Publication Ethics

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Agenda

What is Research Integrity?

What is Publication Ethics?

- Honesty, Integrity, Transparency
- Fair Credit and Authorship
- Problematic Publishing Practices:
  - Predatory Journals
  - Paper Mills
  - Hijacked Journals
- Retractions and Corrections
- Conflicts of Interest
- Peer Review Ethics
- Responsible AI use in Publishing

Questions and Discussion
What is Research Integrity?

- Publication ethics
- Research Ethics
- Data management
- Good scientific conduct
- Reproducibility
- Responsible AI use
- Responsible resource use
- Protection from undue influence (commercial & political)
- Open Science
What is Research Integrity?

Research Integrity means:

- The use of honest, transparent, and verifiable methods in the planning, implementation, and evaluation of research.
- Adherence to rules, regulations, and guidelines in the communication of research results.
- Compliance with general professional standards and rules.

Objectives:

- Ensuring the validity and reproducibility of scientific findings.
- Maintaining public trust in scientific research.
- Ensuring ethical standards and legal requirements.
- Promoting collaborative and inclusive interactions among researchers.
Publication Ethics means the set of principles and standards that govern how research findings and scholarly works should be reported, shared, and archived in the scientific community.

These principles ensure the credibility, accuracy, and integrity of published research and uphold the trust that the public and the scientific community place in scientific publications.
Honesty, Integrity and Transparency are core principles for the ethical conduct of research and its dissemination through publication.

Researchers must accurately represent their findings, methodologies, and the context of their research, without any form of deception or misrepresentation.
### Honesty, Integrity, Transparency

| Dos                              | Don’ts                                                          |
|---------------------------------|-----------------------------------------------------------------|
| **Accurate Reporting** of all data, including adverse outcomes or findings contrary to hypotheses. | **Data Fabrication and Falsification**, i.e. making up (fabrication) or manipulating (falsification) research data and findings |
| **Full Disclosure** of methodology and processes used in the research enabling replication | **Selective Reporting** of data that suits the researcher’s objectives while omitting other data |
| **Acknowledgment of Sources** by properly citing the contributions and ideas of others | **Plagiarism**, i.e. using the ideas, processes, results, or words of others without proper attribution |
| **Correcting the Record** by taking proactive steps to correct any discovered errors in published research | **Non-disclosure of Conflicts of Interest**, i.e. ailing to disclose personal or financial interests that might affect the research outcomes |
Plagiarism: Plagiarism is the unlawful use of ideas, words, or works of other individuals without proper acknowledgment. This undermines the authenticity of the research and represents a serious violation of scientific ethics.

Self-plagiarism: Self-plagiarism occurs when authors reuse parts of their own previously published works without appropriate citation or referencing. This can raise questions about the originality of the research and impair scientific discourse.

Authorship Issues: Inappropriate attribution of authorship, including the omission of deserving authors or the addition of individuals who have not made a significant contribution (gift authorship).
The International Committee of Medical Journal Editors (ICMJE) Guidelines: Criteria for authorship

1. “Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or reviewing it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.”
Problematic Publishing Practices: Predatory Journals

- (Pseudo)scientific journal that often employs fraudulent or misleading practices to entice authors to publish their research for a (sometimes hefty) fee.
- Frequently offer rapid publication without adequate scientific quality control or peer-review processes.
- Primary goal is usually to generate financial profit from publication fees.
- In addition to predatory journals, there are also predatory conferences – these demand high participation fees but often do not take place at all or only occur virtually.

Image credit: Nature
Problematic Publishing Practices: Predatory Journals

Signs of a predatory journal:

• Lack of or inadequate Peer Review Process.
• Misleading information about the publisher's location, the composition of the editorial board, or indexing in recognized databases.
• Aggressive acquisition methods to encourage authors to submit manuscripts, including unsolicited emails and promises of very rapid publication.
• Lack of transparency regarding fees, often hiding additional costs.
• Absence of professional standards such as adherence to copyright laws, clear guidelines on authorship, and transparency regarding funding sources and conflicts of interest.

Risks and Consequences:

• Damage to scientific careers
• Dissemination of unreliable results
• Financial losses
• Loss of scientific work
Problematic Publishing Practices: Paper Mills

- A for-profit organization or a company that mass-produces and sells academic works.
- Typically target researchers or students who need authorships without being willing or able to write.
- Offer a range of services from complete manuscripts to individual components of the research work (e.g. as data analysis, writing, drawings, and peer-review manipulations).
- Pose a serious threat to science and require a concerted effort from scientific publishers, research institutions, and the entire academic community to minimize their negative impacts.
Problematic Publishing Practices: Paper Mills

**SUBJECT BREAKDOWN**
The scientific disciplines with the highest proportions of paper-mill articles are biology and medicine, and chemistry and materials science, the analysis suggests.

