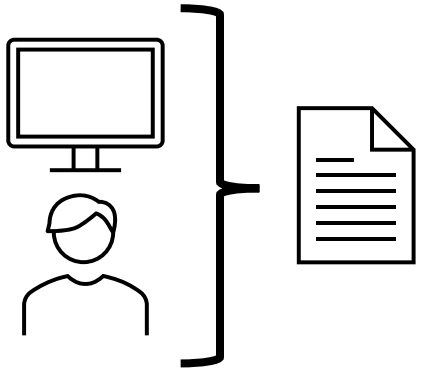
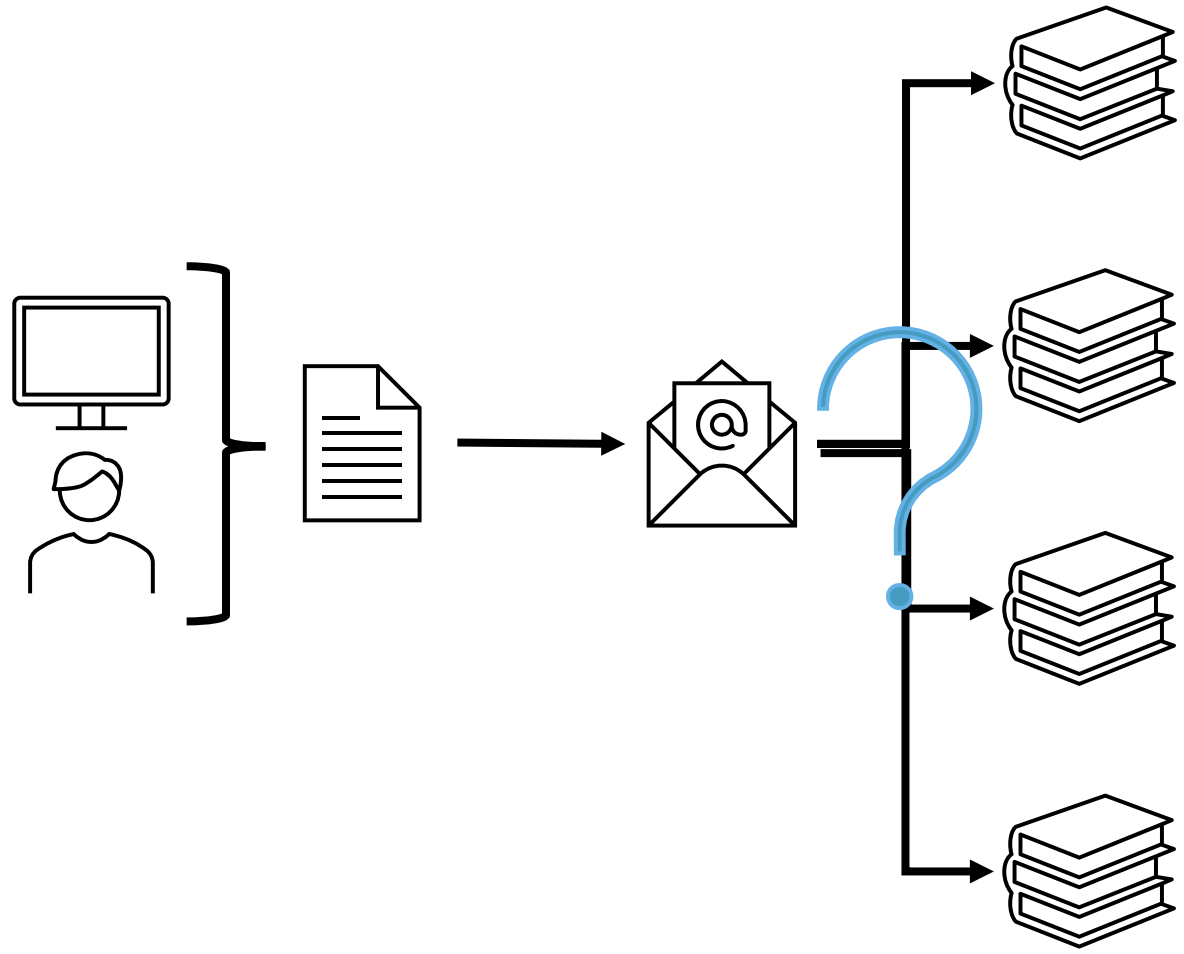
ACADEMIC PUBLISHING

