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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:

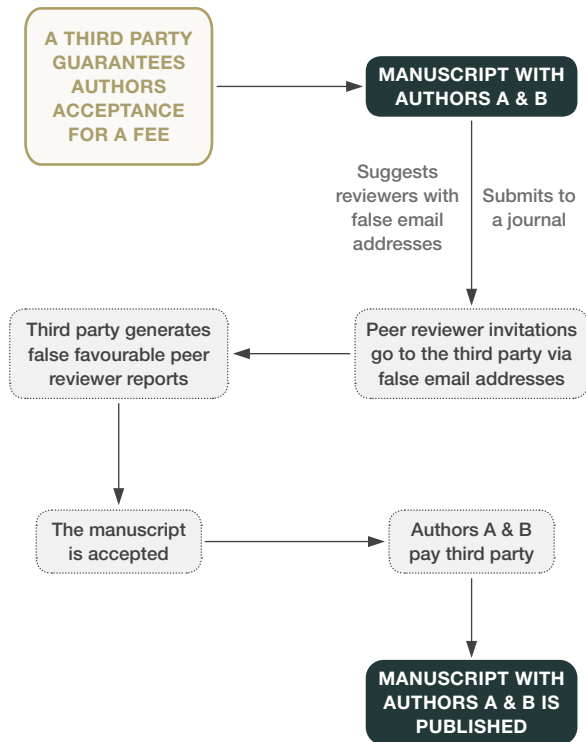
- **Peer review manipulation.** This type of manipulation can occur directly by manipulation or hacking of the submission system of the journal. It can also occur when authors are able to suggest peer reviewers and input contact email addresses for these peer reviewers on the submission system of the 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.

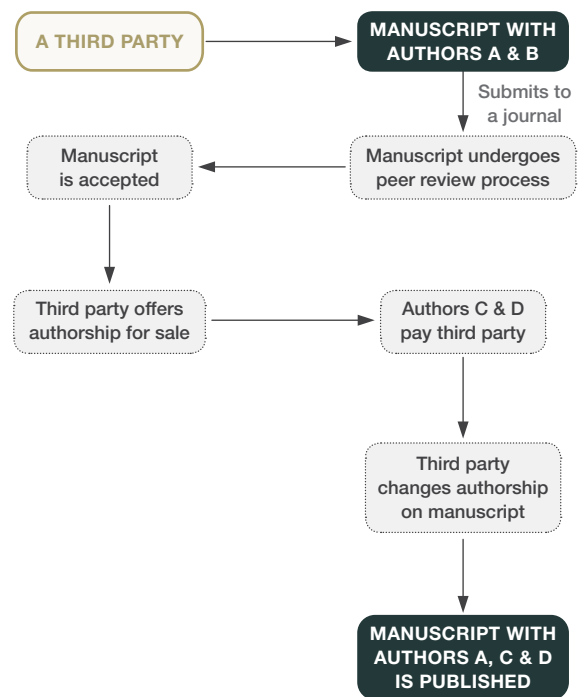
Third party editing agencies may carry out this type of manipulation by suggesting peer reviewers on the authors' behalf, for a fee, but supplying fabricated email addresses that they input on the submission system of the journal (although not necessarily with the authors' knowledge). They then also 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.

