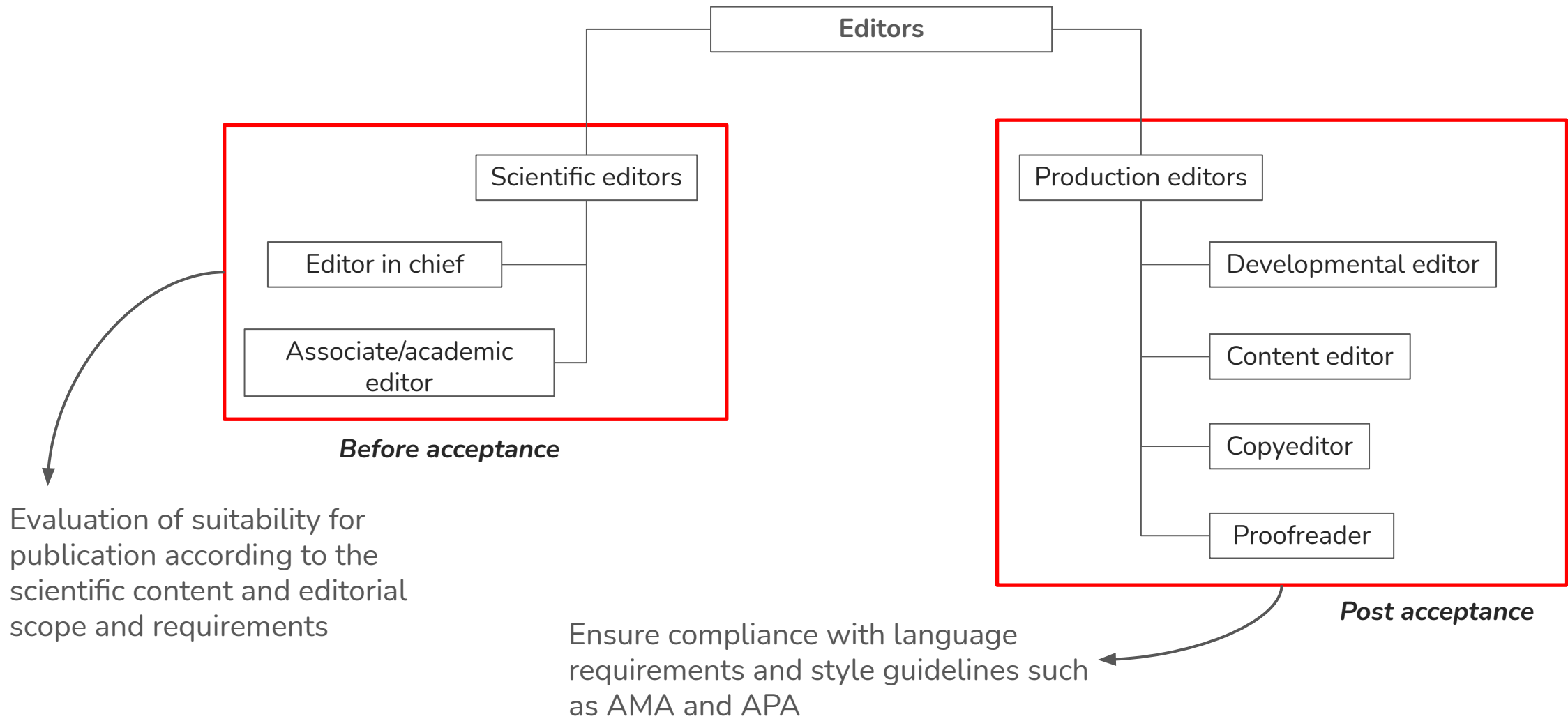*This step takes from 1-2 days up to a couple of weeks*

The traditional journal-dependent manuscript lifecycle:
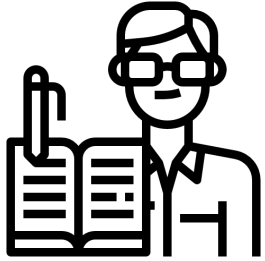## The editorial process

Editors – a central hub in the journal-dependent publication process

Researcher

Peer Review

Editor

Publisher

Scientific Community

The various types of editors: What do they do?

Editors

Scientific editors
- Editor in chief
- Associate/academic editor

Before acceptance

Evaluation of suitability for publication according to the scientific content and editorial scope and requirements

Production editors
- Developmental editor
- Content editor
- Copyeditor
- Proofreader

Post acceptance

Ensure compliance with language requirements and style guidelines such as AMA and APA

Scientific Editors

The Editor-in Chief and the Associate/Academic Editors act as gatekeepers for the journal
- They **curate** content i.e. make decisions on what gets published in the journal
- They uphold the journal's policies and thus look after the journal's **reputation**

In addition to handling the editorial process for individual manuscripts, they also:
- Invite colleagues to submit to the journal
- Invite colleagues to review for the journal or join its editorial board
- Commission non-research manuscripts such as narrative reviews and commentaries
- Keep abreast of the latest literature and developments in their field and make recommendations for commissioned content or editorial policy needs
- Represent the journal at conferences and meetings
- Suggest topics for and/or manage special issues at the journal - collections of publications around a specific theme, usually time bound

Editor-in-Chief
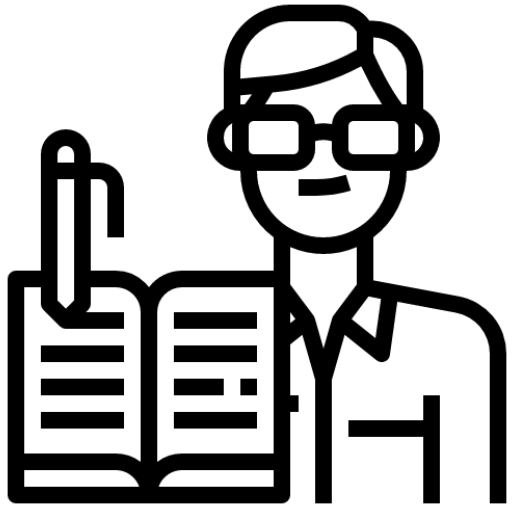
Overall responsibility for editorial content at the journal

- Ultimate say on editorial decisions

- Sets strategy and direction for the journal

- Drives and oversees development of journal scope and editorial policies

- May be more or less involved in manuscript handling depending on the journal structure and size

- Public face for the journal

- May be academic (a recognized leader in the field served by the journal) or professional (an employee of the journal or publisher)

- Supported by an **editorial board** - a group of Academic Editors/Associate Editors who handle individual manuscripts and provide input on scope and editorial policies

Associate/Academic Editors

The Associate or Academic Editors are researchers with expertise in the field(s) covered by the journal

They manage the editorial process and peer review for individual manuscripts:
- Make initial decisions on whether to proceed to peer review or desk reject
- Identify reviewers for the manuscript
- Make a decision on whether to publish the manuscript, informed by the reviewer's comments and their assessment of the manuscript and the journals' requirements
- Liaise with authors about specific editorial requests, or queries the authors may have
- Handle complaints and appeals on editorial decisions

Can preprinting benefit the editorial process?

