



How to successfully write a scientific paper?

Katarzyna Gaca-Zajac, PhD Eng.

Customer Consultant for Central-Eastern Europe



Agenda

- Scholarly publishing and its importance
- Preparation of the manuscript
- Journal choice
- Submission and peer-review
- Publishing data
- Ethical concerns
- Questions and discussion



Origins of scholarly publishing

1439: Gutenberg and moveable type



1580: Founding of the House of Elzevir



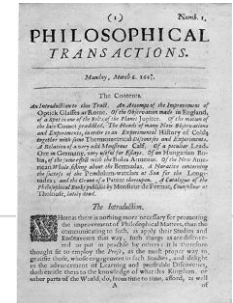
Henry Oldenburg
(1618- 1677)

Founding Editor and
Commercial Publisher of
the first scientific journal



March 6, 1665
Philosophical
Transactions
of the Royal Society

First truly scholarly
journal



ELSEVIER

How to successfully write a scientific paper?

Role of scholarly publishing

Registration

- The timestamp to officially note who submitted scientific results first

Certification

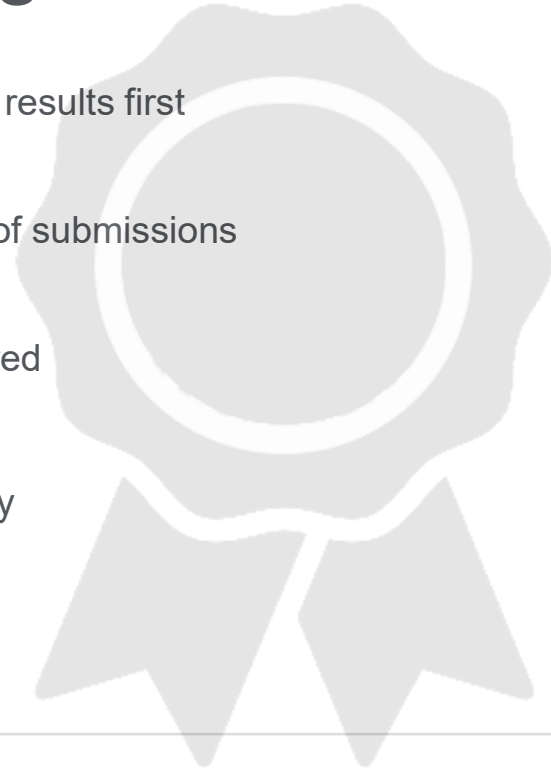
- Perform peer-review to ensure the validity and integrity of submissions

Dissemination

- Provide a medium for discoveries and findings to be shared

Preservation

- Preserving the minutes and record of science for posterity





Preparation of the manuscript



Motivation and preparation are key

- The aim: share important findings with peers to advance science
- Make a reality check: do you really have a story to tell and who would you tell it to?
- Ensure: can you carefully frame your work in context? Does it fit the big picture and contribute to your field?
- Reflect on your data and research: is it complete? Do you trust it? Is it reliable? Did you check it more than twice?
- When planning the manuscript, always think of your readers



Motivation and preparation are key

- Careful planning is essential
- Consider potential deadlines, make a reality check whether you can meet these without a negative impact on the quality of your work
- Consider and reflect upon the structure of your paper: what is typically expected, what you would like to include and where.
- Ask your colleagues or friends for input!
- Revise, revise, revise!



Read before you write

- Reading is the best way to improve your own writing skills.
- Literature study should allow you and readers to put your findings into context.
- Only careful literature review allows to evaluate and showcase the scope and impact of your research.
- Being selective in referencing previous research is acceptable only if you are selecting relevant papers, painting the background for your research.
- Rejecting and avoiding citing previous studies with contradictory findings is unethical and hampers scientific progress and may lead to financial losses.
- If you need to refer to someone else's work, always acknowledge their authorship - cite it



Simplicity and consistency

- A scientific article is not a novel (but should be easy to read)
- Avoid sentences which leave room for interpretation: the reader should understand, not interpret your findings.
- When using abbreviations or uncommon terms, ensure these are clearly explained.
- Ask for feedback - a colleague from a related field can check your paper for clarity
- Average length of a sentence in a good article in STM is 12-15 words.
- Avoid using complex sentences and make proper use of punctuation.
- Pay special attention to the title, abstract and keywords
- Avoid using definite words like *never*, *all*, *everyone*, *always* etc.