- Medicine and biology: 3.0%
- Chemistry and materials science: 2.5%
- Computer science: 1.9%
- Business: 0.9%
- Geography: 0.7%
- Engineering: 0.5%
- Environmental science: 0.5%
- Economics: 0.5%

*Subject fields from analysis of 'concepts' associated with some research articles in OpenAlex database.*
Problematic Publishing Practices: Paper Mills

Signs of Paper Mills:

- **Mass Production of Manuscripts**: Paper Mills often use templates or minimally modified versions of previous works to quickly produce a large number of similar articles.

- **No Genuine Research Activity**: The "research" presented in these papers can be fabricated, replicated, or manipulated, often without any real experimental work.

- **Services for Money**: Researchers pay for the creation of the articles, which often happens without disclosure to the journals or conferences where the works are submitted.

Risks and Consequences:

- Scientific misconduct and fraud
- Undermining the credibility of the scientific literature
- Damaging scientific progress
- Reputational risks.
Problematic Publishing Practices: Hijacked Journals

- Fraudulent journal that **mimics the website and branding** of a reputable, established journal to deceive researchers into submitting papers ("science phishing").
- Often create **websites that closely resemble those of legitimate journals**, using similar names, ISSNs, and design elements to confuse authors about their authenticity.
- Typically **target unsuspecting** researchers.
- Promise **rapid publication times** and prominent exposure but lack **proper peer-review** and editorial oversight.
- The primary motive is **financial gain** through publication fees charged.
- **Significant threat to the integrity** of scientific publishing.
Problematic Publishing Practices: Hijacked Journals

Signs of Hijacked Journals:

• **Deceptive Similarities:** often closely imitate the web design, name, and ISSN of legitimate journals.

• **Lack of Peer Review:** may advertise rapid publication times that are uncharacteristically quick for thorough, genuine peer review processes.

• **Unusual Contact Information:** The contact details provided may be inconsistent with those of the genuine journal (e.g. @gmail.com or @yahoo.com) and other contact information that does not match the legitimate publisher’s details.

• **Predatory Fees:** Researchers are often required to pay significant publication fees upfront, which are not transparently communicated during the submission process.

Risks and Consequences:

• Undermining the Credibility of Scientific Literature

• Damage to Scientific Progress

• Reputational Risks
Retractions and Corrections

Retraction:
• **Formal withdrawal** of an already published scientific article from the scientific literature.
• Usually occurs when the data or the basis of the research findings are so **flawed or problematic** that their results are not reliable.
• Also used in cases of **scientific misconduct** as e.g. plagiarism, falsification, or serious ethical violations are subsequently identified.
• Occasionally, retractions are **due to administrative errors** on part of the publisher (e.g. duplicate publication).

Correction:
• Published when part of a scientific article is **inaccurate but not completely invalid**.
• Used to **address specific errors or omissions** that do not fundamentally question overall conclusions (e.g. computational errors, author details, typos...).
### Reasons for Retraction (Retraction Watch):