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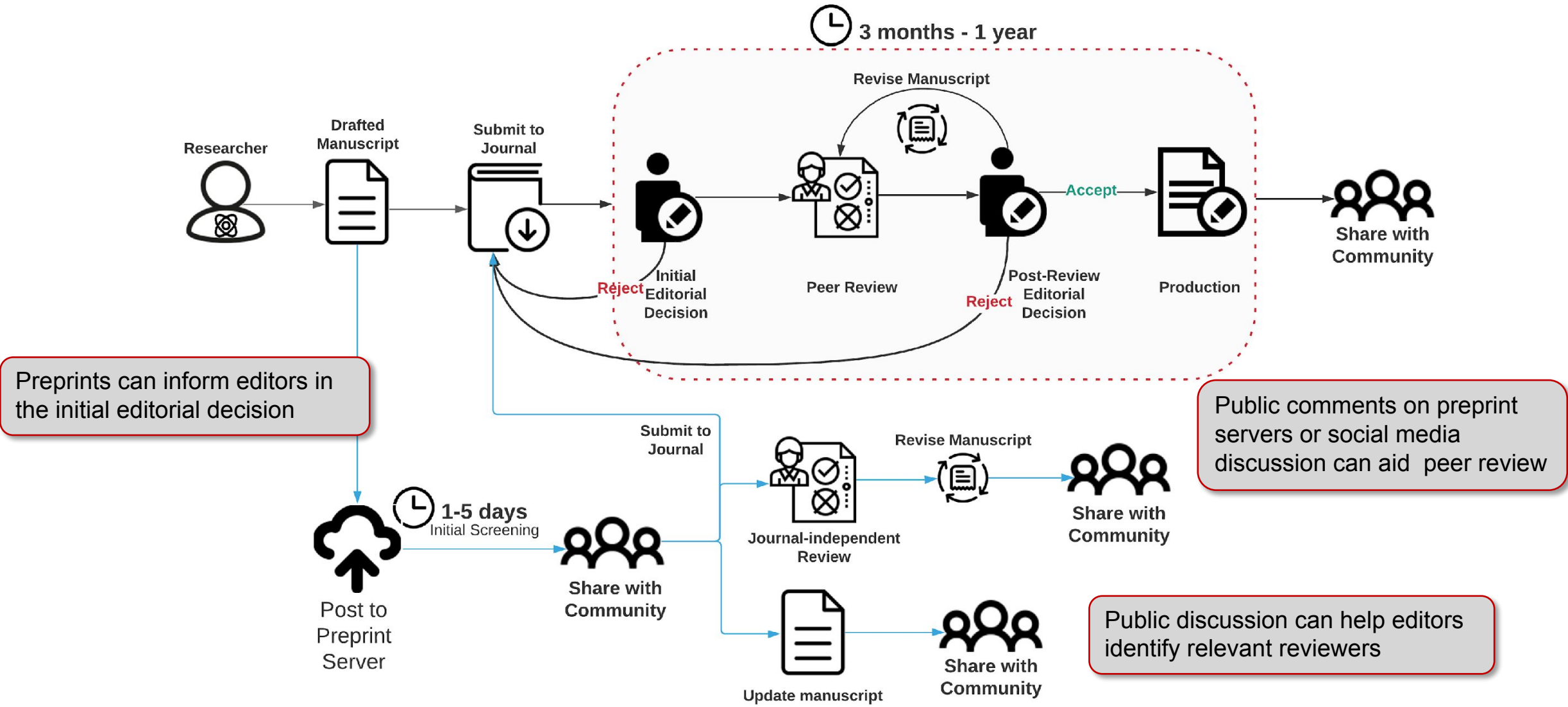
The traditional journal-dependent manuscript lifecycle:
The peer review process
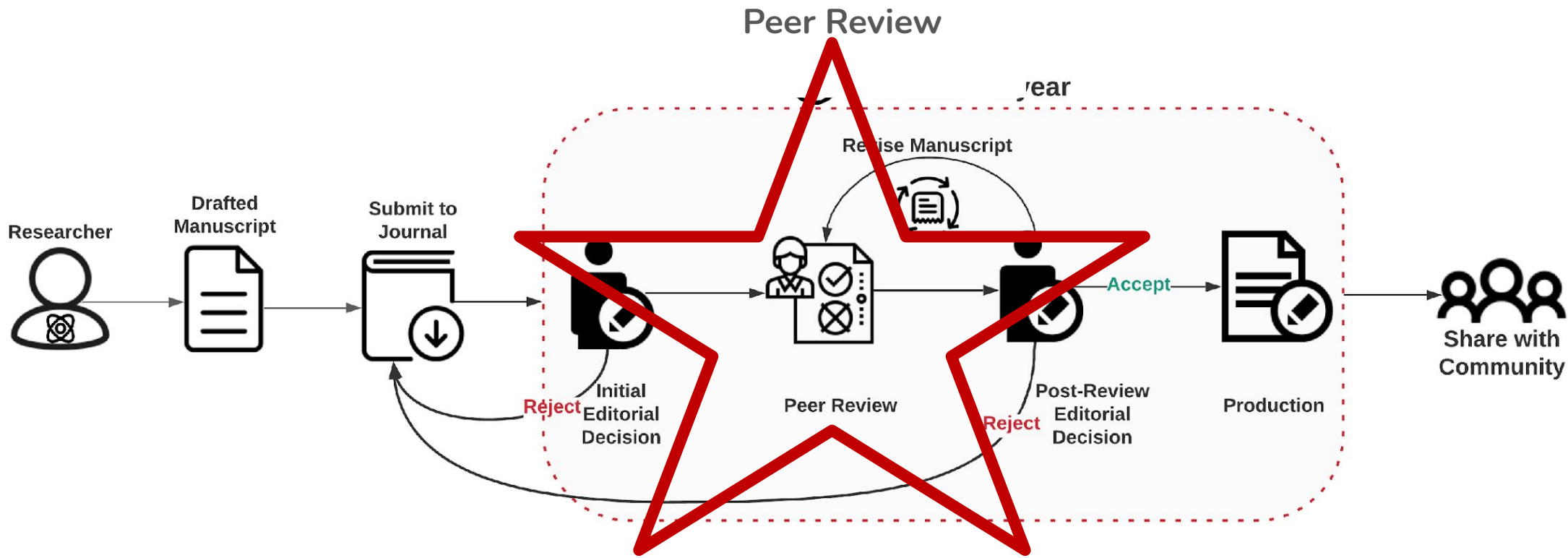
Editors play a critical role in the peer review process
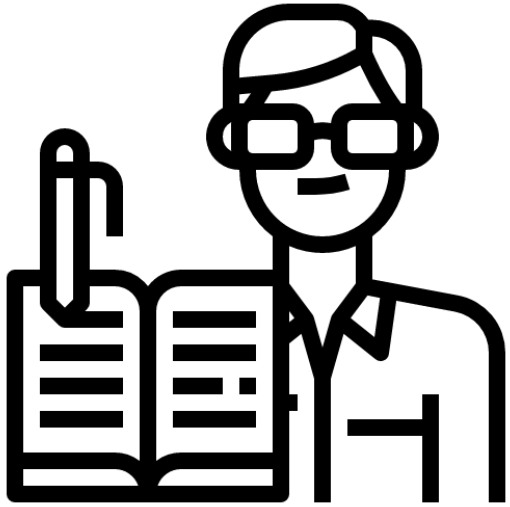
*"**Editors are responsible for monitoring and ensuring the fairness, timeliness, thoroughness, and civility of the peer-review editorial process.**"*
- Council of Science Editors, White Paper on Publication Ethics

Peer review

What is peer review?