IMAGINE…



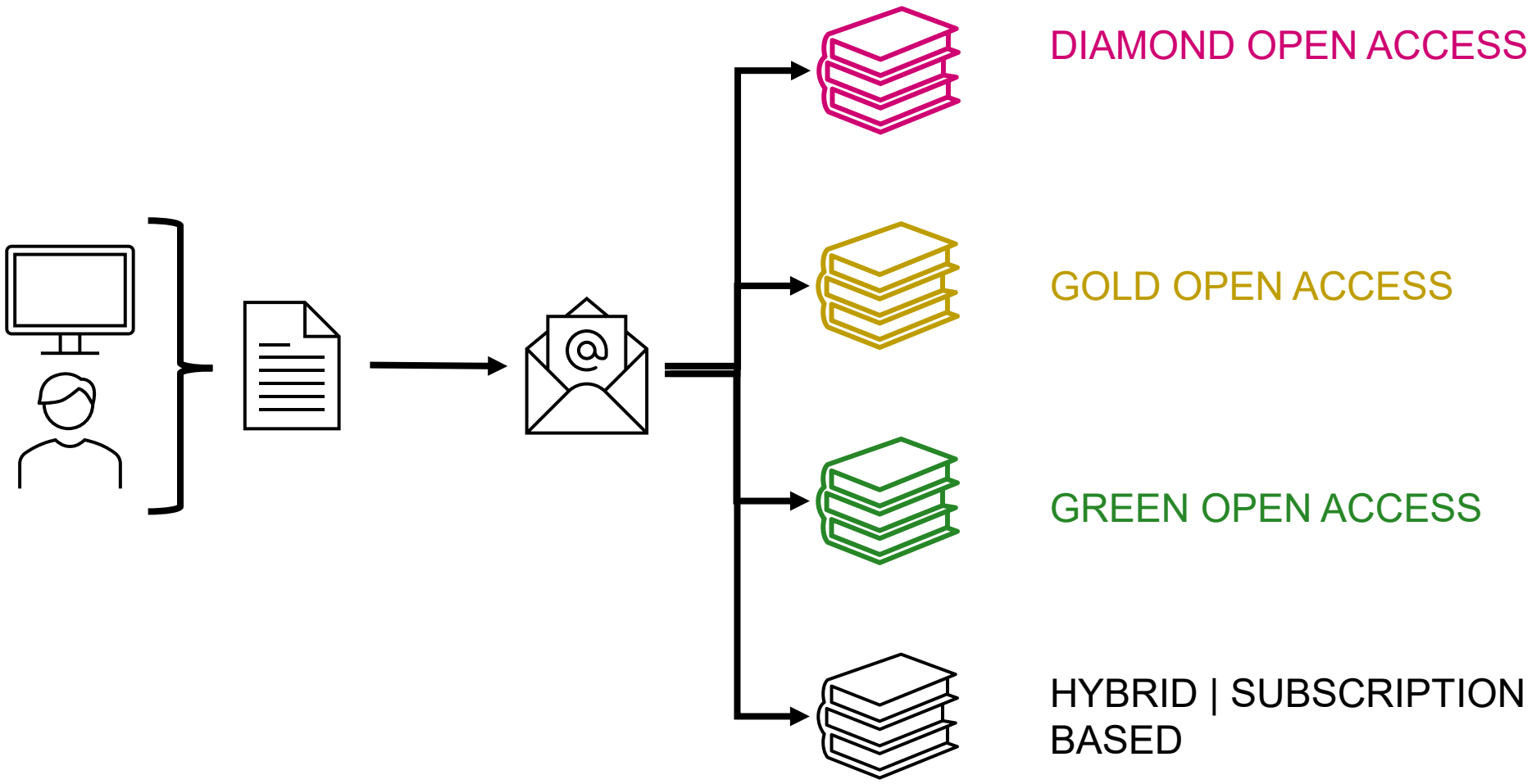
IMAGINE…



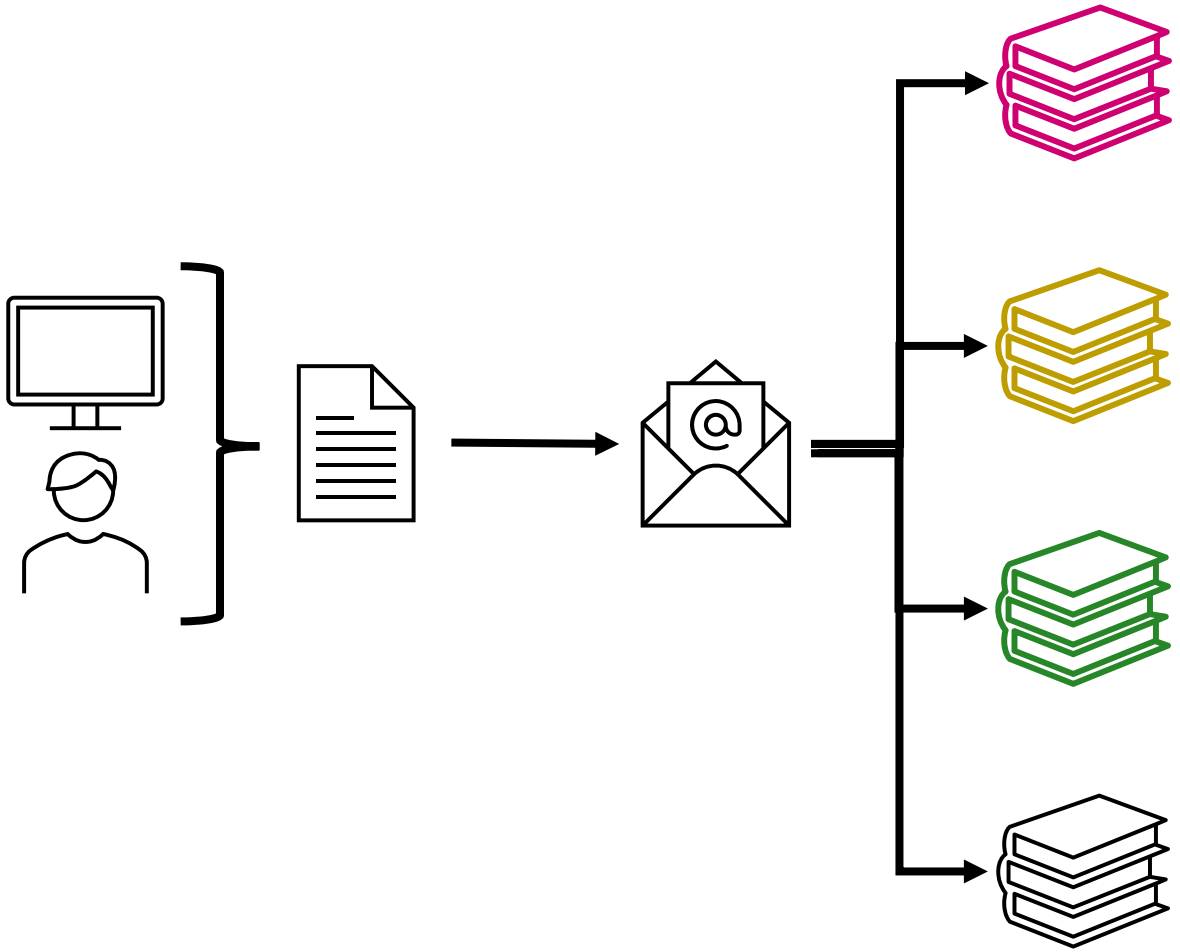
LEARNING OBJECTIVES

- After this lecture, you should be able to:
  - Explain which types of (open access) academic publications exists
  - Explain the value of new publishing practices compared with current practices

