

## SUPPLEMENTAL GUIDANCE: ADDRESSING CONCERNS ABOUT SYSTEMATIC MANIPULATION OF THE PUBLICATION PROCESS

### INTRODUCTION

Cases involving potential paper mill activity present editors with numerous practical challenges as journals working under various pressures and resource constraints try to balance the responsibilities of providing due process across numerous articles and addressing integrity issues in a timely manner.

This document is a supplement to the COPE guidance on Systematic manipulation of the publication process (<https://doi.org/10.24318/cope.2019.2.23>), and should be used alongside it. Whereas Systematic manipulation of the publication process provides detailed guidance on what paper mills are, what types of evidence to look for, and how to evaluate the likelihood that the cumulative evidence is indicative of paper mill activity, this document provides high level guidance to help editors and publishers who are managing these cases to navigate common challenges.

### DEFINITIONS

**Paper mill:** *An individual, group of individuals, or organisation that aims to manipulate the publication process to achieve the publication of articles for the purposes of financial gain.*

**Batch:** *A set of articles in one or more journals, identified as having features in common that are indicative of potential paper mill activity and that are likely to originate from the same paper mill. For example, features that indicate that articles originate from the same paper mill may include: articles with similar content, such as the same language style, formatting, illustrations, references, or authors; articles showing the same patterns of manipulation; or both.*

### RELATED RESOURCE

This document is intended to be used with the COPE guidance on Systematic manipulation of the publication process. (<https://doi.org/10.24318/cope.2019.2.23>)



Because paper mill activity often involves the manipulation of publication processes affecting more than one journal, as well as issues with article content, this guidance assumes that the editor and their publisher will be working together on a paper mill investigation. However, the guidance also applies to journal editors who may not have access to publisher level collaboration.

In paper mill cases, issues are often evident only when looking at trends across multiple articles or manuscripts. Whereas **COPE guidance** for standalone issues (eg, **COPE flowcharts** (<https://cope.onl/flowcharts-5>) encourages editors to collect information, documentation, and data from authors, as needed, to clarify issues and support decisions, taking these steps for individual articles may not be helpful in paper mill cases and instead may hinder progress towards resolution of the case. This guidance empowers editors and publishers to consider paper mill case issues and decisions at a batch level (ie, across a set of articles identified as being linked by common issues). Each article should be evaluated in terms of whether or how it aligns with the issues observed across the batch, which may occur across several journals, so that editorial decisions can be applied to all of the affected articles at the same time on the basis of batch-level concerns.

In this guidance, the term ‘batch’ and the process of ‘batching’ problematic manuscripts or articles are intended only as mechanisms to aid the timely investigation and resolution of suspected paper mill activity. It is not expected that every article or manuscript associated with a particular paper mill must be found before action is taken on a batch. The size of a batch and the timing of action taken on a batch will depend on the workflows and resources available to an affected journal or publisher. In some cases, batching may not be necessary.

## GUIDANCE FOR ADDRESSING MULTI-ARTICLE PAPER MILL CASES

### 1. Investigating concerns across a batch of articles

If a group of manuscripts or articles are suspected of being part of a paper mill (eg, because of suspicious characteristics or indicators that are shared across manuscripts), the journal/publisher should evaluate and manage their affected content all together (ie, as a batch), rather than on an article-by-article basis. A consistent investigation approach and decision making framework should be applied across the batch.

- Evaluate the batch of articles to determine if there are features indicating paper mill activity.

Use the **COPE guidance on Systematic manipulation of the publication process**

(<https://doi.org/10.24318/cope.2019.2.23>) as a reference. Note that tactics used by paper mills are constantly evolving and may extend beyond those listed in the guidance document.

- After conducting a thorough assessment of the first set of articles in the batch, you may be able to identify other articles associated with the case and/or reduce the number of checks for subsequent articles based on the indicators identified.