Many scientists' first exposure to peer review is on the receiving end. Do we understand how peer review works - and how it should work in an ideal world?

The idea of peer review as the gatekeeper for a stable repository of human knowledge is not as old as it might seem!
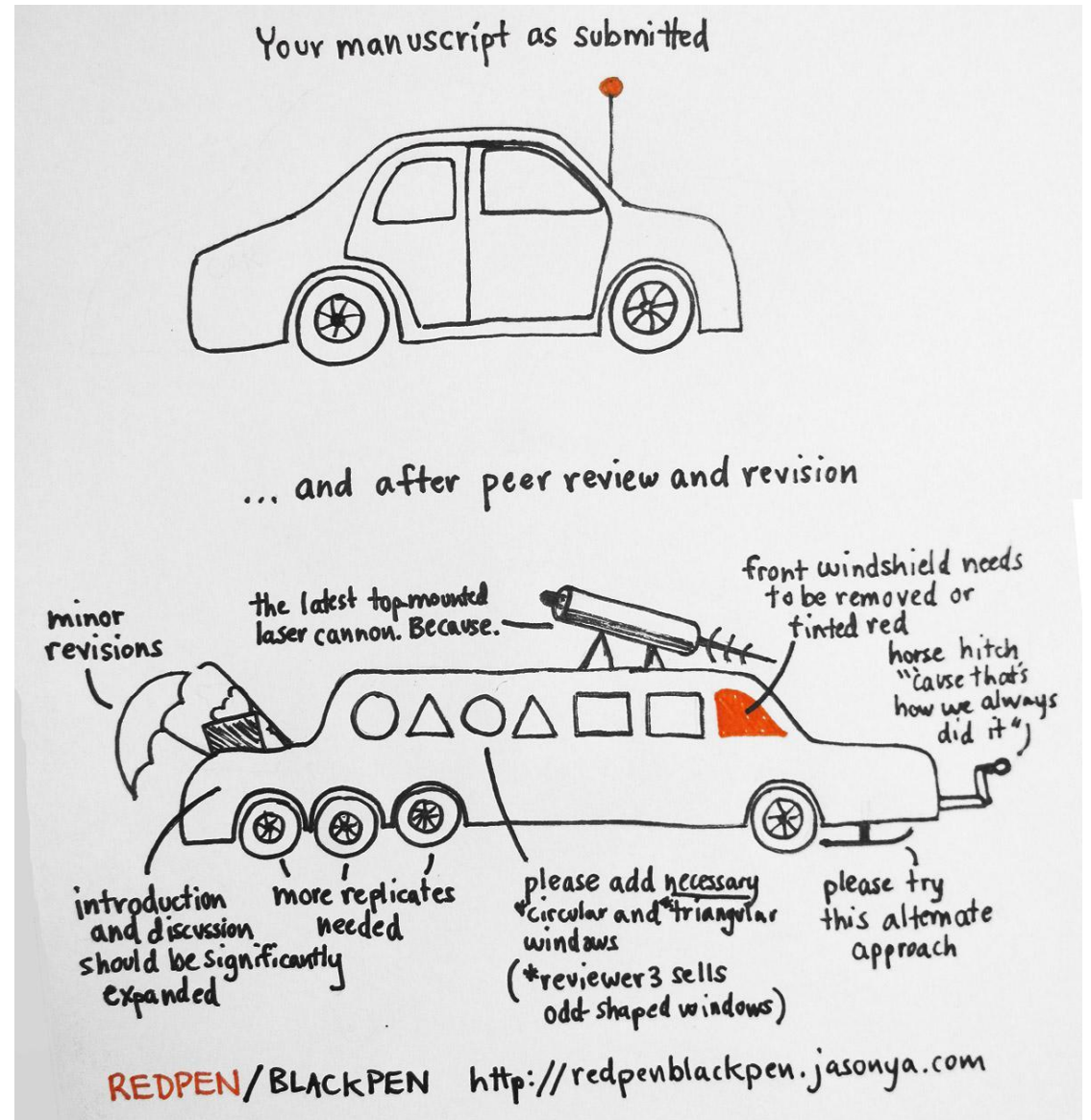
The history of peer review

Modern peer review was born at the Royal Society in the mid-1600s...

[...it was determined that "... [articles in the Society's Philosophical Transactions should be] first reviewed by some of the members of the same" (Royal Society Order in Council 1/3/1665)]

...and hasn't changed all that much since.
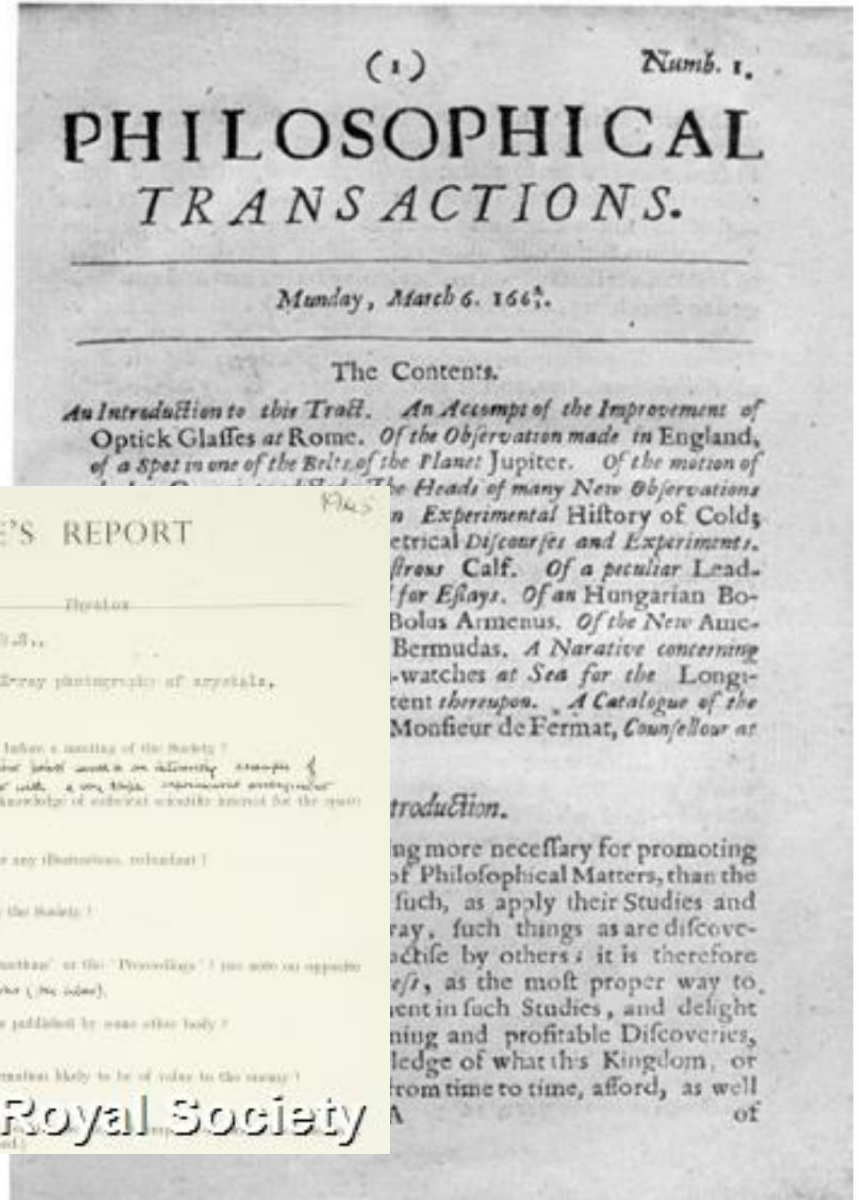
What is a peer review?