CHOOSING A SCIENTIFIC JOURNAL



CHOOSING A SCIENTIFIC JOURNAL



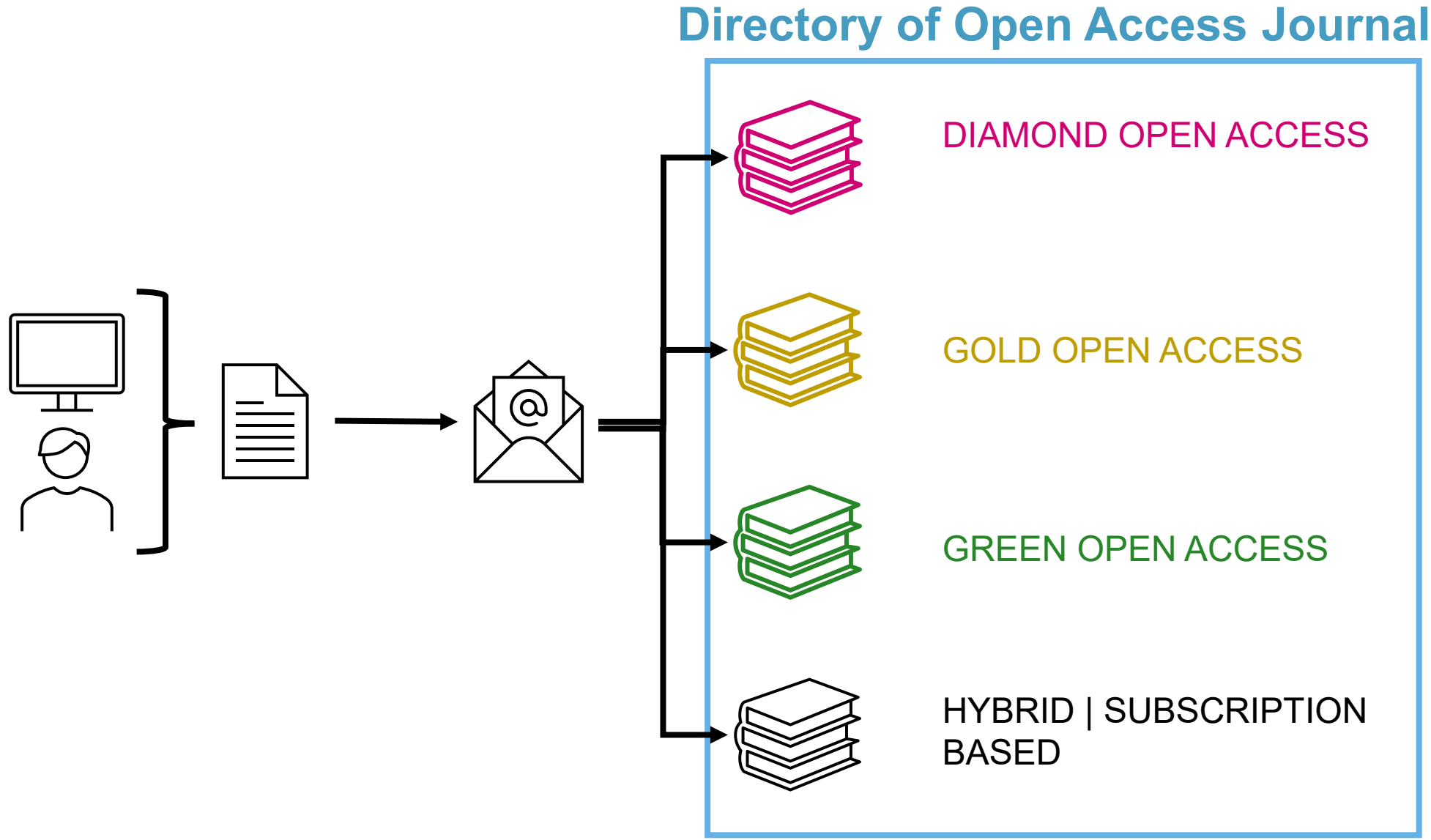
No processing fees for authors
Direct free access for readers

Article Processing Charges for authors
Direct free access for readers

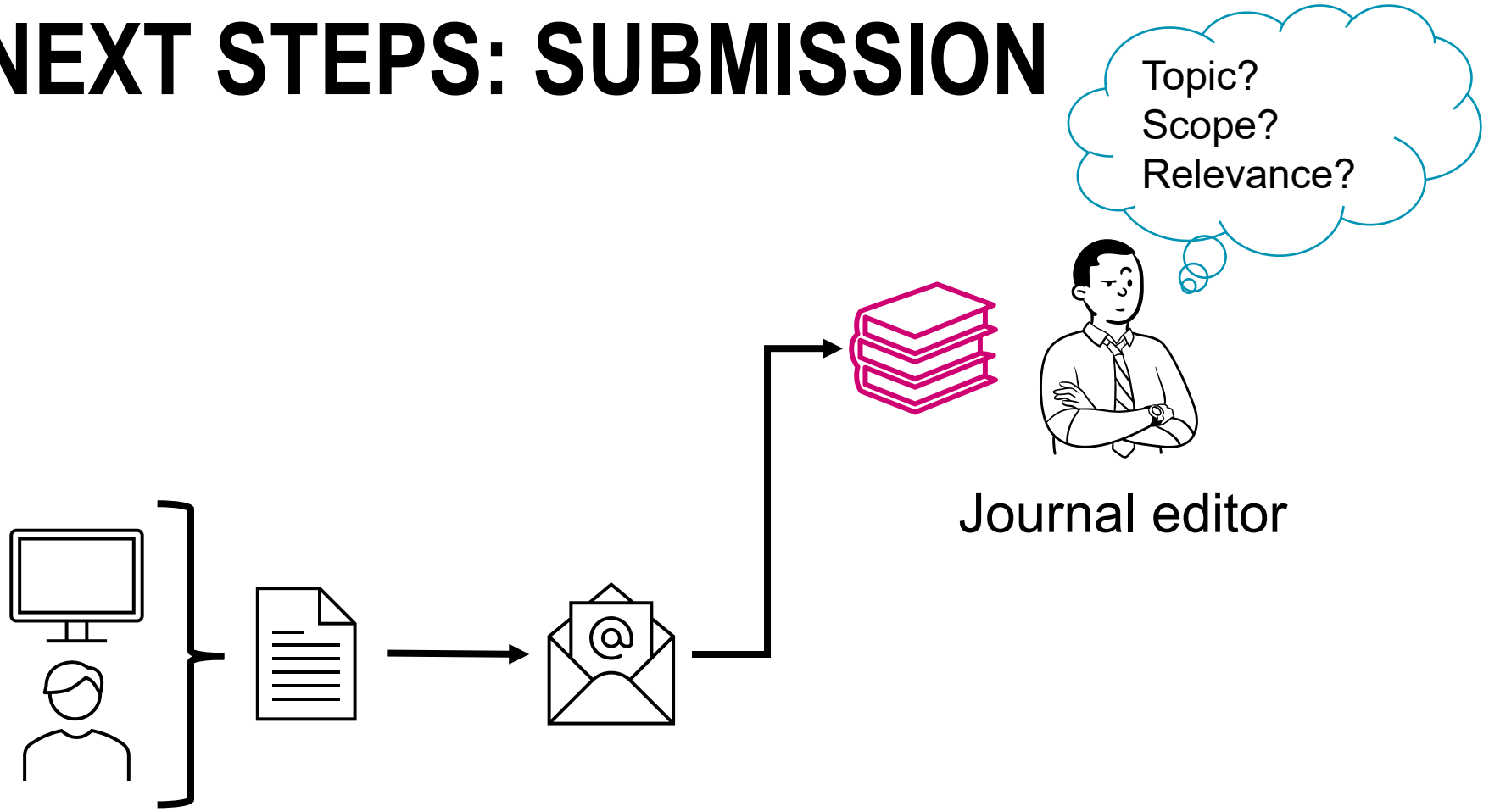
Publication in a subscription-based journal
Self-archiving in an open repository