Never underestimate the power of co-operation

- No man is an island: we all need input from colleagues and fellow researchers to gain a wider perspective and reflect upon our work.
- Senior colleagues can help in interpreting the results and in writing conclusions.
- Junior colleagues can help in making the paper coherent and logical.
- Welcome feedback and constructive criticism.
- Authorship is reserved for those who worked on the manuscript. Others can be thanked in Acknowledgements.





Journal choice



How do I choose the right journal?

Aim to reach the intended audience for your work

Shortlist a handful of candidate journals

- Check your reference list
- Supervisor and colleagues can provide good suggestions
- Search in databases, check quality indicators

And investigate them:

- ? Aims & Scope
- ? Accepted types of articles
- ? Peer review process (single blind, double blind, open)
- ? Readership, publisher
- ? Ethics statement
- ? Speed of publication
- ? Subscription versus Open Access

How to successfully write a scientific paper?

Golden Rules for using bibliometrics

When used correctly, research metrics together with qualitative input give a balanced, multi-dimensional view for decision-making

Always use **both qualitative** and **quantitative** input into your decisions

Always use **more than one** research metric as the **quantitative** input



How to successfully write a scientific paper?

Bibliometric indicators: a basket of metrics



Are there any tools available?

Scientific databases: Scopus

<http://journalfinder.elsevier.com/>

ELSEVIER

Type here to search on Elsevier.com



Advanced search

Follow us:



Help & Contact

Journals & books

Solutions

Authors, editors & reviewers

About Elsevier

Community

Store

For Authors

Journal authors' home

Author Rights

Ethics

Agreements

Open access

Author services

Authors' Update

Early career researchers

Book authors' home

Elsevier for authors

How to publish in an Elsevier journal

Every year, we accept and publish more than 250,000 journal articles. Publishing in an Elsevier journal starts with finding the right journal for your paper. If you already know which journal, you can enter the title directly in the search box below. Alternatively, click on the 'Start matching' button to find a suitable journal based on the abstract of your article.

Publishing
process

Find a journal

Prepare your
paper

Submit paper

Check status

Match your abstract to a journal

Search for a journal by name



Hc



Submission and peer-review



Submission

- Choose only one journal – multiple submissions are forbidden and may result in plagiarism alert.
- Submit only when all authors approve the manuscript and agree to publish in a given journal – it is a joint decision.
- Carefully read and adhere to the author guidelines – many desk rejections are caused by not observing these.
- Submit the paper according to the journal instructions.
- Editorial times vary, as does the speed of the peer review.
- If in any doubt, reach out to the handling editor assigned to your manuscript.



The importance of...the cover letter

- Cover letter accompanies a manuscript submitted to the journal.
- The letter should explain what the paper is about and what is its value, as well as what is your motivation behind journal choice.
- Mandatory statements:
 - Manuscript not under review elsewhere and not yet published as a whole or in part
 - All authors approve submission and you're submitting the final draft
 - No conflict of interest to report OR clearly report the conflict of interest
- Pay attention to grammar and spelling – messy cover letters lead to desk rejections.