An evaluation of the manuscript completed by an expert in the field

As part of the editorial process, the editor will invite experts (*peers*) to provide a report (*review*) on the manuscript

- Most journals aim to obtain 2-3 reviews
- Ideally the reviewer should be **knowledgeable** in the area of work of the manuscript and able to provide an **objective** review i.e. free of a comparing interest or bias
- Reviewers may agree or decline depending on their expertise and availability, journals often invite multiple reviewers until 2-3 agree
- Reviewers are usually given 10-21 days to complete the review (deadlines vary per journal)

The format of the review will vary per journal:

- Free text
- Review form requesting that specific items are covered
- Possibility (or not) to provide confidential comments to the editor

(In)formal training in peer review

Several new training resources available and/or in development!

eLIFE
elifesciences.org

FEATURE ARTICLE

RESEARCH CULTURE

Co-reviewing and ghostwriting by early-career researchers in the peer review of manuscripts

Abstract Many early-career researchers are involved in the peer review of manuscripts for scientific journals, typically under the guidance of or jointly with their advisor, but most of the evidence about this activity is anecdotal. Here we report the results of a literature review and a survey of researchers, with an emphasis on co-reviewing and 'ghostwriting'. The literature review identified 36 articles that addressed the involvement of early-career researchers in peer review, most of them about early-career researchers and their advisors co-reviewing manuscripts for the purposes of training: none of them addressed the topic of ghostwriting in detail. About three quarters of the respondents to the survey had co-reviewed a manuscript. Most respondents believe co-reviewing to be a beneficial (95%) and ethical (73%) form of training in peer review. About half of the respondents have ghostwritten a peer review report, despite 81% responding that ghostwriting is unethical and 82% agreeing that identifying co-reviewers to the journal is valuable. Peer review would benefit from changes in both journal policies and lab practices that encourage mentored co-review and discourage ghostwriting.

DOI: https://doi.org/10.7554/eLife.48425.001

GARY S MCDOWELL*, JOHN D KNUTSEN, JUNE M GRAHAM, SARAH K OELKER AND REBECCAH S LIJEK*
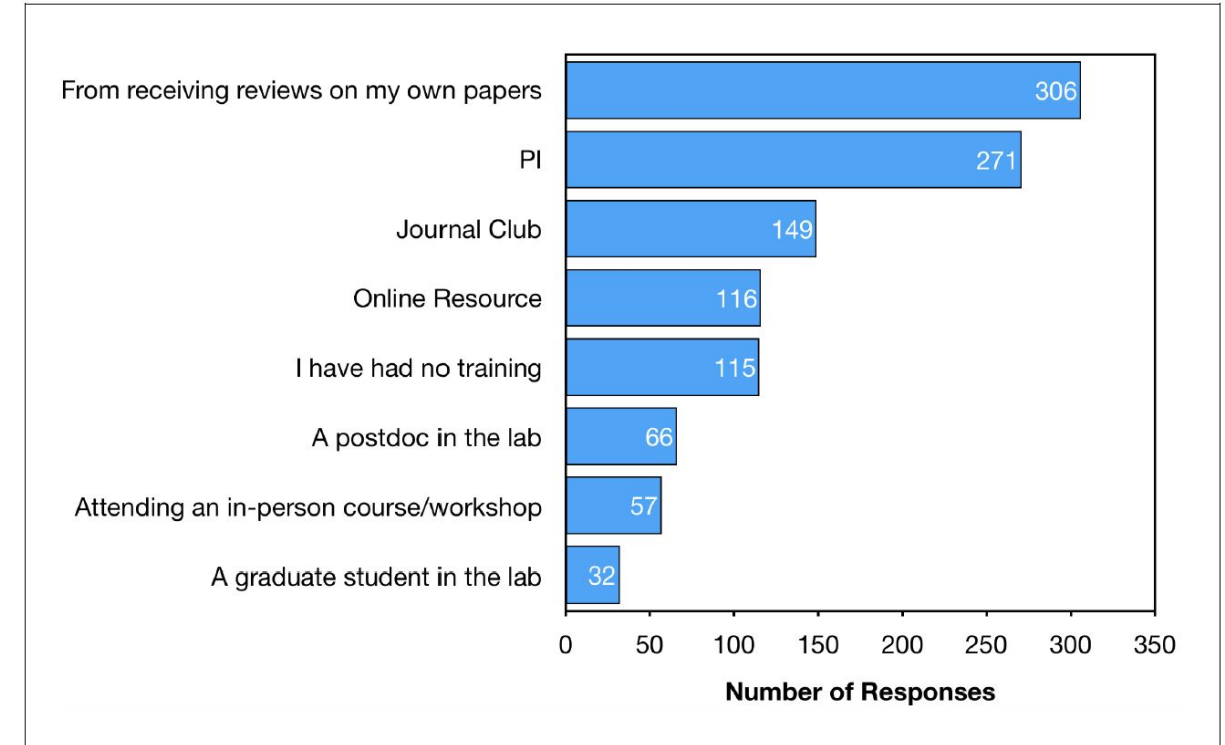
Figure 3. Training in how to peer review a manuscript. Responses to the question: "How did you gain training in how to peer review a manuscript?" Respondents were able to select as many options as applied to them. These data include responses from all survey participants, including those without any independent or co-reviewing experience.
DOI: https://doi.org/10.7554/eLife.48425.007

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Training and certification in peer review

Some examples...

PREreview Open Reviewers mentorship programme

IOP Peer Review Certification

PLOS Peer Review Centre

Figure 1. PREreview Open Reviewers Stages of Engagement

Reviewer best practice

Would you publicly commit to a set of principles that guide you as a peer reviewer?

Reviewing papers as you would like your papers to be reviewed

Buzz Baum*

MRC Laboratory for Molecular Cell Biology, University College London, London WC1E 6BT, United Kingdom

F1000Research

F1000Research 2015, 3:271 Last updated: 24 FEB 2021

Check for updates

RESEARCH NOTE

REVISED **An Open Science Peer Review Oath** [version 2; peer review: 4 approved, 1 approved with reservations]

Jelena Aleksic[1], Adrian Alexa[2], Teresa K Attwood[3], Neil Chue Hong[9], Martin Dahlö[4], Robert Davey [5], Holger Dinkel[6], Konrad U Förstner[7], Ivo Grigorov[8], Jean-Karim Hériché[6], Leo Lahti [10], Dan MacLean[11], Michael L Markie[12], Jenny Molloy[13], Maria Victoria Schneider[5], Camille Scott[14], Richard Smith-Unna[15], Bruno Miguel Vieira[16], as part of the AllBio: Open Science & Reproducibility Best Practice Workshop

Link to sample reviewer oath

RajLab

Random musings from the Raj Lab for systems biology

Saturday, April 19, 2014

How to review a paper

Or, I should say, how I review a paper.

Peer review is a mess. We all know it, and have written about it endlessly, including myself. And we've also railed against a system in which we do all the work for the benefit of the publishers. But wait: if we are doing all the work, then we should be able to bend this system to our collective will, right? When we complain about bad reviews, just remember that we ourselves are the ones giving these terrible reviews. So our goal should be to give good reviews!