Combination of GOLD OPEN ACCESS &
Subscription-based

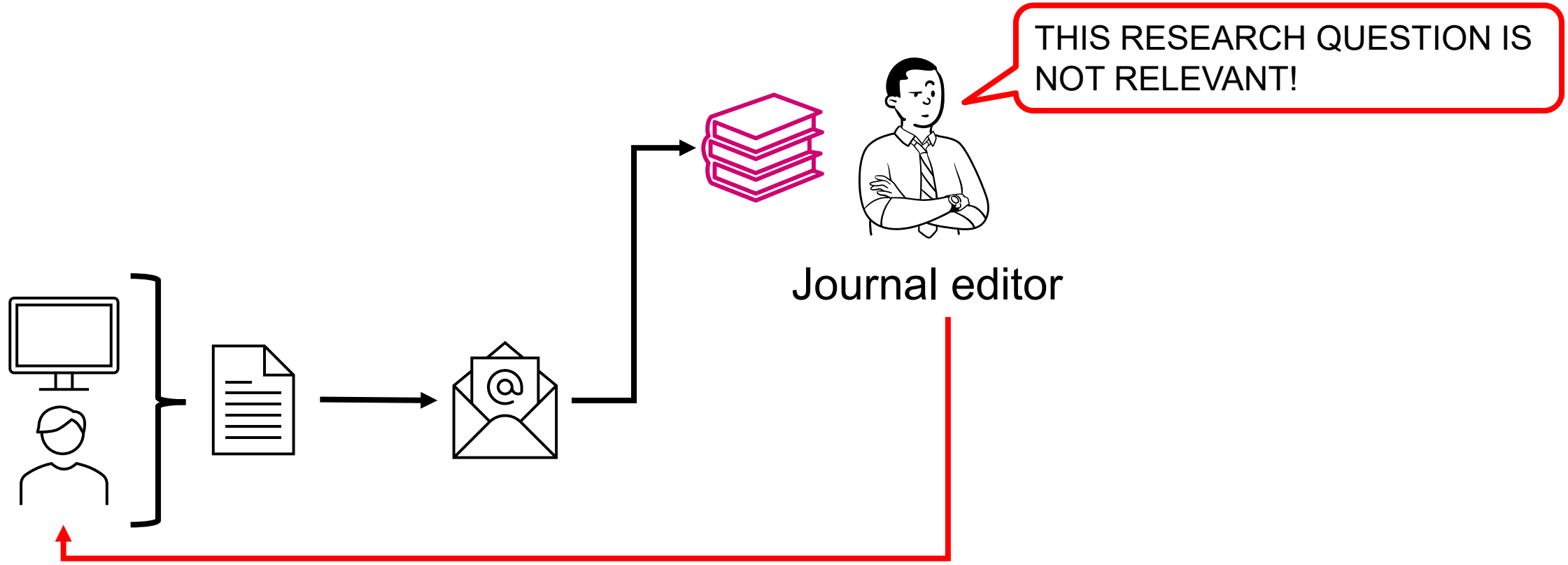
CHOOSING A SCIENTIFIC JOURNAL



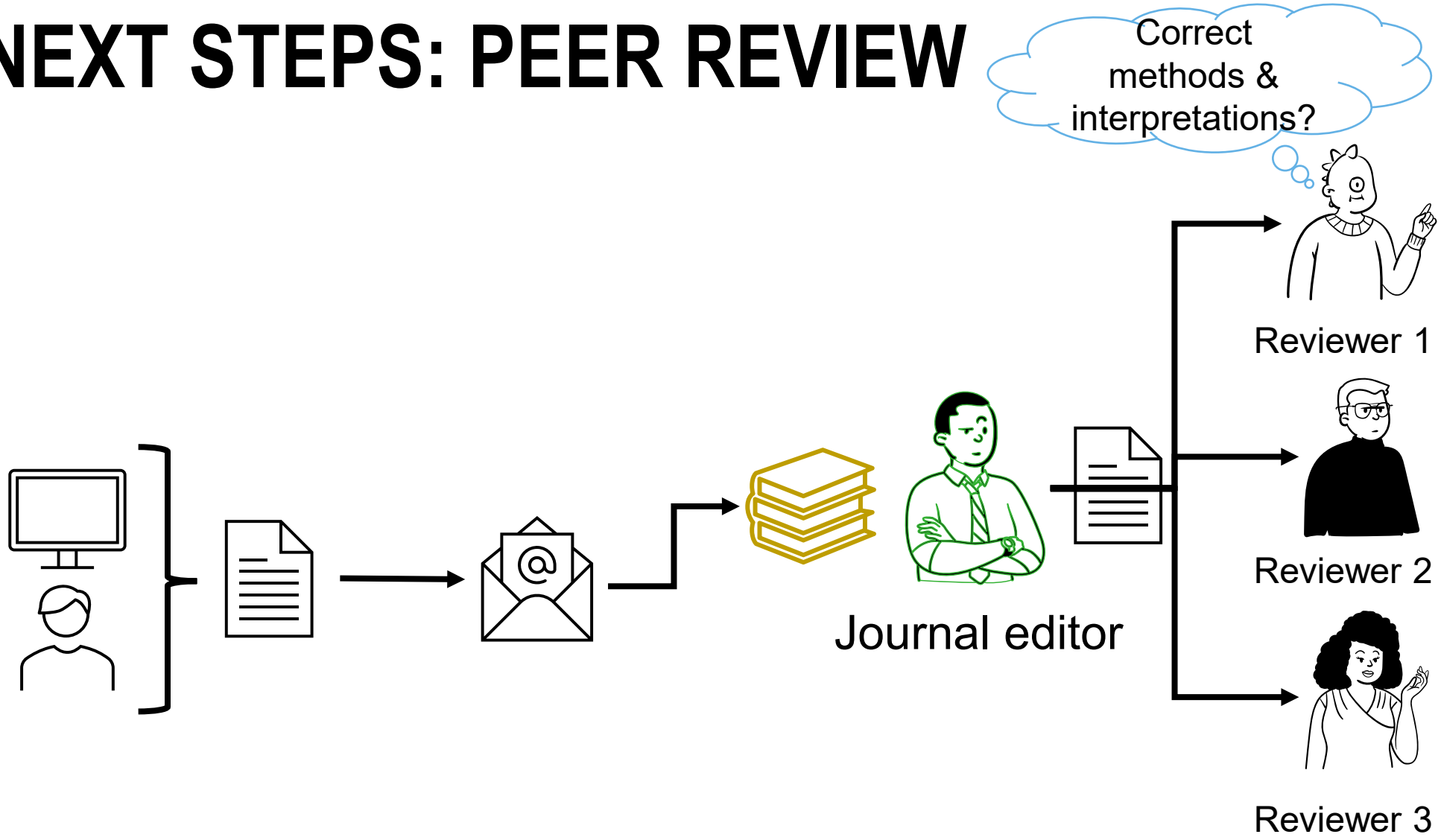
NEXT STEPS: SUBMISSION