**Fig 1.**  
An example of peer review manipulation



**Fig 2.**  
An example of authorship for sale



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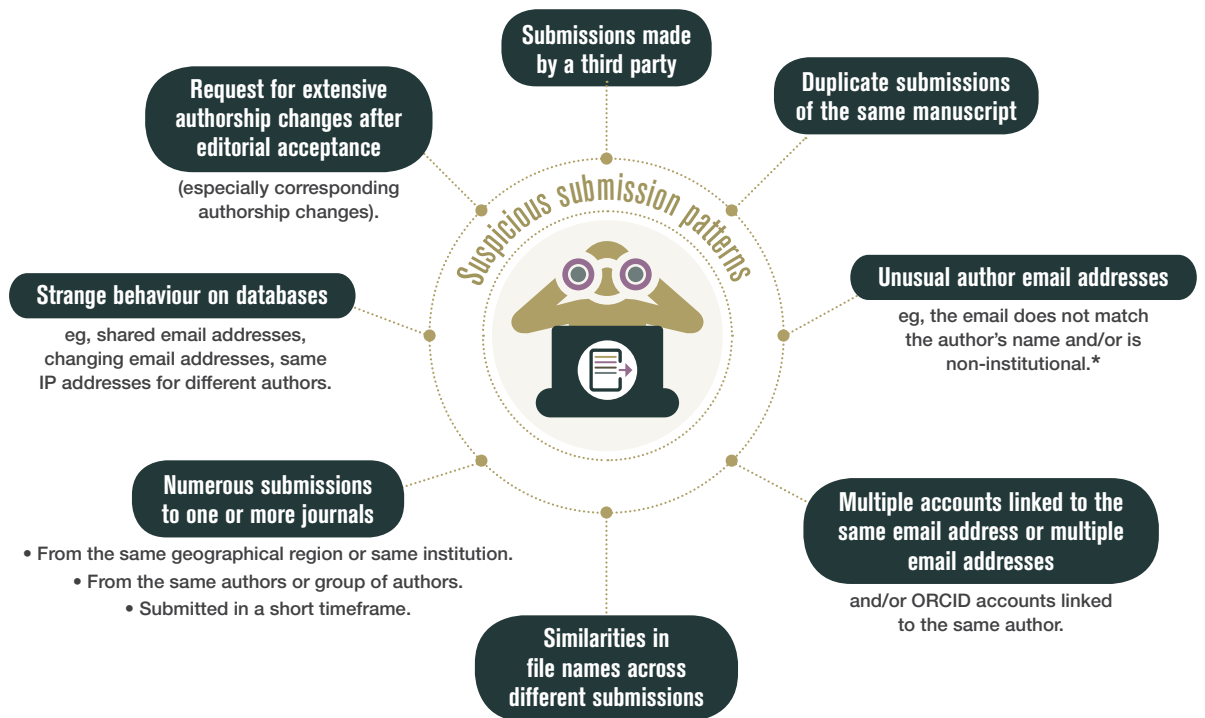
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**Note:** Peer review manipulation may occur in isolation and be instigated by authors on a small scale, for example, if a group of individuals are trying to boost their own publication records. Authorship for sale is likely to be accompanied by peer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



\* 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.