How do you do that? Here are some principles I try to think about and follow:

Peer review and editorial decision

Peer reviewers will submit their reports to the editor, the reports include:

- An assessment of the manuscript
- Comments on any potential concerns or flaws, questions or requests for the authors
- A recommendation on whether the manuscript is suitable for publication in the journal

Once all the reviews are available, the editor will make an editorial decision, informed by the reviewers' comments, their own assessment of the manuscript and the editorial policies at the journal:

👍 **Accept** - the manuscript will be published

❓ **Revision** - the manuscript does not yet meet all the journal requirements, the authors are asked to make revisions to address remaining items, requests for revisions may be
    Major - usually requiring additional data or major changes to the interpretation
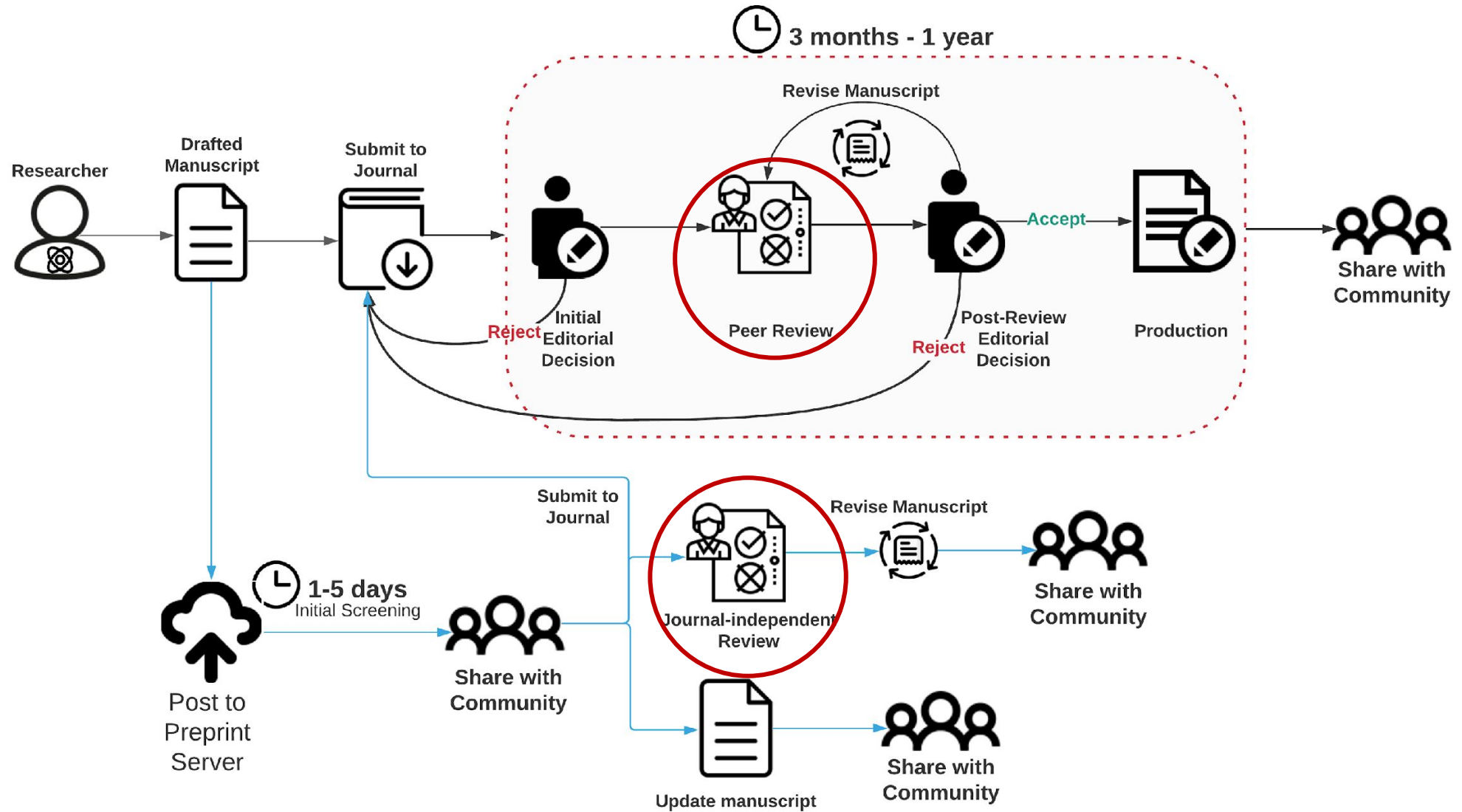   *Minor* - usually involving clarifications or changes to the text

👎 **Reject** - the manuscript does not meet the journal requirements, and

The editor will notify the authors with a decision letter including the decision, the editor's' comments and the peer reviews
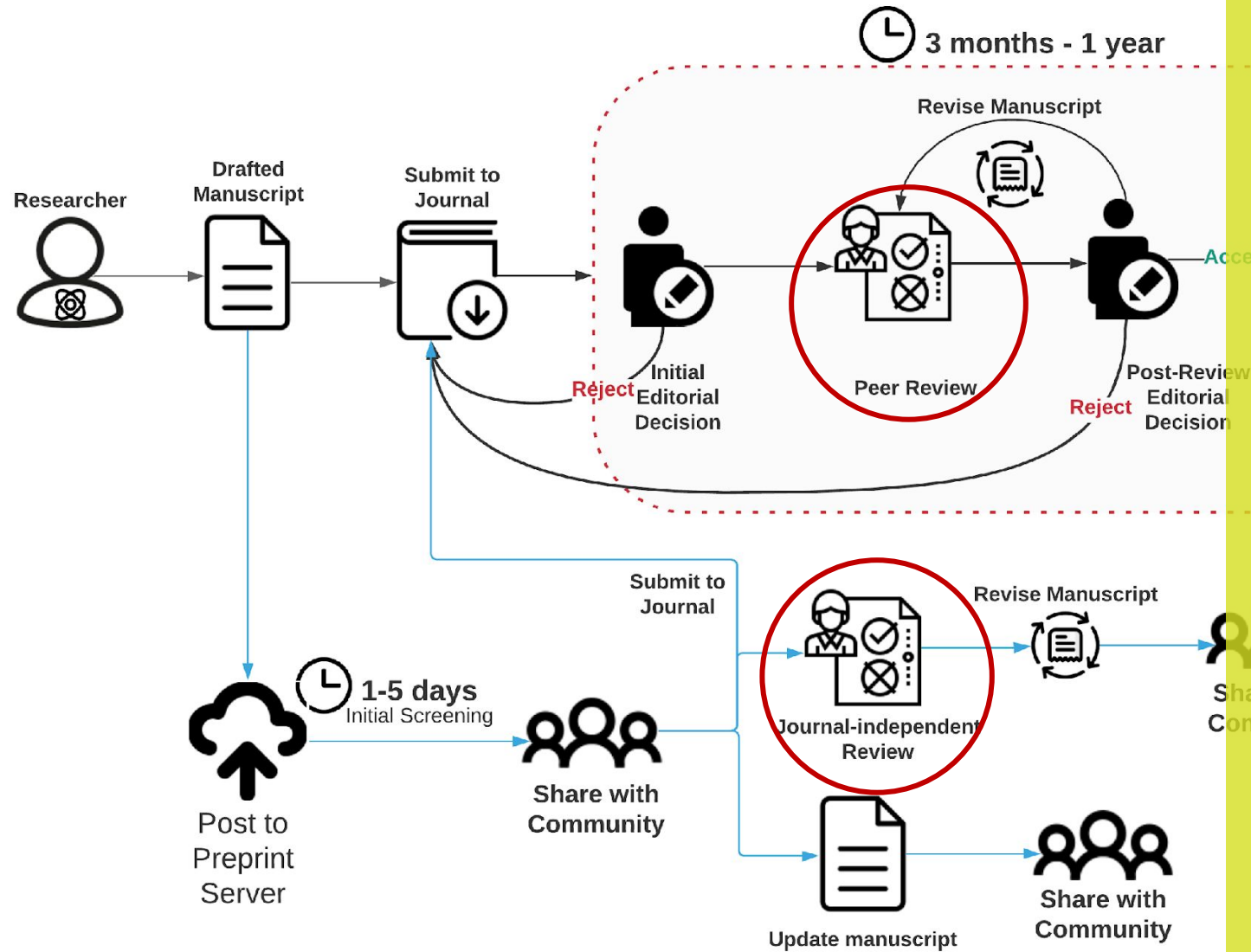
🕐 *This stage can take from 3-4 weeks to several months, timelines vary per manuscript and discipline*

