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Definition of systematic manipulation of the publication process

Systematic manipulation of the publication process is where an individual or a group of individuals have repeatedly used dishonest or fraudulent practices to:

- prevent or inappropriately influence the independent assessment of a piece of scholarly work by an independent peer.
- inappropriately attribute authorship of a piece of scholarly work.
- publish fabricated or plagiarised research.

Systematic manipulation is conducted with the goal of influencing the publication record and/or achieving financial gain, and involves more than one manuscript and possibly more than one journal.

Systematic manipulation of the publication process may raise concerns at different levels:

- Peer review manipulation. This type of manipulation can occur directly by manipulation or hacking of the submission system of the journal. It can also occur when authors are able to suggest peer reviewers and input contact email addresses for these peer reviewers on the submission system of the journal. The authors may suggest fabricated names or names of real experts, but the contact email addresses are falsified so that all correspondence with the suggested peer reviewers is directed back to the authors. The manipulators then submit positive peer review reports to ensure the manuscript is accepted for publication.

  This type of manipulation may be carried out by a group of individuals who agree to act as false peer reviewers for each other's manuscripts, thereby guaranteeing favourable peer review reports and boosting the publication records of the group.

  Third party editing agencies may carry out this type of manipulation by suggesting peer reviewers on the authors’ behalf, for a fee, but supplying fabricated email addresses that they input on the submission system of the journal (although not necessarily with the authors’ knowledge). They then also supply the favourable reviews, thereby guaranteeing manuscript acceptance for which they can charge a fee (Fig 1).

- Authorship for sale/papermills. Another possibility is initially inserting the name of an accomplished guest author, especially for single-blind and open review, and then replacing the name during revision or after editorial acceptance (Fig 2).

- Substitution of a manuscript. Sometimes a high quality manuscript is initially submitted (to ensure it passes peer review) and then a similar, but poorer quality manuscript (the authors’ own manuscript) is substituted after editorial acceptance.

Note: Peer review manipulation may occur in isolation and be instigated by authors on a small scale, for example, if a group of individuals are trying to boost their own publication records. Authorship for sale is likely to be accompanied by peer review manipulation because claiming a fee from the authors is dependent on acceptance for publication.

Note: Theme or special issues that are managed by a guest editor are particularly vulnerable to this type of manipulation.
**Suspicious submission patterns**

- **Request for extensive authorship changes after editorial acceptance**
  (especially corresponding authorship changes).

- **Duplicate submissions of the same manuscript**

- **Submissions made by a third party**

- **Strange behaviour on databases**
  eg, shared email addresses, changing email addresses, same IP addresses for different authors.

- **Unusual author email addresses**
  eg, the email does not match the author’s name and/or is non-institutional.*

- **Multiple accounts linked to the same email address or multiple email addresses**
  and/or ORCID accounts linked to the same author.

- **Numerous submissions to one or more journals**
  • From the same geographical region or same institution.
  • From the same authors or group of authors.
  • Submitted in a short timeframe.

- **Similarities in file names across different submissions**

* The use of non-institutional emails is common amongst authors and this feature should be considered in the context of other findings and should not be considered a sign of publication manipulation in isolation.

**Suspicious patterns in the content of manuscripts/articles**

This list is not exclusive. Suspicion should be raised if similar patterns in the type and presentation of data occurs across numerous manuscripts or publications.

- **Similar presentations of data across different submissions or publications**
  eg, many submissions that present Western blot data that have the same appearance in terms of the look and presentation of the figures.

- **Data types may be difficult to verify by eye alone**
  This would normally require additional information (such as accession numbers) that the authors have not provided.

- **Suspicious looking data, especially figures**
  eg, Western blot data images which may be stock images, or nonsense/computer generated files.

- **Suspicious acknowledgement and funding statements**
  eg, these may be identical to other unrelated submissions or publications by different authors.

- **High level of similarity between manuscripts by different authors (may be submitted to the same or different journals)**
  eg, systematic reviews, clinical studies which have a similar format or similar wording.

- **Substantial revisions to the manuscript especially after editorial acceptance**
  The entire content, author list, institutions etc might be gradually changed so that the change is only obvious when a direct comparison is made between the submitted and accepted manuscripts.

- **Suspicious statements about ethics and consent for clinical studies**
  eg, the statement might not match the type of research done or might cite the same approval reference number as other unrelated manuscripts or publications by different authors and/or from different institutions.

- **Data outputs that do not match the aim of the study**

- **Similar types of data outputs**
  eg, many unrelated submissions or publications that report the same study aims and output measures.