- If you are aware of affected content in journals from other publishers, you should attempt to notify these publishers of your concerns (eg, via the **COPE Publishers' Forum**, a confidential forum hosted by **COPE** for publisher members, or by other confidential communications; see also section 5, and **COPE guidance on Sharing of information among editors-in-chief regarding possible misconduct** (<https://doi.org/10.24318/cope.2019.1.7>).
- Contact each author group separately about the same suspected paper mill.
  - Editors/publishers should do due diligence in attempting to notify all coauthors of the concerns and editorial decision. However, where this is likely to cause undue delays to the timely resolution of the case, or in the absence of current contact information for all of the authors, the editor/publisher may request that the corresponding author inform the coauthors.
  - Attempt to verify all email addresses or at least the email addresses of the corresponding authors. Email addresses provided with submissions may be falsified or registered to users (eg, paper mill or service agency contributors) other than the listed academics. Affiliations may also be fabricated and may need to be verified.
  - Share with the authors the information needed to explain why their article is under investigation (at some level) but do not disclose detailed information about the paper mill assessment and any other articles involved. These details should remain confidential. Consider that information about specific indicators in paper mill cases may be used to inform paper mill activity and evade journal checks.
  - It may suffice to provide high level information about the batch concerns (eg, 'concerns about peer review integrity') and indicate that the article has been identified as one of many or several for which the concerns apply.
  - Ask the authors if they received any support from third party individuals or organisations in conducting the research, preparing and/or submitting the manuscript, or during peer review and revisions.
- Optional: consider whether to request data or other documentation. Such requests can cause delays and incur substantial resource burdens and are often not helpful in resolving paper mill cases. Only request original data files or other documents if they are expected to affect the editorial assessment and decision based on the scope of concerns across the batch of articles. For example, in cases involving peer review manipulation or authorship integrity issues, the data files may not be helpful in addressing the batch-level concerns or providing assurance as to the provenance or reliability of the work. Also consider whether resources are available (staff, software, expertise, translation services, etc) to properly analyse the raw data. If you decide to request data, be specific about what data (supporting which results, what type of data file) are required and why, and have a plan for how you will evaluate the data files. Consider that:
  - it can be difficult to distinguish genuine versus fabricated data files without input from the institution.
  - original data files may not be informative as to the origins of the data; files from different authors may look very similar in terms of labelling, formatting, or content, even though the authors insist that these are original and have been created by them, without involving any third parties.

- Evaluate author responses. Responses or explanations of similarities across papers may appear reasonable when considering one article. However, the responses should be considered in the context of the broader case (ie, does the response resolve the batch-level issues or indicate that the specific article should be excluded from the batch?). It may help to compare the response text, timing, and origins across the batch.
- If authors are not responsive, consider whether you have sufficient evidence for the batch and/or specific article to inform an editorial decision (see section 2). Apply consistent decision making principles across the batch.
- Note that themed or special issues that are managed by a guest editor are particularly vulnerable to manipulation of the publication process. Although the focus of this guidance is on how to manage large numbers of affected manuscripts and articles, the publisher and editor should also have processes in place for managing guest editors who are found to be involved in paper mills.
- Editors/publishers may also contact the authors' institutions to inform them of the concerns and/or request support. However, the journal/publisher can proceed with decisions that reflect the editorial assessment even in the absence of input from the institution.

## 2. Editorial decisions and notices

Journal editors and publishers have responsibilities to uphold their publication criteria and policies, provide fair and objective review processes, and take timely action to address concerns about the integrity and/or validity of submitted or published work.

In cases of paper mills, patterns in content, author, and/or peer review behaviour are often sufficient to undermine editorial trust in the content, whether or not there is irrefutable, direct evidence (a 'smoking gun') that the cluster of manuscripts originated from a paper mill. 'Grey area' cases may become increasingly common as paper mills continue evolving to evade editorial detection. How far the editor or publisher trusts and can stand by the integrity of the content of a set of manuscripts, based on the findings of internal investigations, should determine whether retraction or rejection is appropriate, or whether, for published articles, an alternative resolution (eg, expression of concern or publisher's note) is more suitable. Editorial policies on issues commonly seen in paper mill activity can help support decision making in these cases (see section 4).