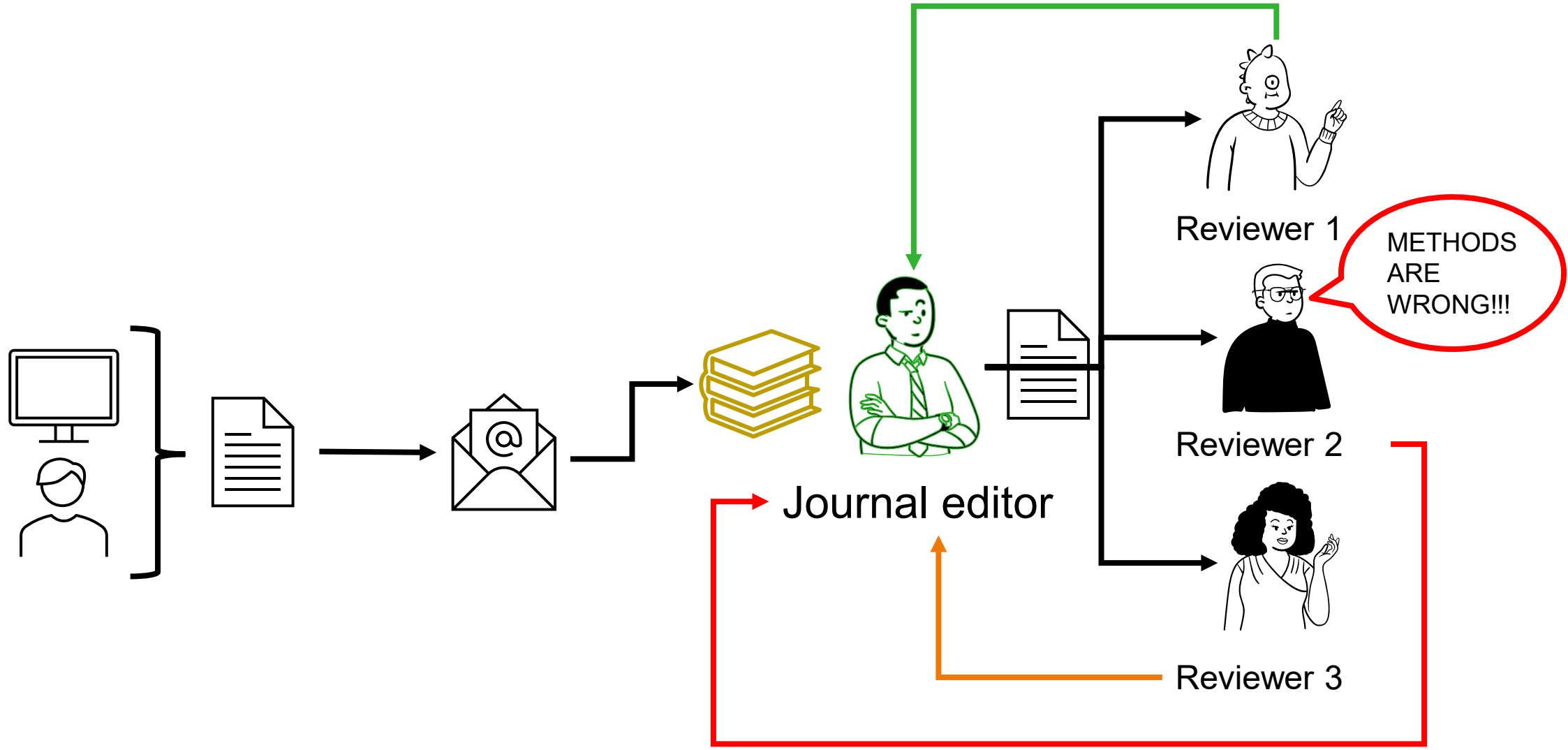
NEXT STEPS: NOT CONSIDERED



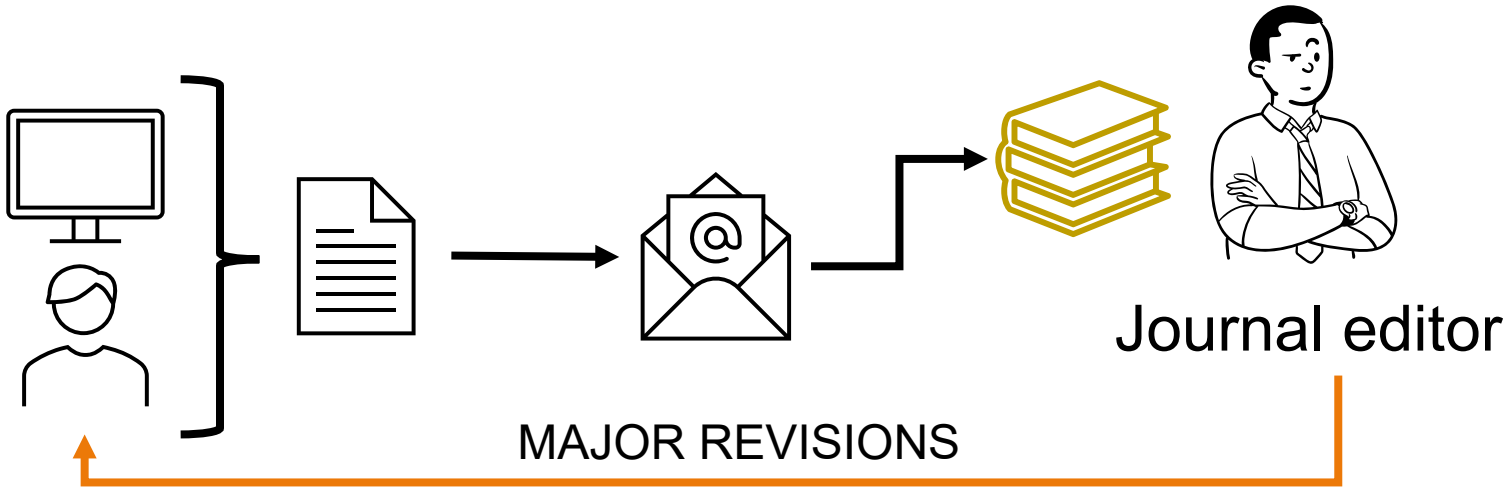
NEXT STEPS: PEER REVIEW



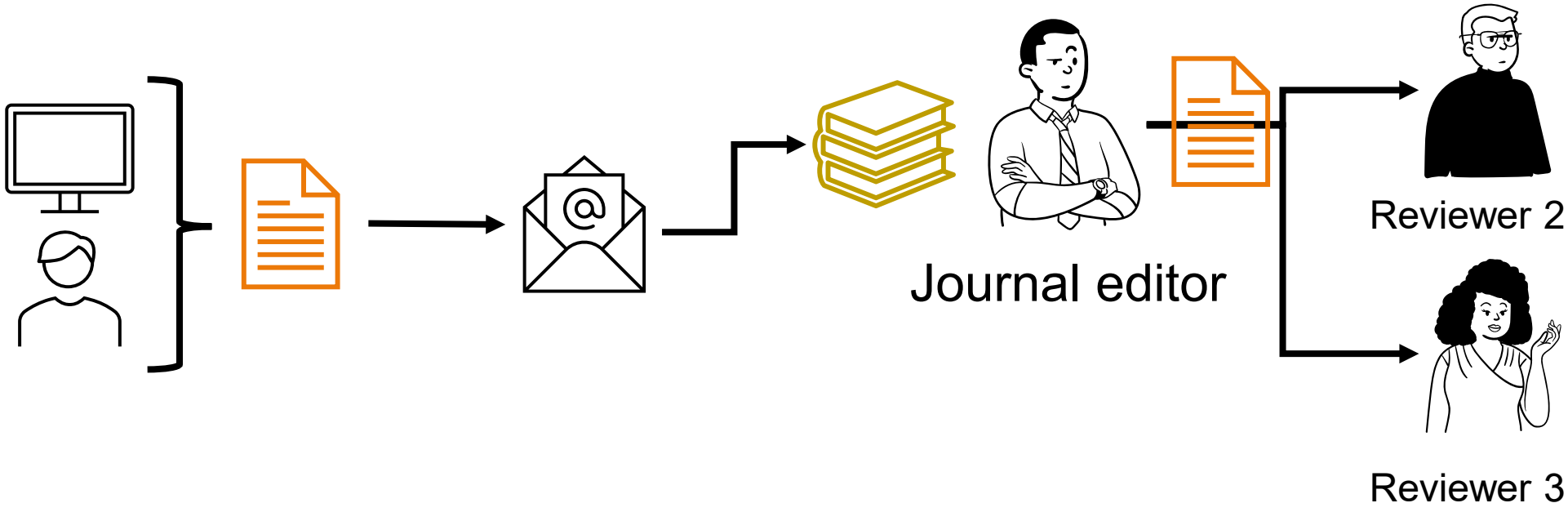
NEXT STEPS: PEER REVIEW