| Reason for Retraction | Retraction Details |
|-----------------------|--------------------|
| Author unresponsive   |                    |
| Bias issues or lack of balance |                  |
| Breach of Policy by author |                 |
| Cites retracted work  |                    |
| Civil proceedings     |                    |
| Complaints about author |                |
| Complaints about company/institution |              |
| Complaints about third party |             |
| Concerns/issues about animal welfare |           |
| Concerns/issues about authorship |          |
| Concerns/issues about data |               |
| Concerns/issues about human subject welfare |              |
| Concerns/issues about image |              |
| Concerns/issues about referencing/attributions |            |
| Concerns/issues about results |              |
| Concerns/issues about third party involvement |            |
| Concerns/issues with peer review |             |
| Conflict of Interest   |                    |
| Contamination of Cell lines/tissues |            |
| Contamination of materials (general) |          |
| Contamination of reagents |                |
| Copyright claims       |                    |
| Criminal proceedings   |                    |
| Date of retraction/other unknown |           |
| Doing the right thing  |                    |
| Duplicate publication through error by journal/publisher |         |
| Duplications of article |                  |
| Duplication of data    |                    |
| Duplication of image   |                    |
| Duplication of text    |                    |
| EOC lifted             |                    |
| Error by journal/publisher |            |
| Error by third party   |                    |
| Error in analyses      |                    |
| Error in cell lines/tissues |            |
| Error in data          |                    |
| Error in image         |                    |
| Error in materials (general) |          |
| Error in methods       |                    |
| Error in results and/or conclusions |         |
| Error in text          |                    |
| Ethical Violations by author |            |
| Ethical violations by third party |          |
| Euphemisms for Duplication |            |
| Euphemisms for misconduct |           |
| Euphemisms for Plagiarism |           |
| Fake peer review       |                    |
| False affiliation      |                    |
| False/forged authorship |               |
| Falsification/Fabrication of data |          |
| Falsification/fabrication of image |        |
| Falsification/fabrication of results |         |
| Hoax paper             |                    |
| Informed/patient consent - None/withdrawn |        |
| Investigation by company/institution |           |
| Investigation by journal/publisher |         |
| Investigation by ORI   |                    |
| Investigation by third party |            |
| Lack of approval from author |            |
| Lack of approval from company/institution |          |
| Lack of approval from third party |           |
| Lack of IRB/IACUC Approval |           |
| Legal reasons/legal threats |            |
| Manipulation of images  |                    |
| Manipulation of results |                   |
| Miscommunication by author |               |
| Miscommunication by company/institution |          |
| Miscommunication by journal/publisher |          |
| Miscommunication by third party |           |
| Misconduct - official investigation/finding |         |
| Misconduct by author   |                    |
| Misconduct by company/institution |           |
| Misconduct by third party |               |
| No further action       |                    |
| Nonpayment of fees/refusal to pay |            |
| Not presented at conference |            |
| Notice-lack of         |                    |
| Notice: Limited or no information |         |
| Notice: Unable to access via current resources |      |
| Objections by author(s) |                  |
| Objections by company/institution |          |
| Objections by third party |               |
| Original data not provided |             |
| Paper mill             |                    |
| Plagiarism of article  |                    |
| Plagiarism of data     |                    |
| Plagiarism of image    |                    |
| Plagiarism of text     |                    |
| Publishing ban         |                    |
| Randomly generated content |              |
| Results not reproducible |              |
| Retract and replace    |                    |
| Rogue Editor           |                    |
| Sabotage of materials  |                    |
| Salami slicing         |                    |
| Taken from dissertation/thesis |         |
| Taken via peer review  |                    |
| Temporary removal      |                    |
| Transfer of copyright/ownership |         |
| Unreliable data        |                    |
| Unreliable image       |                    |
| Unreliable results     |                    |
| Updated to correction  |                    |
| Updated to retraction  |                    |
| Upgrade/update of prior notice |           |
| Withdrawal             |                    |
| Withdrawn (out of date) |                  |

Additional terms:
- Falsification/ Fabrication of results
- Hoax paper
- Informed/patient consent - None/withdrawn
- Investigation by company/institution
- Investigation by journal/publisher
- Investigation by ORI
- Investigation by third party
- Lack of approval from author
- Lack of approval from company/institution
- Lack of approval from third party
- Lack of IRB/IACUC Approval
- Legal reasons/legal threats
- Manipulation of images
- Manipulation of results
- Miscommunication by author
- Miscommunication by company/institution
- Miscommunication by journal/publisher
- Miscommunication by third party
- Misconduct - official investigation/finding
- Misconduct by author
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- Original data not provided
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- Randomly generated content
- Results not reproducible
- Retract and replace
- Rogue Editor
- Sabotage of materials
- Salami slicing
- Taken from dissertation/thesis
- Taken via peer review
- Temporary removal
- Transfer of copyright/ownership
- Unreliable data
- Unreliable image
- Unreliable results
- Updated to correction
- Updated to retraction
- Upgrade/update of prior notice
- Withdrawal
- Withdrawn (out of date)
Retractions and Corrections

https://retractionwatch.com/

http://retractiondatabase.org/RetractionSearch.aspx?
Retractions and Corrections

A BUMPER YEAR FOR RETRACTIONS
Retraction notices in 2023 have passed 10,000, largely because of more than 8,000 retractions by Hindawi.

- Journal articles
- Conference papers

Nature Vol 624 | 21/28 December 2023
Retractions and Corrections

COUNTRIES WITH HIGHEST RETRACTION RATES

Saudi Arabia, Pakistan, Russia and China have the highest retraction rates among countries with >100,000 papers* published over the past two decades.

| Country   | Retractions per 10,000 papers |
|-----------|-------------------------------|
| Saudi Arabia | 30.6                          |
| Pakistan   | 28.1                          |
| Russia     | 24.9                          |
| China      | 23.5                          |
| Egypt      | 18.8                          |
| Malaysia   | 17.2                          |
| Iran       | 16.7                          |
| India      | 15.2                          |

Median

*Total number of research papers according to Scopus: articles and reviews. Analysis excludes conference papers (and their retractions).
Conflict of Interest (COI)

A COI occurs when personal or financial interests of researchers have the potential to influence their professional judgments and actions in research.

COIs can compromise the objectivity, integrity, and credibility of scientific research.

They may arise when researchers could gain personal or financial benefits that are in direct or indirect contradiction to their scientific responsibility and role.