In the context of the current **COPE Retraction guidelines** (<https://doi.org/10.24318/cope.2019.1.4>), patterns of author, peer reviewer, or editor behaviour that suggest successful or attempted manipulation of the publication process are indicative of research misconduct. Any research or other types of scholarly content published as the result of such behaviour would constitute unethical research and publication.

Editors/publishers should seek legal advice if there are concerns about potential legal repercussions following a decision, or if authors respond to a decision with legal challenges to the case outcome or notice text (see section 3).

Retraction notices should focus on the ethics and integrity concerns identified and should indicate if decisions are based on batch-level concerns. Editors should consider the risks versus the benefits of disclosing different levels of case details in public notices. Notices should include sufficient information to inform readers and authors of the high level reason(s) for the decision (eg, concerns about ‘peer review integrity’ or ‘manipulation of the publication process’) but should not include details about specific indicators that could be used to evade editorial processes and checks. Avoid using the term ‘paper mill’ as it may not clearly communicate the nature of the concerns. Avoid implying or alleging individual level culpability for the concerns unless the statements are supported by outcomes of institutional investigations.

### 3. Managing legal risks

Authors may engage (or threaten to engage) legal counsel in response to issues, such as potential paper mill concerns, that question their integrity and/or threaten their publication records or careers. Publishers should have processes and systems in place to respond to legal threats. In response to legal threats, it may be helpful to obtain legal advice on the actual risk that would be incurred if you were to proceed with the pending editorial decision and how such risk could be mitigated while still resolving the case. Editorial policies and clear internal documentation on investigation and decision making standards may help support the position of journals/publishers in these cases.

### 4. Editorial policies

Journals should have transparent policies that are available to authors describing how they will proceed if the burden of evidence (including direct and/or circumstantial) supports suspicions that submissions or publications have been affected by efforts to manipulate the publication process. This may involve any type of paper mill activity, including content reuse/fabrication, peer review manipulation, authorship integrity issues, citation manipulation, undeclared competing interests, etc. For example, these policies could state that submissions and published articles will be rejected (pre-publication) or retracted (post-publication) if the journal’s/publisher’s investigation supports these suspicions.

### 5. Information sharing across publishers

Confidential sharing of paper mill information between journals (eg, via the **COPE Publishers’ Forum**) can provide publishers with access to key information about trends that might help inform their investigations and editorial actions. Sharing of information should be inclusive of smaller publishers where possible. This collaborative approach can expedite identification of and response to paper mill articles and manuscripts across different publishers.

Consider seeking legal advice when determining what information to share and how, and take into account legal and privacy issues (such as General Data Protection Regulation (GDPR) if relevant) as well as journal policies. Specific details about paper mill cases should typically not be shared with the public (including reporters), because this information could then be used by paper mills to undermine publishers’ efforts to address this issue (see also **COPE guidance on Sharing of information among editors-in-chief regarding possible misconduct** (<https://doi.org/10.24318/cope.2019.1.7>)).



## FURTHER READING

**COPE & STM. Paper Mills –**  
Research report from **COPE & STM** – English.  
<https://doi.org/10.24318/jtbG8IHL>

Potential paper mills. Potential “paper mills” and what to do about them – a publisher’s perspective.  
<https://cope.onl/potential-papermills>

## AUTHOR CONTRIBUTIONS

### Conceptualisation:

The guidance in this document was developed in discussions within a **COPE Working Group** focused on paper mills, taking into consideration the **COPE guidance on Systematic Manipulation of the Publication Process**, the Paper Mills research carried out by **COPE** and **STM** in June 2022, and working group members’ experiences and perspectives on practical aspects of paper mill case management. Further discussion on this topic was held at the **COPE webinar** on managing paper mills in September 2022, chaired by Jigisha Patel (**COPE Council Member**).

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## ACKNOWLEDGEMENTS

Howard Browman, Nancy Chescheir, Sarah Elaine Eaton, Kim Eggleton, Tim Kersjes, Trevor Lane, Ana Marusic, Rachel Safer, Heather Tierney, Michael Wise, Jennifer Wright, Laura Wilson, and Gabi Groves reviewed and provided suggestions for revisions to the document.



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