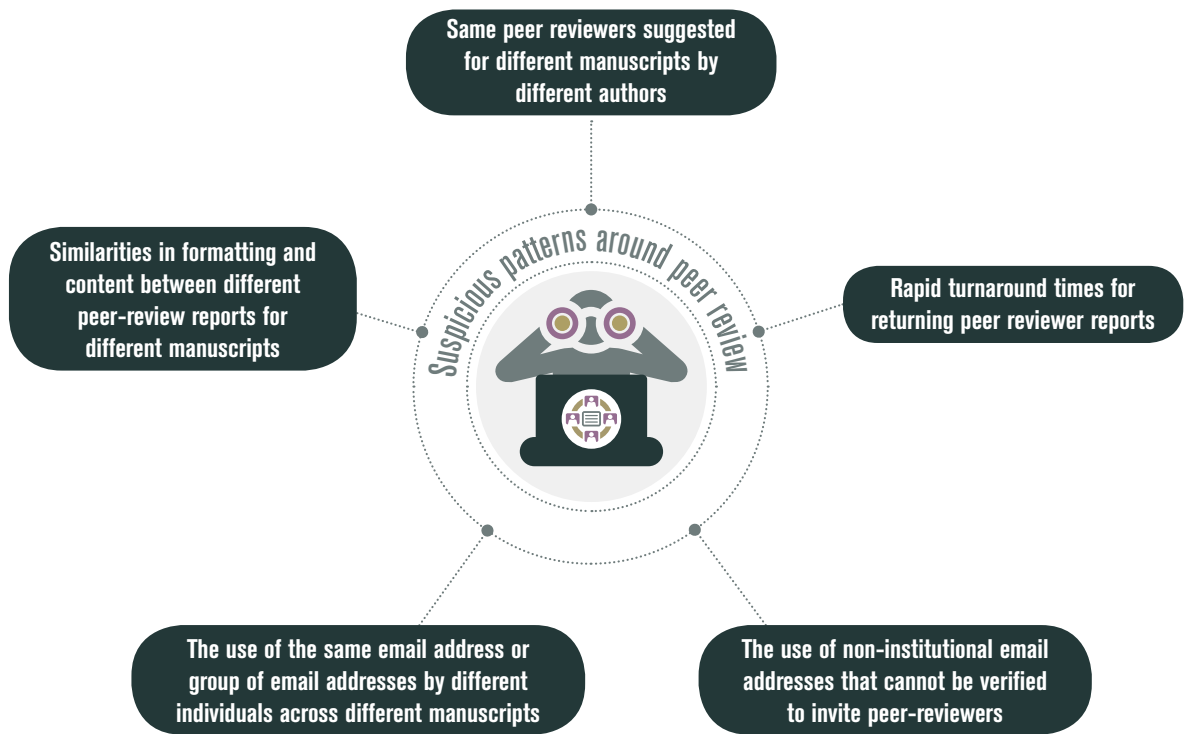


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## Suspicious patterns around peer review



## 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 the email addresses of peer reviewers of suspicious manuscripts and 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.

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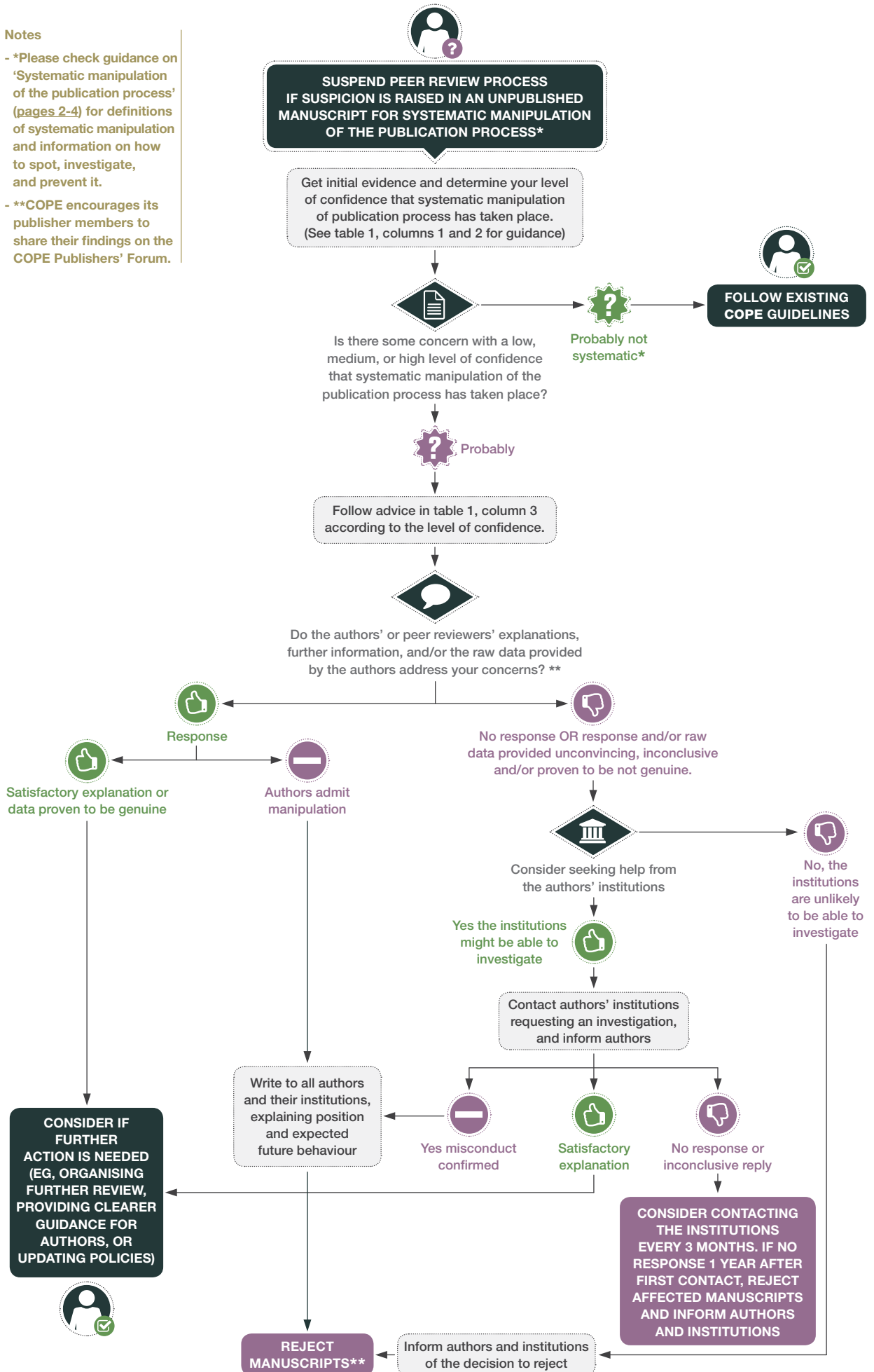


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SYSTEMATIC MANIPULATION OF THE PUBLICATION PROCESS  
SUSPECTED BEFORE PUBLICATION

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.