**SYSTEMATIC MANIPULATION OF THE PUBLICATION PROCESS**

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Suspicious patterns around peer review

- Same peer reviewers suggested for different manuscripts by different authors
- Rapid turnaround times for returning peer reviewer reports
- The use of the same email address or group of email addresses by different individuals across different manuscripts
- The use of non-institutional email addresses that cannot be verified to invite peer-reviewers
- Similarities in formatting and content between different peer-review reports for different manuscripts

How to investigate and prevent further publication manipulation

On discovering a suspicious pattern, the first considerations would be:

• To determine the cause of the problem – is it the authors, is it the reviewers?
  - Search for other submissions and publications by the same authors.
  - Check the peer reviewers of the suspicious manuscripts and published articles.
  - Check whether there have been requests to change authorship or make major revisions after editorial acceptance.
  - To determine whether there is a weakness in your submission process or manuscript handling system that can be addressed to prevent further manipulation.

Further investigation might include:

• Searching for computer IP addresses to determine whether all manuscripts were submitted via the same location.
• Cross publisher pattern checking via the COPE Publishers’ Forum.
• Seeking advice from COPE.

Prevention steps may include the following:

• Using technology, such as adding flags to manuscripts or running searches on suspicious names or emails across all journals might make patterns become apparent.
• Providing information and training for editors to raise awareness of the types of manipulation that are occurring and what to look out for would be useful.

COPE Publishers' Forum

COPE publisher members can seek advice from other publisher members via a confidential forum hosted by COPE. It provides a confidential means of sharing information, such as patterns of behaviour, about publication process manipulation with other publishers to allow them to look for similar patterns in their systems. Over time, these shared patterns and findings could develop into a resource that all members could use to help with their investigations into suspicious activities.

Is there some concern with a low, medium, or high level of confidence that systematic manipulation of the publication process has taken place?

- Probably not systematic*
- Probably
- Get initial evidence and determine your level of confidence that systematic manipulation of the publication process has taken place. (See table 1, columns 1 and 2 for guidance)

Follow advice in table 1, column 3 according to the level of confidence.

Do the authors’ or peer reviewers’ explanations, further information, and/or the raw data provided by the authors address your concerns? **

- Satisfactory explanation or data proven to be genuine
- Authors admit manipulation
- No response OR response and/or raw data provided unconvincing, inconclusive and/or proven to be not genuine.

Consider seeking help from the authors’ institutions

- Yes the institutions might be able to investigate
- Contact authors’ institutions requesting an investigation, and inform authors

- Yes misconduct confirmed
- Satisfactory explanation
- No response or inconclusive reply

Conside contacting the institutions every 3 months. If no response 1 year after first contact, reject affected manuscripts and inform authors and institutions

CONSIDER IF FURTHER ACTION IS NEEDED (EG. ORGANISING FURTHER REVIEW, PROVIDING CLEARER GUIDANCE FOR AUTHORS, OR UPDATING POLICIES)

CONSIDER IF FURTHER ACTION IS NEEDED (EG. ORGANISING FURTHER REVIEW, PROVIDING CLEARER GUIDANCE FOR AUTHORS, OR UPDATING POLICIES)
SUSPICION IS RAISED IN A PUBLISHED MANUSCRIPT FOR SYSTEMATIC MANIPULATION OF THE PUBLICATION PROCESS*

Get initial evidence and determine your level of confidence that systematic manipulation of the publication process has taken place. (See table 1, columns 1 and 2 for guidance).

Is there some concern with a low, medium, or high level of confidence that systematic manipulation of the publication process has taken place?

Follow advice in table 1, column 3 according to the level of confidence.

Do the authors’ or peer reviewers’ explanations, further information, and/or the raw data provided by the authors address your concerns? **

Response

Satisfactory explanation or data proven to be genuine

Authors admit manipulation

No response OR response and/or raw data provided unconvincing, inconclusive and/or proven to be not genuine.

Consider seeking help from the authors’ institutions

Yes the institutions might be able to investigate

Contact authors’ institutions requesting an investigation, and inform authors

Consider contacting the institutions every 3 months

Satisfactory explanation or data proven to be genuine

Authors admit manipulation

No response or inconclusive reply

Consider whether, without institutional help, the article’s integrity remains intact

Authors admit manipulation

No

Inform authors and institutions of the decision to retract and retraction wording

Consider contacting the institutions every 3 months

Authors admit manipulation

No response or inconclusive reply

Consider whether, without institutional help, the article’s integrity remains intact

Authors admit manipulation

No

Inform authors and institutions of the decision to retract and retraction wording

Retract Articles***

Consider publishing an expression of concern

Integrity remains in doubt and cannot be proven either way

Consider further action is needed (e.g., organising further review, providing clearer guidance for authors, or updating policies)

FOLLOW EXISTING COPE GUIDELINES

Notes
- “Please check guidance on ‘Systematic manipulation of the publication process’ (pages 2-4) for definitions of systematic manipulation and information on how to spot, investigate, and prevent it.
- “COPE encourages its publisher members to share their findings on the COPE Publishers’ Forum.
- “Retractions are most appropriate where the confidence level is high (as described in table 1).

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Table 1: Recommended actions

Recommended actions depending on investigation findings and level of confidence in the findings that systematic manipulation of the publication process has occurred.