Purpose of peer review

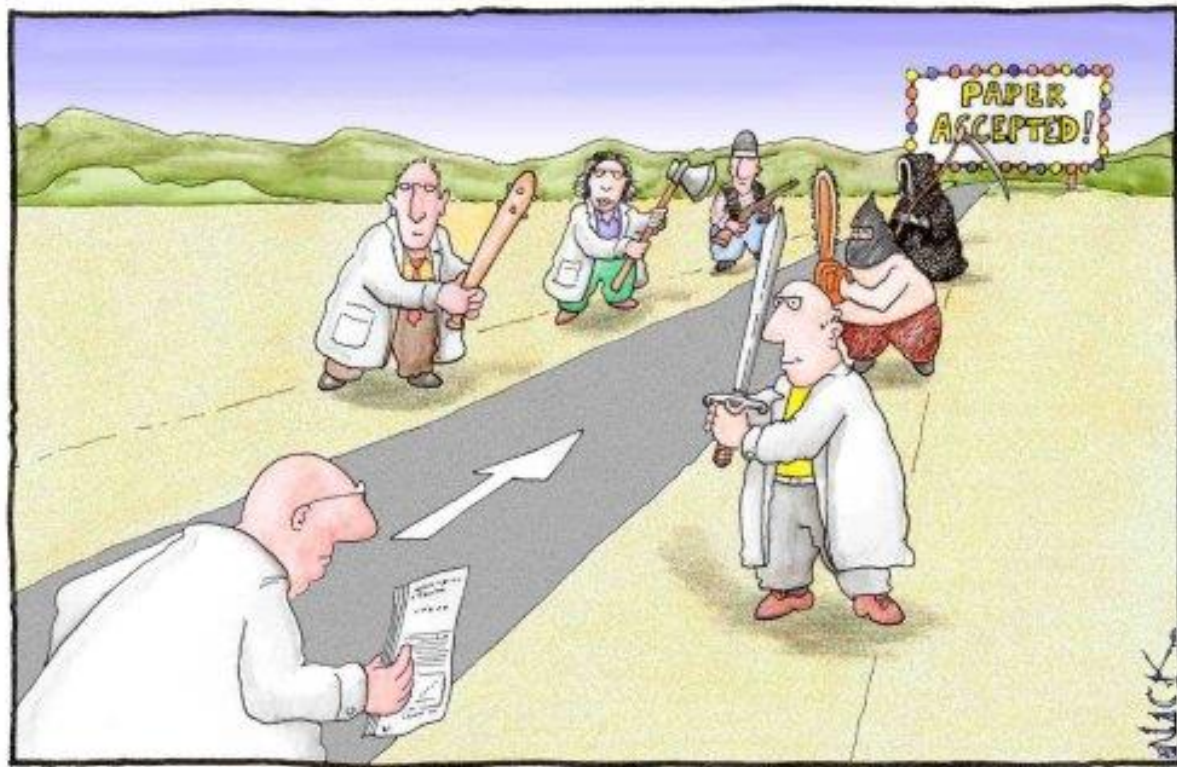
- Helps to **determine** the **quality, validity, significance**, and **originality** of research
- Helps to **improve** the **quality** of papers
- **Publishers** are **outside** the academic process and are not prone to prejudice or favour
- **Publishers facilitate the review** process by online review systems and providing tools to help Editors and Reviewers



Types of peer-review

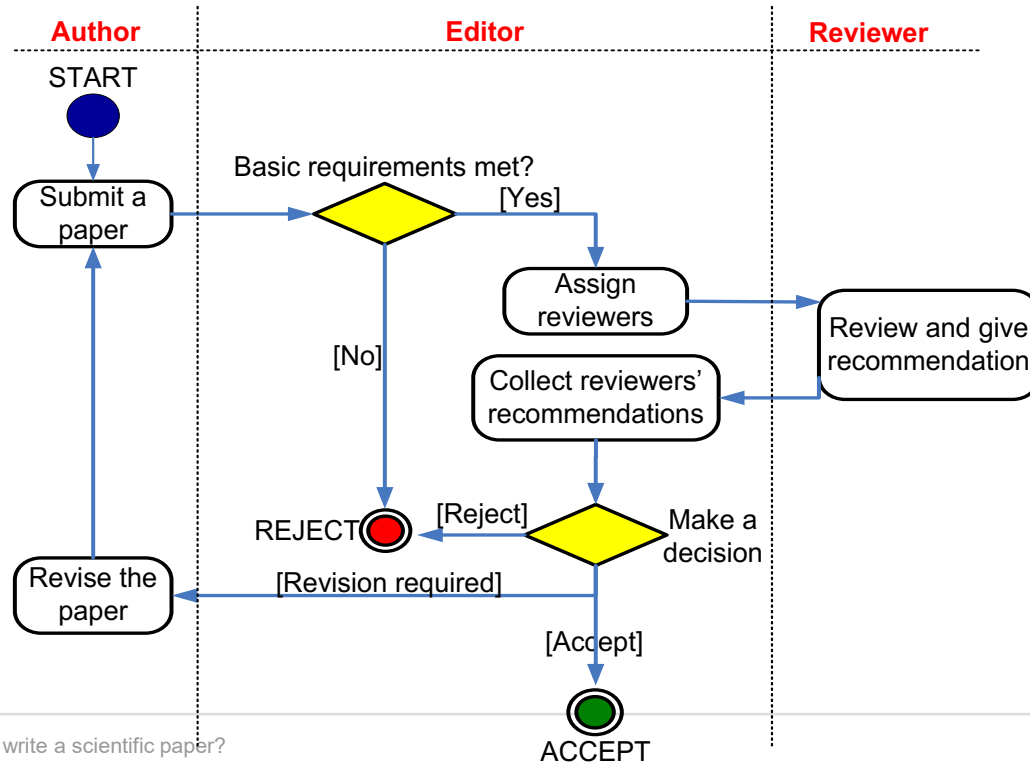
- **Single blind**: reviewer sees the author's name
- **Double blind**: nobody sees any names
- **Open**:
 - with reviewer name disclosed to author alone
 - with reviewer name published
 - with reviewer report published anonymously
 - with reviewer report and name published
 - reviewed both pre- and post publication
 - reviewed only post-publication





Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

What actually happens?



Example of a reviewer checklist

Reviewer's recommendation Accept / Minor Revision / Major Revision / Reject

Overall manuscript rating 1 → 100 (poor → perfect)

- | | | |
|----|---|---------|
| 1. | Is the subject matter suitable for publication in JCR? | Y/N |
| 2. | Is the paper acceptable in its present form? | Y/N |
| 3. | Is the paper better suited for another journal?
<i>If "Yes", which other journal?</i> | Y/N |
| 4. | Does it contain material that might well be omitted? | Y/N |
| 5. | Does it give adequate references to related work? | Y/N |
| 6. | Is the English satisfactory? | Y/N |
| 7. | Is the presentation of the work well organized? | Y/N |
| 8. | Rate the paper using the following scale
(4 = <i>Very good</i> , 3 = <i>Good</i> , 2 = <i>Marginal</i> , 1 = <i>Poor</i>) | |
| | a. Originality | 1 2 3 4 |
| | b. Scientific quality | 1 2 3 4 |
| | c. Significance of findings | 1 2 3 4 |

How to respond to the review?

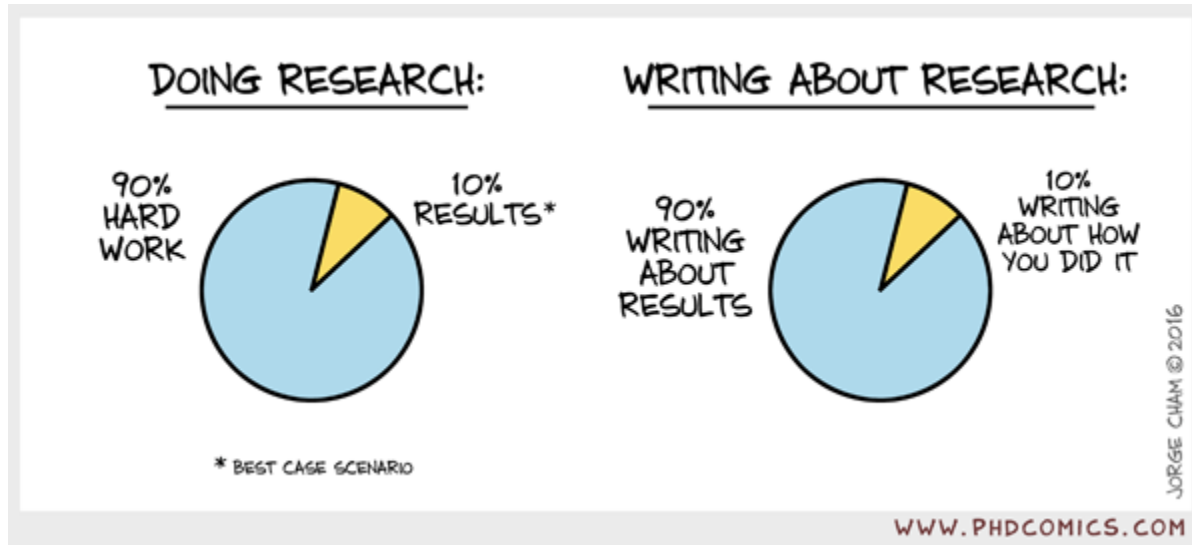
- Understand that the questions the reviewers have are also questions of your readers
- Don't think of it as an obstacle – it is the last chance to improve your paper before publishing
- Be respectful but don't be afraid to disagree with the reviewers
- Always provide evidence or justification if you disagree
- Respond to the review in a clear, organized manner – avoid chaos and emotional tone
- Should you include suggested references...?
- If the review is downright inobjective and/or written in a disrespectful tone, reach out to the handling editor





Publishing data





Source: <http://phdcomics.com/comics.php?f=1887>

Why publishing data is a good practice?