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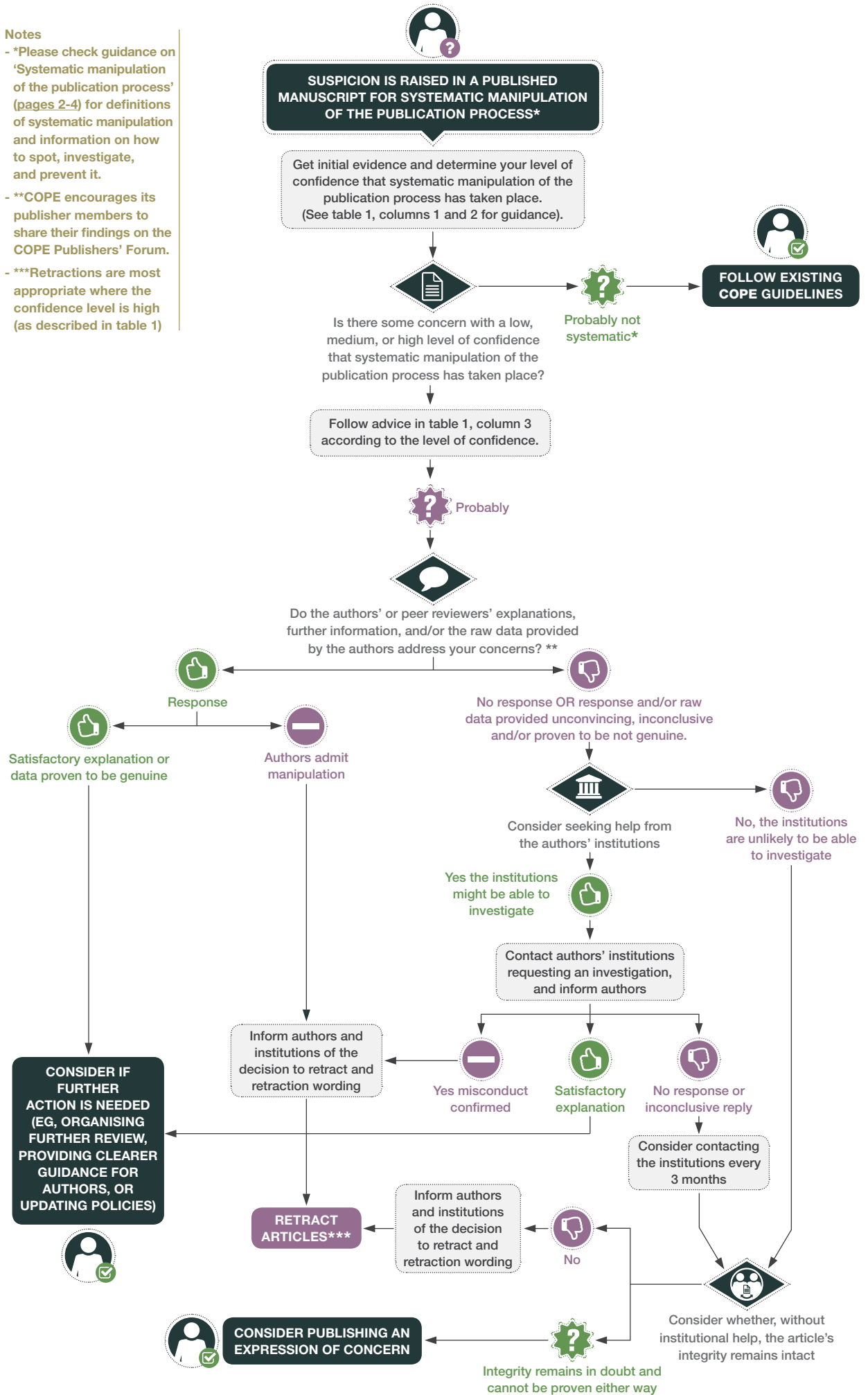
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- \*\*COPE encourages its publisher members to share their findings on the COPE Publishers' Forum.
- \*\*\*Retractions are most appropriate where the confidence level is high (as described in table 1)



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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.