Image credit: PixaBay
Types of COI:

• Financial:
  o Direct financial gains such as salaries, consulting fees, stock ownership, patents, or copyrights that could benefit from the research results.
  o Indirect financial benefits through grants, equipment, or materials from companies that have an interest in the outcome of the research.

• Personal:
  o Personal relationships such as family, friendships, or hostilities that could influence the impartiality of the research.
  o Professional ambitions or loyalty to an institution or organization that could influence the research results.

• Academic:
  o Pursuit of professional recognition, publications, or funding that could lead to biased or distorted research methods or reporting.
Conflict of Interest (COI)

Commercial funding and COI:

• Funding from industry or private sector entities can influence the conduct and outcomes of scientific studies.
• This becomes problematic when it biases research processes and results = conflicts of interest.
• Commercially funded studies may (intentionally or unintentionally) subtly design experiments or choose data interpretations that favor the products or services of the funder.
• This may entail (intentional or unintentional) suppression of negative outcomes, selective publication of positive data, manipulation of study parameters...

Risks and consequences:

• Undermining the credibility of the research
• Risks to public health and safety
• Erosion of public trust in scientific research
Conflict of Interest (COI)

Research users and policymakers recognise the risk of COIs biasing research results with potentially serious consequences for patients and the public. Especially in the medical field, there are therefore stringent checks and balances to ensure researchers are free of COI.

Example: Cochrane is the world's leading publisher of systematic reviews in medical research. The WHO regularly relies on Cochrane reviews in its health recommendations.

Cochrane has one of the strictest COI policies in the world. Authors as well as editors must demonstrate that they have no financial or non-financial interests in the subject of their review.
Peer review is foundational to maintaining the quality and credibility of scientific publications.

Ethical peer review involves unbiased, fair, and as-objective-as-possible evaluation of manuscripts by experts who are well-qualified to assess the work presented.

Reviewers are expected to maintain confidentiality, avoid conflicts of interest, and provide constructive, impartial feedback aimed at enhancing the work rather than impeding it.
Ethics breaches in peer review:

• Breach of Confidentiality
• Non-disclosure of Conflict of Interest
• Using Reviewed Material for Personal Gain
• Inappropriate (Social or Professional) Influence
• Failure to Maintain Objectivity

- This paper is desperate. Please reject it completely and then block the author’s email ID so they can’t use the online system in future.
- The type of lava vs. diversity has no meaning if only one of each sample is analyzed; multiple samples are required for generality. This controls provenance (e.g. maybe some beetle took a pee on one or the other of the samples, seriously skewing relevance to lava composition).
- Very much enjoyed reading this one, and do not have any significant comments. Wish I had thought of this one.
- It is sad to see so much enthusiasm and effort go into analyzing a dataset that is just not big enough.
- You call the sample fresh water, this is confusing as it is saline water.
- The biggest problem with this manuscript, which has nearly sucked the will to live out of me, is the terrible writing style.
- The abstract and results read much like a laundry list.

Image taken from: https://www.skeptical-science.com/
Responsible AI use can include:

- Using AI to detect Research Integrity breaches (plagiarism, retraction..)
- Employing AI-driven software endorsed by reputable publishers for data management and analysis
- Content summarisation as a basis for further investigation
- Enhancement of Peer Review: assist human reviewers by pre-screening manuscripts for potential plagiarism, data fabrication, or inconsistencies in data reporting. This allows reviewers to focus on more critical aspects such as the novelty and scientific validity of the research.
- Accessibility Improvements: automatically generate accessible content for people with disabilities, such as text-to-speech versions of articles or enhanced visual content.
- Editorial and translation tasks (with disclosure)
Irresponsible and/or controversial AI use can include:

**Automated Research Generation:** Using AI to fully automate the generation of research papers without human oversight can lead to the publication of flawed or nonsensical studies if the AI does not fully understand the nuances and complexities of the topic (also: potential for Paper Mill flood).

**Bias in Article Recommendation Systems:** AI systems that recommend articles to researchers and readers can perpetuate biases by favoring certain topics, authors, or institutions, thus influencing the visibility and impact of research based on skewed criteria.

**Manipulation of Metrics:** Use of AI tools to artificially inflate citation counts and manipulate impact factors.

**Unethical Data Scraping:** AI can be used to scrape vast amounts of data from various sources without proper authorization or respect for privacy and consent.
To maximize benefits while minimizing harms, it's crucial for stakeholders in scientific publishing to establish clear guidelines and ethical standards for the use of AI.

This includes transparent reporting of AI involvement in the research and publication process, and continuous monitoring for unintended consequences or biases.
Guidelines and Materials on Publication Ethics

Guidelines

COPE Guidelines are formal COPE policy and are intended to advise editors and publishers on expected publication ethics practices.

publicationethics.org
Contact

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https://lbg.ac.at/lbg-ethics-and-diversity-hub/?lang=en
Thank You!