- Much of the collected data does not make it into the final version of the paper or book. Much data is stored „for sometime later” and never sees the daylight.
- Publishing experimental data limits the risk of accepting and publishing fraudulent papers which in turn cause severe losses to the academic and scientific communities.
- Benefits of publishing data:
 - Savings!
 - Acceleration of scientific progress
 - Validation and verification of submitted or published work
 - Opening data to further analyses and meta-analyses
 - Protection and preservation of accumulated data
 - Authors get recognition by means of citations



Publishing data: how?

- Use appropriate repositories, like Mendeley Data:
 - Free of charge
 - Each dataset gets a DOI = is citable!
 - Perpetual copy held at Amazon servers and at DANS
 - Possibility to choose licence and/or embargo period
 - Every new version of the data gets a new DOI – keep track of changes
- Use „Supporting material” option in some journals – not the most convenient option but can be considered sufficient.
- Publish a data paper about the dataset in a dedicated journal – e.g. *Scientific Data* (by Nature Publishing Group).
- Publish on a personal or institutional website – the downside is very limited reach.





Ethical concerns





J. H. Hetherington

Compliments
of the authors



VOLUME 35, NUMBER 21

PHYSICAL REVIEW LETTERS

24 NOVEMBER 1975

Two-, Three-, and Four-Atom Exchange Effects in bcc ^3He

J. H. Hetherington and F. D. C. Willard

Physics Department, Michigan State University, East Lansing, Michigan 48824

(Received 22 September 1975)

We have made mean-field calculations with a Hamiltonian obtained from two-, three-, and four-atom exchange in bcc solid ^3He . We are able to fit the high-temperature experiments as well as the phase diagram of Kummer *et al.* at low temperatures. We find two kinds of antiferromagnetic phases as suggested by Kummer's experiments.

What is unethical behaviour?

- Fabrication of data or cases
- Wilful falsification of data
- Plagiarism
- No ethics approval
- Not admitting missing data
- Ignoring outliers
- No data on side effects
- Gift authorship
- Redundant publication
- Inadequate literature search

**Serious
ethical
violations**

**Questionable
research
practices**



How to successfully write a scientific paper?

What is plagiarism?

“Plagiarism is the appropriation of another person’s **ideas, processes, results, or words** without giving appropriate credit, including those obtained through confidential review of others’ research proposals and manuscripts.”

*Federal Office of Science and
Technology Policy, 1999*



How do publishers detect plagiarism?



- Database of 30+ million articles, from 50,000+ journals, from 400+ publishers
- Software alerts Editors about any similarities between the submitted article and already published articles



How to check if the journal acts ethically?

- The journal must have a clear Ethics and Malpractice Statement in place.
- **The statement must comprehensively describe rights and responsibilities of authors, reviewers and editors, as well as consequences if misconduct is detected or reported.**
- Scopus, as well as some other databases, are open to reporting misconduct of the indexed journals.
- The statement protects you as an author against predatory journals...



Nobody is immune to predatory publishing

Home / News & Opinion

German Scientists Frequently Publish in Predatory Journals

At least 5,000 of the country's researchers have published their work on questionable platforms, often forking over exorbitant fees, a report finds.

Jul 19, 2018

CATHERINE OFFORD

More than 5,000 German scientists have published their work in at least one predatory journal, internet platform, or conference, according to a joint report released today (July 19) by [NDR](#) and several other German news organizations. Predatory publishers exert limited, if any, editorial oversight of the content they produce, the report finds, and may charge authors—many of whom are supported by public funding—exorbitant prices for the opportunity.

Predatory publishers and journals

- Predatory publishers and journals exploit the necessity to communicate science, the idea of Open Access, as well as the speed of publication process.
- Typical warning signs:
 - Fast publication (one or two weeks)
 - „Predicted” or „local” bibliometric parameters
 - Poor language, „suspicious” website
 - Relatively low charges without any justification
 - Scarce information about the publisher, the editorial board and publication process



How to spot a predator?