Confidence level	Type of problem or feature	Action
<p><b>Low</b></p> <p>Features in this row alone do not undermine the manuscript or article and may be legitimate behaviour by innocent authors.</p>	<p>Requests for a change in one or two authors before editorial acceptance or after publication.</p>	<p>If there are no other features of concern, follow the relevant COPE flowchart on authorship changes.</p> <p><b>How to recognise potential authorship problems</b>  <a href="https://doi.org/10.24318/cope.2019.2.22">https://doi.org/10.24318/cope.2019.2.22</a></p> <p><b>Changes in authorship:</b>  <a href="https://doi.org/10.24318/cope.2019.2.9">https://doi.org/10.24318/cope.2019.2.9</a>  <a href="https://doi.org/10.24318/cope.2019.2.11">https://doi.org/10.24318/cope.2019.2.11</a>  <a href="https://doi.org/10.24318/cope.2019.2.8">https://doi.org/10.24318/cope.2019.2.8</a>  <a href="https://doi.org/10.24318/cope.2019.2.10">https://doi.org/10.24318/cope.2019.2.10</a></p> <p>If there are features from other rows in this table, follow the process for that row.</p>
	<p>The use of similar language to other manuscripts to describe study aims, methodology etc or similar formats to present results.</p>	<p>If there are features from the medium or high rows, follow the process for that row.</p> <p>If there are no features from another row, but no satisfactory explanation, consider rejection/EOC. Ask for an explanation for your concerns.</p>


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Confidence level	Type of problem or feature	Action
<p><b>MEDIUM</b></p> <p>Features in this column alone do not undermine the manuscript or article and require further information from the authors or an investigation.</p>	<p><i>Unauthorised</i> (eg, made during revision stages without informing the editor) changes in authorship or changes requested <i>after</i> editorial acceptance <i>but</i> before publication particularly if these include changes in first or corresponding author.</p>	<p>Ask for an explanation for your concerns.</p>
	<p>Authors using lots of non-institutional email addresses that may have the same format.</p>	<p>Ask for an explanation for your concerns.</p>
	<p>Authors suggested reviewers and provided non-institutional email addresses.</p>	<p>Ask for an explanation for your concerns.</p>
	<p>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?</p>	<p>Investigate peer review further. Were the peer reviewers author suggested? Are same peer reviewers reviewing many manuscripts? Are there co-authorships or connections between the reviewers and authors? Ask the authors and peer reviewers for an explanation for your concerns as appropriate.</p> <p>(See also COPE flowcharts on Peer review manipulation suspected during the peer review process and after publication <a href="https://doi.org/10.24318/cope.2019.2.20">https://doi.org/10.24318/cope.2019.2.20</a> <a href="https://doi.org/10.24318/dvuDitEV">https://doi.org/10.24318/dvuDitEV</a> and How to recognise potential manipulation of the peer review process <a href="https://doi.org/10.24318/cope.2019.2.15">https://doi.org/10.24318/cope.2019.2.15</a>).</p>
	<p>Type of data presented is known to be used in publication manipulation or easy to obtain as stock images eg, Western blots.</p>	<p>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.).</p>
	<p>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.</p>	<p>Ask authors for further information - eg, evidence of ethics committee approval, evidence that consent was obtained.</p>

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Confidence level	Type of problem or feature	Action
<p><b>HIGH</b></p> <p>Features in this column alone, undermine confidence in the manuscript or article enough to justify further action.</p>	<p>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.</p>	<p>Ask the authors to respond to your concerns and evidence.</p>
	<p>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.</p>	<p>Ask the authors to respond to your concerns and evidence.</p>
	<p>Evidence that the peer review reports for the manuscript were submitted from the same IP address as the manuscript.</p>	<p>Ask the authors to respond to your concerns and evidence.</p>


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## 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?  
*FEBS Lett.* 594, 583–589 (2020) – Wiley Online Library  
<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  
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Version 2 was conceptualised by Jigisha Patel,  
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 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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