Evolving formats of peer review

Evolving formats of peer review

🕐 3 months - 1 year

Researcher → **Drafted Manuscript** → **Submit to Journal**

Revise Manuscript

Initial Editorial Decision — Reject

Peer Review

Post-Review Editorial Decision — Accept — Reject

🕐 1-5 days
Initial Screening

Post to Preprint Server

Share with Community

Submit to Journal

Journal-independent Review

Revise Manuscript

Update manuscript

Share with Community

Share with Community

Types of Peer Review

BLIND
Single blind: Reviewers know the authors' identities, but reviewer names are protected.
Double-blind: Reviewer and author names are protected.

SIGNED
Reviewers sign their comments. Authors receive reviewer names in the decision letter.

COLLABORATIVE
Reviewers collaborate and submit joint comments, or in some cases confer with authors and editors during the review process.

PORTABLE
Reviewers are sought by an organization or journal and shared with any journals that require them later on.

PUBLISHED
Reviewer comments and/or names are published with the article or preprint.

POST-PUBLICATION
After a manuscript is posted the community reviews the research in an open forum. Reviewer names are usually published with their comments.

plos.org/resources/for-reviewers/

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Transparent and/or signed peer reviews

Decision letter eLIFE

Christina L Stallings
Reviewing Editor; Washington University School of Medicine

Dominique Soldati-Favre
Senior Editor; University of Geneva, Switzerland

Josep Casadesús
Reviewer; Universidad de Sevilla, Spain

In the interests of transparency, eLife publishes the most substantive requests and the accompanying author responses.

Acceptance summary:

This study is interesting and important because by using PacBio conduct SMRT-seq based methylome analyses of 93 *M. tuberculosis* authors were able to uniquely provide a detailed description of *M. tuberculosis* genomes associated with the presence or absence of MTases.

Decision letter after peer review:

Thank you for submitting your article "Epigenetic mosaicism in the *Mycobacterium tuberculosis* methylome enables phenotypic plasticity without genetic mutation" for consideration by *eLife*. Your article has been reviewed by Dominique Soldati-Favre as the Senior Editor, a Reviewing Editor, and three

To sign or not to sign?
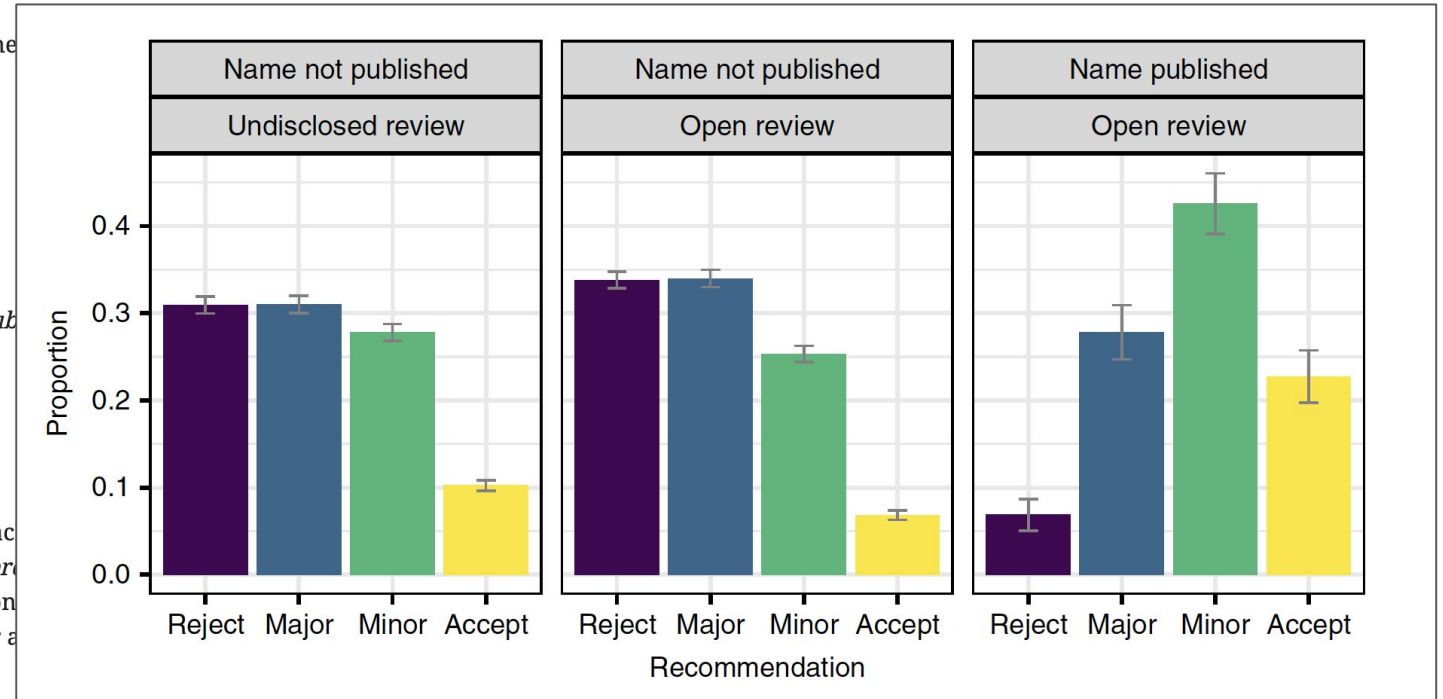
Bravo et al. Nat. Comms. 2019

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Research Output Reviewed

📄
Preprints

📑
Journal accepted manuscripts

📄
Privately shared manuscripts

📊
Other scholarly outputs

View all registered projects

Discover peer review projects

📘 **Projects**

Search

🔍 **Search**

Decoupling peer review from the journal

3 months - 1 year

Revise Manuscript

Researcher — Drafted Manuscript — Submit to Journal — Initial Editorial Decision — Peer Review — Post-Review Editorial Decision — Accept — Production — Share with Community

Reject

Reject

1-5 days
Initial Screening

Post to Preprint Server — Share with Community — Submit to Journal — Journal-independent Review — Revise Manuscript — Share with Community

Update manuscript — Share with Community

For a comparison of services in this area:
https://asapbio.org/comparing-review-services

Independent peer review before journal submission

SUBMIT

See the latest Refereed Preprints
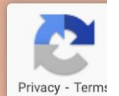
Preprint peer review/ Overlay journals

Vs

Post-publication peer review

Assessing the quality of peer review

An explosion in preprinting, accelerated by COVID-19, provides an opportunity to rigorously examine peer review

Fraser et al. 2020; Polka et al. 2021 bioRxiv

What happens after acceptance?