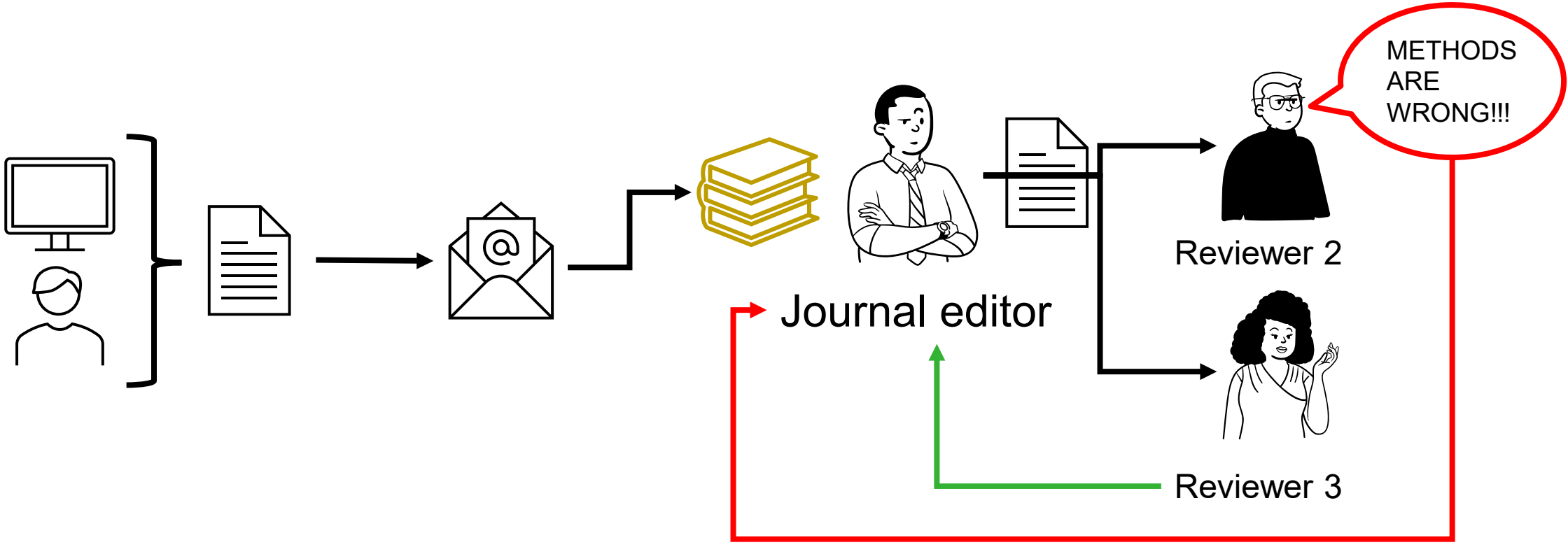
NEXT STEPS: DECISION



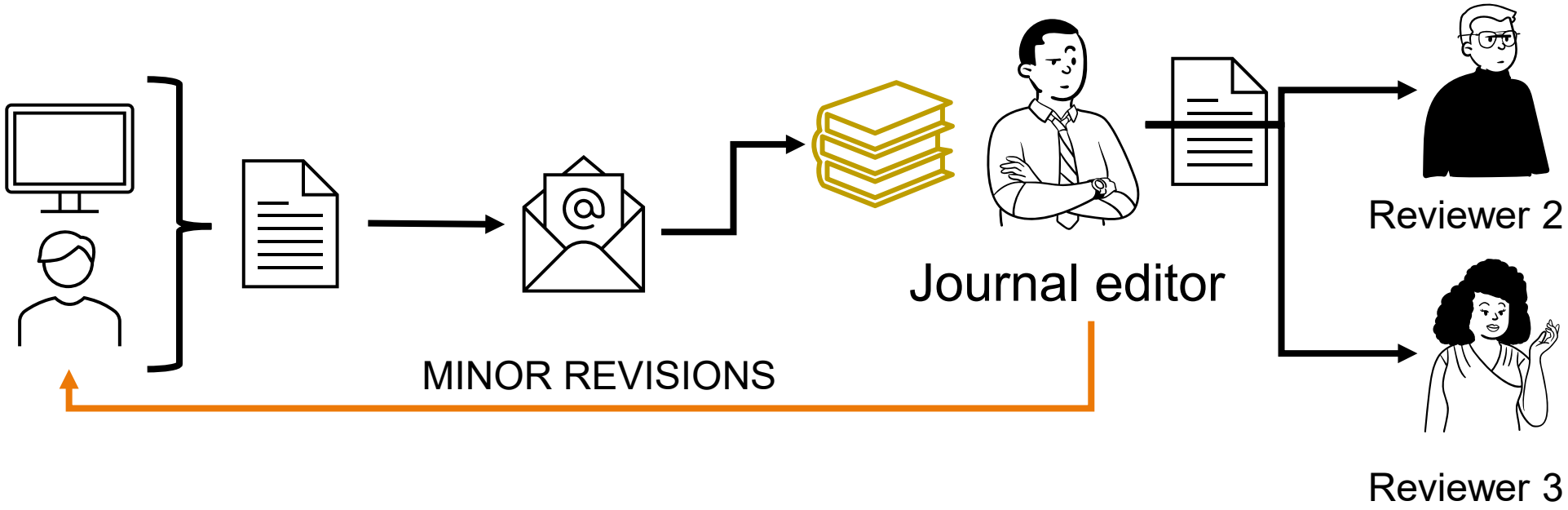
NEXT STEPS: REVISIONS & RESUBMISSION



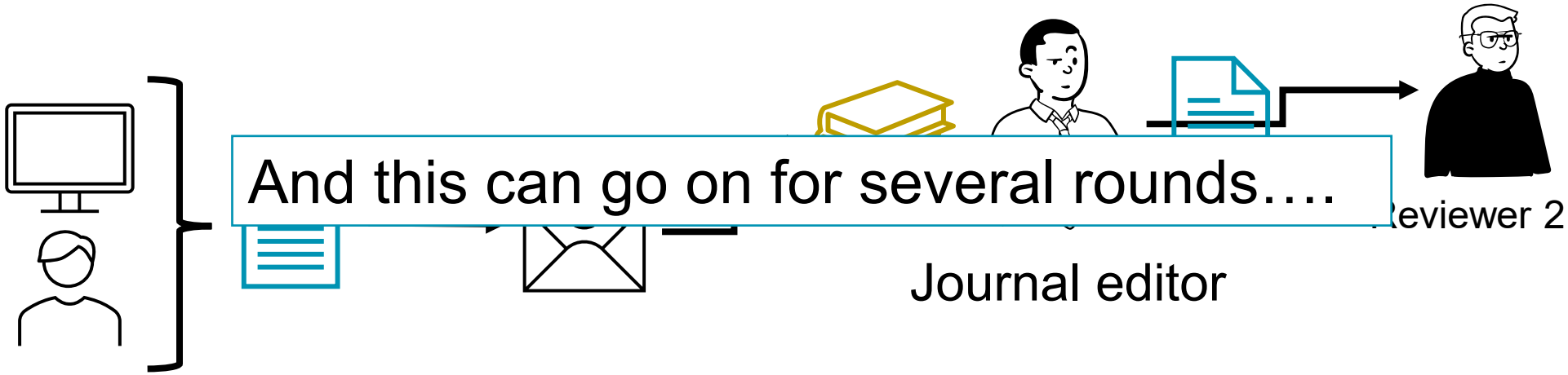
NEXT STEPS: PEER REVIEW 2