<table>
<thead>
<tr>
<th>Confidence level</th>
<th>Type of problem or feature</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td>Requests for a change in one or two authors before editorial acceptance or after publication.</td>
<td>If there are no other features of concern, follow the relevant COPE flowchart on authorship changes.</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td>The use of similar language to other manuscripts to describe study aims, methodology etc or similar formats to present results.</td>
<td>If there are features from the medium or high rows, follow the process for that row.</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>Features in this row alone do not undermine the manuscript or article and may be legitimate behaviour by innocent authors.</td>
<td>If there are features from other rows in this table, follow the process for that row.</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>How to recognise potential authorship problems</td>
<td></td>
</tr>
</tbody>
</table>

How to recognise potential authorship problems:

- [https://doi.org/10.24318/cope.2019.2.22](https://doi.org/10.24318/cope.2019.2.22)
- [https://doi.org/10.24318/cope.2019.2.9](https://doi.org/10.24318/cope.2019.2.9)
- [https://doi.org/10.24318/cope.2019.2.11](https://doi.org/10.24318/cope.2019.2.11)
- [https://doi.org/10.24318/cope.2019.2.8](https://doi.org/10.24318/cope.2019.2.8)
- [https://doi.org/10.24318/cope.2019.2.10](https://doi.org/10.24318/cope.2019.2.10)

If there are features from other rows in this table, follow the process for that row.
<table>
<thead>
<tr>
<th>Confidence level</th>
<th>Type of problem or feature</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIUM</td>
<td><em>Unauthorised</em> (eg, made during revision stages without informing the editor) changes in authorship or changes requested after editorial acceptance but before publication particularly if these include changes in first or corresponding author.</td>
<td>Ask for an explanation for your concerns.</td>
</tr>
<tr>
<td></td>
<td>Authors using lots of non-institutional email addresses that may have the same format.</td>
<td>Ask for an explanation for your concerns.</td>
</tr>
<tr>
<td></td>
<td>Authors suggested reviewers and provided non-institutional email addresses.</td>
<td>Ask for an explanation for your concerns.</td>
</tr>
<tr>
<td></td>
<td>Short turnaround time on the peer review report with minimal revisions and positive recommendation. Peer review reports follow a similar format and use similar wording.</td>
<td>Investigate peer review further. Ask authors for further information - eg, evidence of ethics committee approval, evidence that consent was obtained.</td>
</tr>
<tr>
<td></td>
<td>Type of data presented is known to be used in publication manipulation or easy to obtain as stock images eg, Western blots.</td>
<td>Ask to see the raw data if data (eg, this could be entire, uncropped images of blots/gels) looks suspicious - (ensure a process for checking the raw data and establishing its veracity is in place before doing this. For example, what criteria will be used to ‘pass’ the data as genuine, who will make this judgement, what will be done if this judgement cannot be made or the data cannot be provided etc.).</td>
</tr>
<tr>
<td></td>
<td>For research involving human participants, data or tissue, the ethics committee approval and/or consent statements are missing or don’t match the study described.</td>
<td>Ask authors for further information - eg, evidence of ethics committee approval, evidence that consent was obtained.</td>
</tr>
</tbody>
</table>
## SYSTEMATIC MANIPULATION OF THE PUBLICATION PROCESS

### Confidence level

**HIGH**

Features in this column alone, undermine confidence in the manuscript or article enough to justify further action.

### Type of problem or feature

- **Substantial revisions after editorial acceptance** - changes in methods, results and conclusions.
- **Substantial unauthorised (eg, editor not informed) changes in authorship**, such as a change in the entire list of authors, and/or changes in author institutions that occur after editorial acceptance but before publication.
- **Clear evidence of peer review manipulation** (eg, that might have been found while investigating features shown in the medium risk row of this table) - fabricated emails used for author suggested reviewers (eg, fabricated emails using the names of real experts in the field) or same email used by different people (eg, across different manuscripts) peer review reports are short and follow a similar format.
- **Evidence that the peer review reports for the manuscript were submitted from the same IP address as the manuscript.**

### Action

- Ask the authors to respond to your concerns and evidence.
FURTHER READING

Byrne JA, Christopher J
Digital magic, or the dark arts of the 21st century—how can journals and peer reviewers detect manuscripts and publications from paper mills?
https://doi.org/10.1002/1873-3468.13747

Else H, Van Noorden R
The fight against fake-paper factories that churn out sham science
*Nature.* 591, 516-519 (2021)
https://doi.org/10.1038/d41586-021-00733-5

AUTHOR CONTRIBUTIONS

Conceptualisation:
Version 1 of this flowchart was developed in collaboration with Springer Nature.

Version 2 was conceptualised by Jigisha Patel, Independent Research Integrity Specialist and COPE Council Member, Simone Ragavooloo, Research Integrity Manager, BMJ, and Cat Chatfield, Research Integrity Editor, BMJ.

Writing – original draft preparation:
Jigisha Patel

Writing – revision and editing:
Jigisha Patel

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COPE provides leadership in thinking on publication ethics and practical resources to educate and support members, and offers a professional voice in current debates.

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