3 months - 1 year

Researcher

Drafted Manuscript

Submit to Journal

Revise Manuscript

Initial Editorial Decision

Reject

Peer Review

Post-Review Editorial Decision

Reject

Accept

Production

Share with Community

Production editors: What do they do?

Editors

Scientific editors

Editor in chief

Associate/academic editor
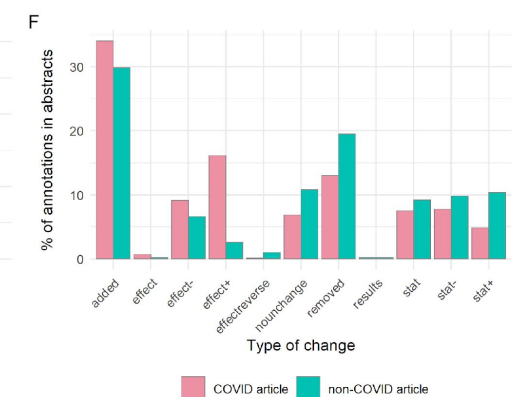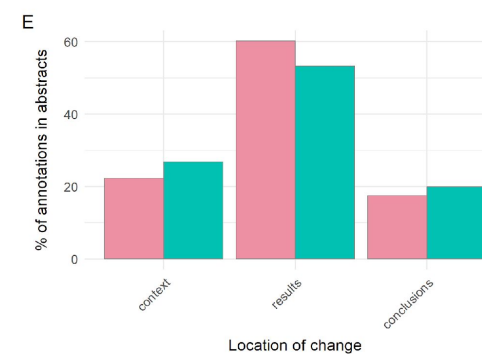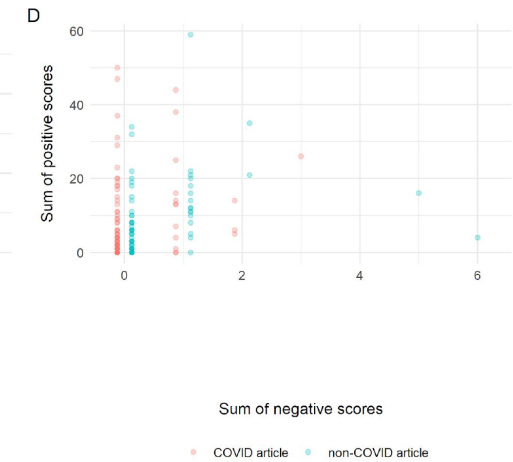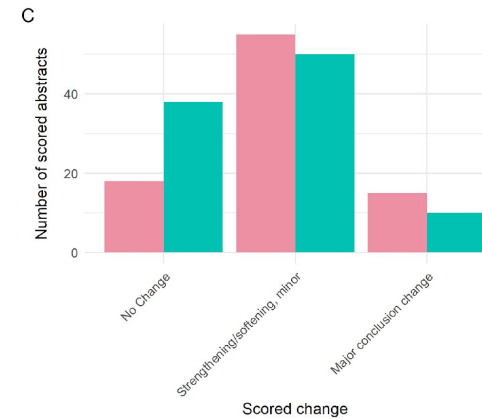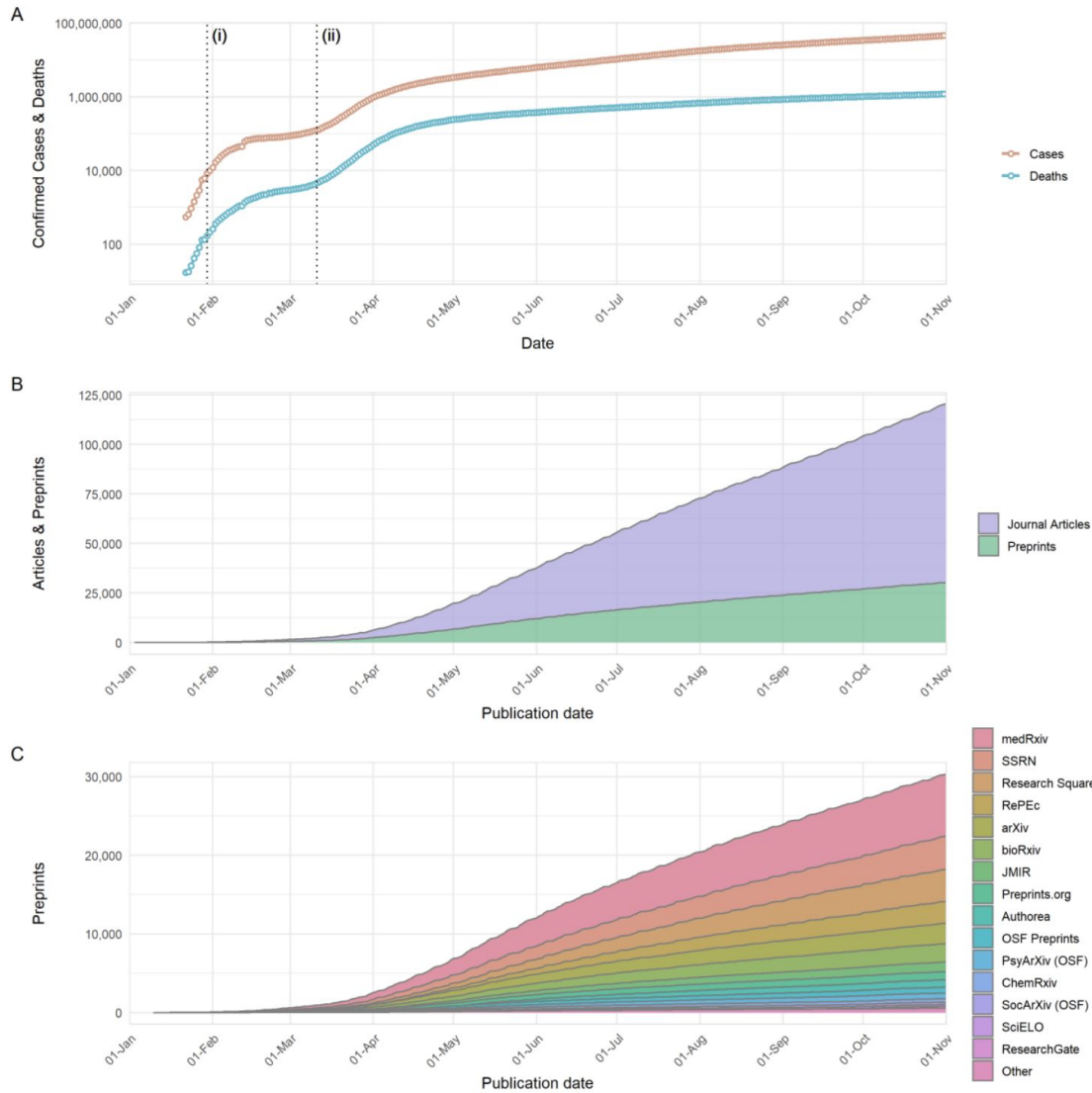
Before acceptance