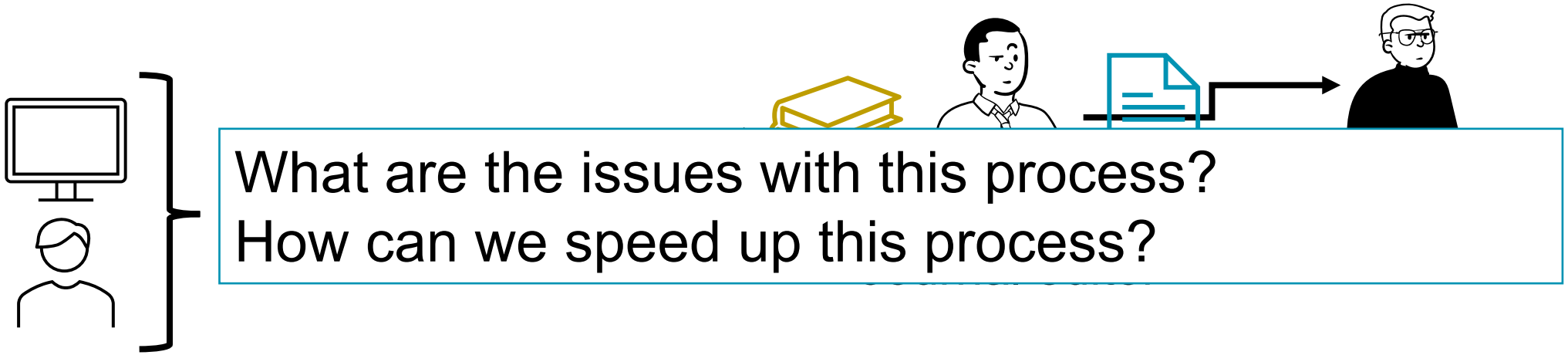
NEXT STEPS: REVISIONS



NEXT STEPS: REVISIONS & RESUBMISSION



NEXT STEPS: REVISIONS & RESUBMISSION



What are the issues with this process?
How can we speed up this process?