- Have you or your colleagues ever heard of the journal? Where, when?
- How easily can you find publisher information and contact details?
- Is there a transparent description of the peer-review process?
- Is this journal indexed in professional databases, which you use and trust?
- Are there any charges involved? If yes, then for what, how much and when do you have to pay?
- Who is on the editorial and advisory board? Do you recognise these researchers?
- Is the publisher a member of trade societies or associations?
- How does the journal website look like? How did you find it?



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<https://thinkchecksubmit.org/>



Final remarks



Researcher Academy

Nobody is born a great writer, reviewer or editor: improve your skills

<https://researcheracademy.elsevier.com/>

Researcher Academy

Learn

Career path

Blog



Unlock your research potential

Navigate your research journey with Researcher Academy. Free e-learning modules developed by global experts. Career guidance and advice. Research news on our blog.

Start learning >

RESEARCH
PREPARATION



WRITING
FOR RESEARCH



PUBLICATION
PROCESS



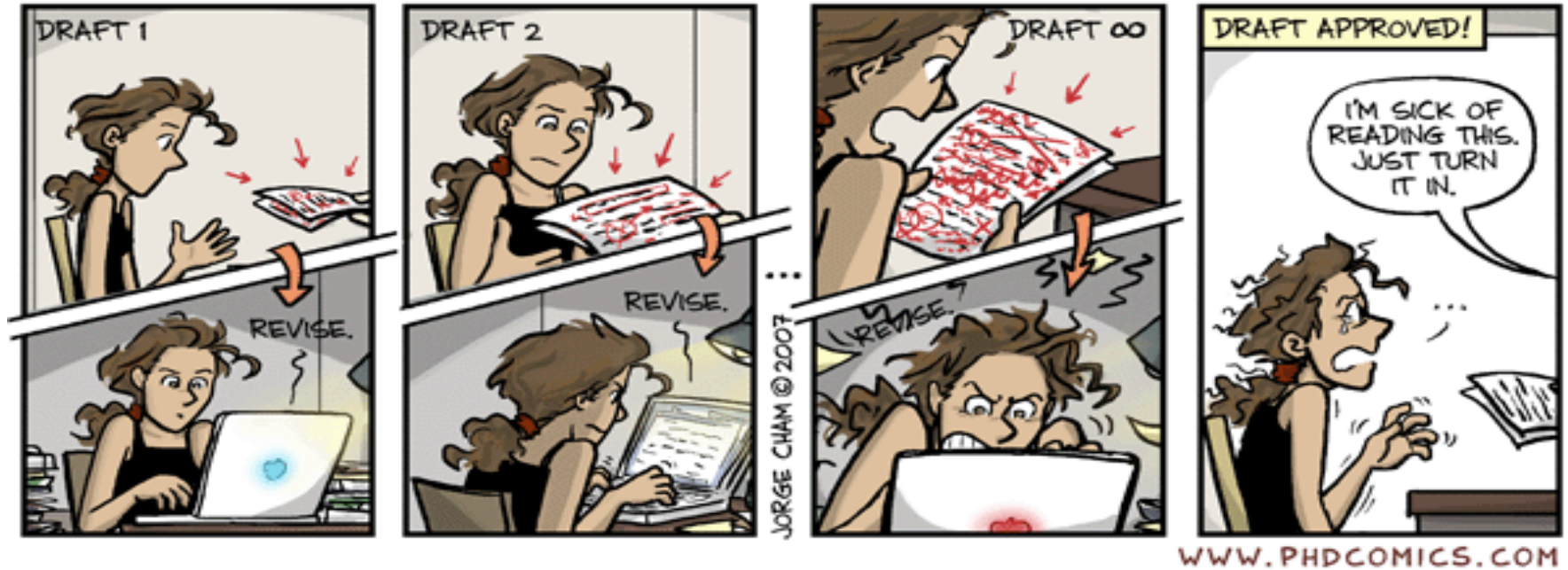
11 MODULES
3 TOPICS
NAVIGATING
PEER REVIEW



COMMUNICATING
YOUR RESEARCH



Revise and (re)submit





Questions and discussion





Thank you

Katarzyna Gaca-Zajac, PhD Eng.
k.gaca-zajac@elsevier.com