Production editors

Developmental editor

Content editor

Copyeditor

Proofreader

Post acceptance

Ensure compliance with language requirements and style guidelines such as AMA and APA
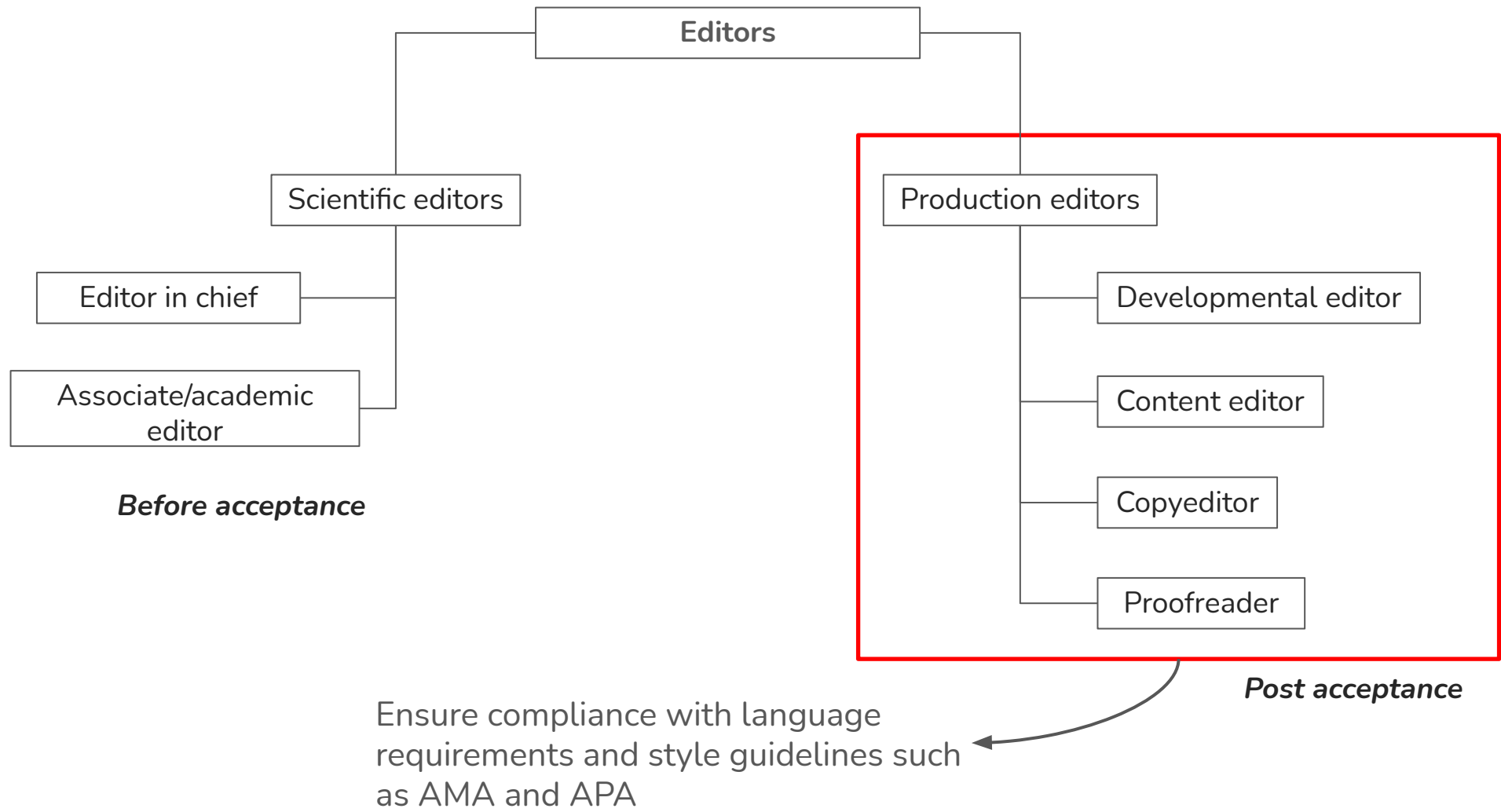
What happens after acceptance?

Once the Scientific Editor reaches a decision for acceptance, the manuscript is transferred to the **Production Editors** who will take steps to prepare the files for publication:

Document proof
 i. copyediting
 ii. compliance with style & format requirements
 iii. check and enhance artwork quality
 iv. author proofing - the author may be sent a draft of the article for checking

Production Editors

Language and style editing: why bother?

The village blacksmith finally found an apprentice willing to work hard at a low pay for long hours.

When I take the shoe out of the fire, I'll lay it on the anvil; and when I nod my head, you hit it with this hammer.

The apprentice did exactly as he was told. Now he is the village blacksmith.

What happens after acceptance?

During production, the journal will also:

- **Invoice** the author at this stage if there are any publication fees e.g.
  - Article-processing charges for Open Access journals
  - Any fees for figures or other services

- Produce the **final version of the journal article** (Version of Record)
  - Assign a DOI
  - Add metadata and identifiers to the article
  - Convert the manuscript to XML
  - If the journal has print issues, assign pagination

Upon publication the journal will:
- Make the article available on the journal website (PDF, HTML formats) and in print
- Submit the article to indexing services such as PubMed, EuropePMC, Google Scholar etc
- The editorial team may promote the article to the readers of the journal via editor highlights, press releases, social media

🕐 *The production stage can take from 10 days to several months, depending on whether the journal publishes continuously or per issue, and whether there is print publication involved*

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Exercise #1

You are a scientific editor who just received a new submission, where the author has also posted a preprint.

What steps would you take to decide whether to send the paper to review?

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Exercise #2

Let's peer review!

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General resources

A brief history of peer review
https://blog.f1000.com/2020/01/31/a-brief-history-of-peer-review/
https://www.stm-assoc.org/2015_03_04_STM_journal_at_350_Mabe.pdf
https://catalogues.royalsociety.org/CalmView/Record.aspx?src=Catalog&id=RR

The birth of modern peer review
https://blogs.scientificamerican.com/information-culture/the-birth-of-modern-peer-review/

Ugly side of peer review
https://www.elsevier.com/connect/editors-update/when-reviewing-goes-wrong-the-ugly-side-of-peer-review

Peer review and preprints
https://blogs.biomedcentral.com/bmcblog/2017/05/05/the-history-of-peer-review-and-looking-forward-to-preprints-in-biomedicine/

Bias in peer review
https://asistdl.onlinelibrary.wiley.com/doi/full/10.1002/asi.22784?casa_token=nEayy_-NY2AAAAAA%3A1qkxK1uESg0wKtAr-0ltOEboMDYQbriBXeyp6BvBkEINzSr-rG4yVMvEFWpu2lmp72NaN-T7hoJV0HI

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Resources Cont'd

The Editorial Process
- https://www.councilscienceeditors.org/resource-library/editorial-policies/white-paper-on-publication-ethics/
- https://www.elsevier.com/__data/assets/pdf_file/0005/95117/SC_FAQ-Role-of-an-Editor-22092014.pdf
- http://publicationethics.org/files/Code_of_conduct_for_journal_editors_Mar11.pdf
- https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-017-0927-0
- https://theplosblog.plos.org/2019/11/why-engage-with-preprints/