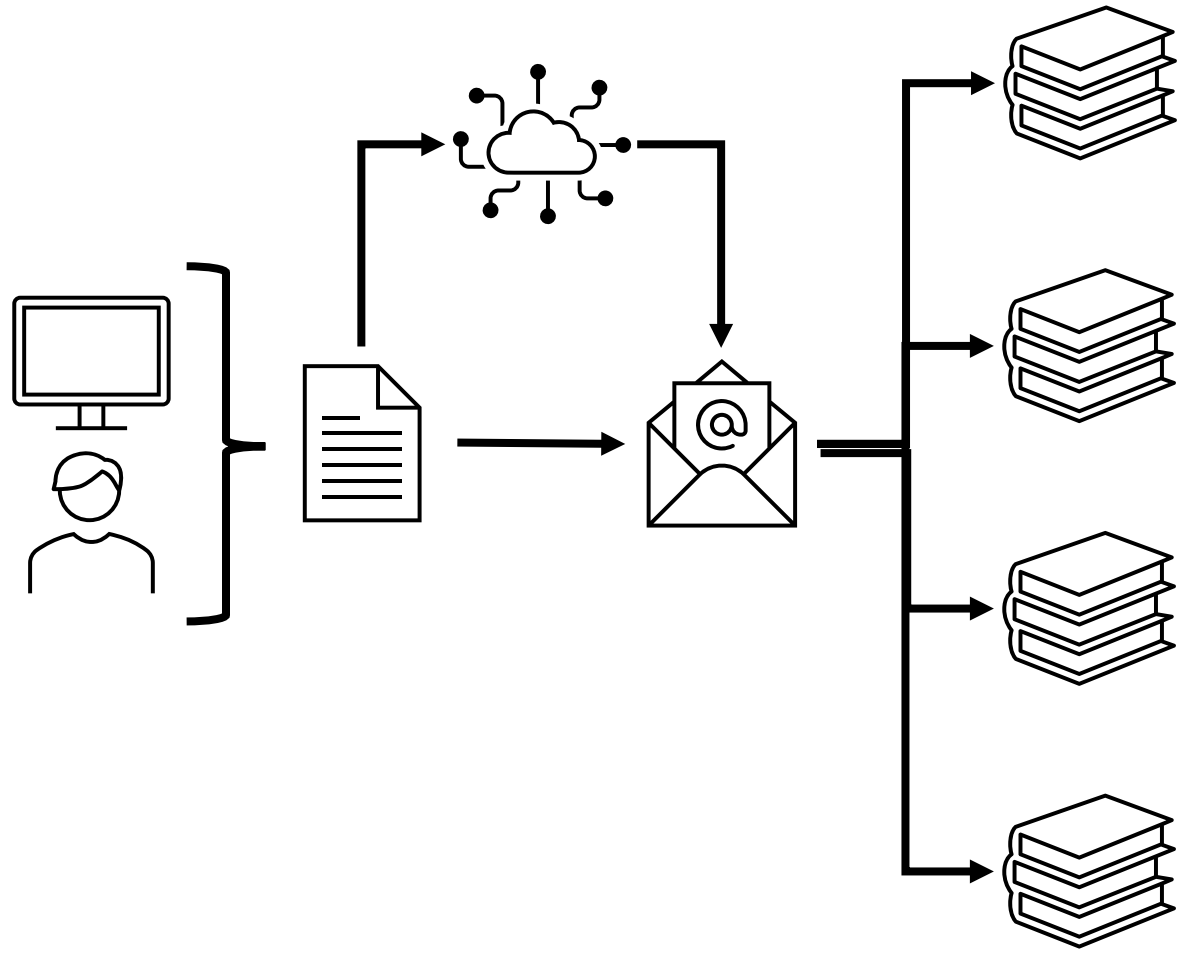
ISSUES WITH THIS PUBLISHING / REVIEW PROCESS

1. It is time consuming
2. If there are issues with the methods or data collection, these most often cannot be fixed.
   - Author / researcher receives feedback late in the research process!
3. Are all outcomes of the study reported (and not only the positive ones)?
   - Selective reporting
4. Was there a change in methods between study conceptualization and analysis? If yes, what are the reasons?
   - p-hacking: tuning the data analysis to achieve significant p-values
   - HARKing: Hypothesising After Results are Known
5. Positive results have a higher chance of being published
6. Often peer reviews are not published

HOW TO ADDRESS SOME OF THESE ISSUES?

- Preprints
- Pre-registration
- Registered reports

PREPRINTS



PREPRINTS

- Advantages
  - Manuscript is directly and freely available for all
  - Speed up the publication
  - Manuscript is findable and citable
  - Open peer review / comments
- Disadvantages
  - No peer review before publication
  - Does not prevent selective reporting

STUDY PRE-REGISTRATION

"Preregistration of an analysis plan is committing to analytic steps without advance knowledge of the research outcomes. That commitment is usually accomplished by posting the analysis plan to an independent registry[…]" Nosek et al. 2018

- After study design but **before** data collection
  - Published or under embargo
- Prevents:
  - ✓Selective reporting
  - ✓p-hacking: tuning the data analysis to achieve significant p-values
  - ✓HARKing: Hypothesising After Results are Known
- E.g. https://osf.io/prereg/ or https://aspredicted.org/

BUT…

- Authors / researchers still receive feedback late in the research process
- You have to follow the pre-registration analysis plan…
  - Otherwise, report deviations! → Increase transparency!
- Publication bias can still occur
  - There is no link between preregistration and scientific journals
- Pre-registration can be incomplete
  - E.g. no thorough analysis plan, contains only a part of the final analyses, etc.

HOW TO ADDRESS SOME OF THESE ISSUES? REGISTERED-REPORTS

- Reports containing introduction and methods section (sometimes result section without actual results)
- Sent for peer-review **before** data collection
- (In principle) acceptance based on this first peer-review

Center for Open Science: https://www.cos.io/initiatives/registered-reports

REGISTERED REPORTS
SOME REMARKS

- Time consuming before starting study
  - Timing is important (take funding timelines into account)!
  - But may shorten stage 2 peer-review
- Not widespread among all disciplines
- Justify any deviations from the original methods
  - Increased transparency
- Addresses publication bias & selective reporting!

PREREGISTRATION OF HEALTH ECONOMIC ANALYSES?

Methodology

Content of Health Economics Analysis Plans (HEAPs) for Trial-Based Economic Evaluations: Expert Delphi Consensus Survey

Joanna C. Thorn, PhD,* Charlotte F. Davies, PhD,* Sara T. Brookes, PhD, Sian M. Noble, PhD, Melina Dritsaki, PhD, Ewan Gray, PhD, Dyfrig A. Hughes, PhD, Borislava Mihaylova, DPhil, Stavros Petrou, PhD, Colin Ridyard, PhD, Tracey Sach, PhD, Edward C.F. Wilson, PhD, Sarah Wordsworth, PhD, William Hollingworth, PhD

- Contains 58 items
- Focus on trials, but contains several items concerning health economic modelling
- Uptake?
  - 2 examples on Zenodo
  - Approximately 1/3 of clinical trial units in the UK always write HEAPs for RCTs (Dritsaki et al. 2017)

WRAP UP

- There are multiple ways to achieve open-access publishing
  - Mind the processing charge!
- Current peer-review and publishing practices are inefficient:
  - Feedback provided too late to researchers
  - Incentives to “produce” positive results
- Pre-registration & registered reports may address some of these flaws

ANY QUESTION?

RESOURCES

- Center for Open Science: “Registered reports”. Available at: https://www.cos.io/initiatives/registered-reports accessed on 20-01-2023.
- Dritsaki, M., Gray, A., Petrou, S. et al. Current UK Practices on Health Economics Analysis Plans (HEAPs): Are We Using Heaps of Them?. PharmacoEconomics 36, 253–257 (2018). https://doi.org/10.1007/s40273-017-0598-x
- Nosek, Brian A., et al. "The preregistration revolution." Proceedings of the National Academy of Sciences 115.11 (2018): 2600-2606.
- Open Science Community Twente presentation: “The benefits and limitation of preregistration and registered reports”. Available at: https://www.openscience-twente.com/blog3-opensciencekitchen-preregistration/ accessed on 20-01-2023.