

Bad practices in open peer review: lessons learned from mining MDPI open reports

Gilles Hubert

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Bad practices in open peer review: lessons learned from mining MDPI open reports

Gilles Hubert





My collaborators (and friends)



Guillaume Cabanac





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Cyril Labbé











Peer review process



- Key process in scientific publication
- Mostly unopened
- Confidence in peer reviewers and editors
- But faillible
- Bad practices in scientific papers (fake papers, fraudulent papers, retracted papers...)

Paper Mills do exist!



What about Review Mills?



A 'review mill' that appears to have produced at least 85 similar peer-review reports featuring coercive citation could be an indicator of a new organised form of academic malpractice. The review reports were discovered alongside articles published across several journals run by the open-access publisher, MDPI, and were brought to light by a volunteer-led investigation posted online by Predatory Reports – an organisation that aims to highlight unethical publishing practices.

The work was carried out by María de los Ángeles Oviedo García, a professor of business

Review Mill at MDPI, by María de los Ángeles OVIEDO-GARCÍA, January 12, 2024

https://predatoryjournals.org/news/f/review-mill-at-mdpi

[...] a set of 85 very similar review reports in 23 journals published by MDPI [...] a standard text was copied and pasted to every manuscript regardless its content, following two patterns (type A and type B).



The manuscript "Green dynamic kinetic resolution-stereoselective acylation of secondary alcohols by enzyme-assisted ruthenium complexes" is very interesting work. In this study, The resulting catalytic system of the ruthenium racemization catalysts and enzymatic acylation led to chiral esters obtained by dynamic kinetic resolution. The immobilized catalytic system in the ionic liquid expresses the same activity and selectivity as the homogeneous system while allowing for convenient separation of the desired products. Additionally, the efficient reuse of the catalytic system has been demon strated fulfilling the paradigm of green processes. I believe this topic is of great interest to our reader, I think it needs minor revision before it is ready for publishing. So, I strongly recommend this manuscript for publication in the Journal of Catalysts with major revisions.

- 1. In this manuscript, the authors did not explain the importance of uthenium complexes in the introduction part. The authors snould explain the importance of ruthenium complexes.
- 2. The author should provide reason about this statement with recent references. The immobilized catalytic system in the ionic liquid expresses the same activity and selectivity as the homogeneous system while allowing for convenient separation of the desired products.
- Introduction part is not impressive and systematic. Cite the following articles in the introduction part. (i) 10.3390/molecules27196580 (ii) 10.3389/fchem.2022.995820
- 4. The authors should justify the following statement " he possibility of creating an efficient heterogeneous catalyst in which the ruthenium complex is non-covalently attached to support was also sought due to the simplicity of the system and the least influence of the catalytic properties".
- 5. The authors should explain regarding the recent literature why 'The studies showed that neither the MWCNT support nor the IL affects the activity of the ruthenium catalyst".
- 6. The authors should explain the statement with reference to the literature. "This is because the catalyst is confined in a small volume of the IL as opposed to being dispersed throughout the entire volume in the absence of the addition of an IL".
- 7. Comparison of the present results with other similar findings in the literature should be discussed in more detail. This is necessary in order to place this work together with other work in the field and to give more credibility to the present results.
- 8. The conclusion part is very weak. Improve by adding the results of your studies.
- 9. The authors should pay more attention to the English grammar, and the abbreviation of journal names in Ref.

Is it possible to automatically detect bad practices?

Analysed dataset

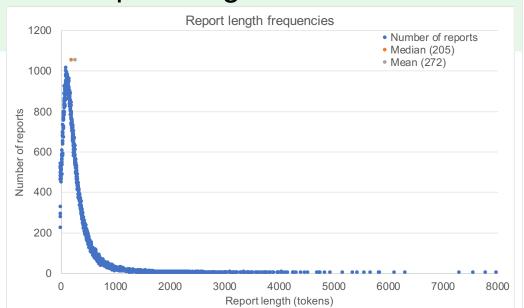
- MDPI Open Peer Review Corpus 2 Version 2.0
- Scraped by Miłkowski et al. (2023, https://doi.org/10.18150/shkp7b)
- 170 GB
- 135,437 articles and their associated reports (between 2011 and 2022)

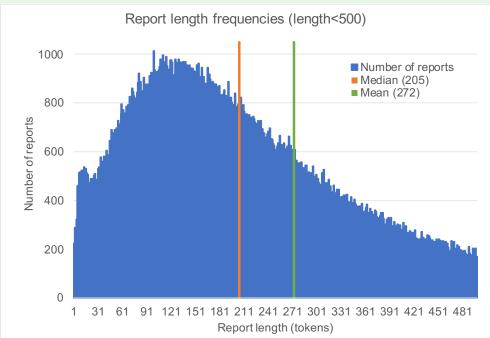
Chosen approach

- Focus on Round 1 reports in plain text (i.e., excluding those uploaded as attached files)
 → 320,380 reports (/ 353,131)
- Statistics on report length
- « Strong » inter-textual similarity between reports
- Common word sequences (10+)
- Identified references (DOIs) suggested by reviewers with regular expressions

MDPI Open Peer Review Corpus – Report length

Result 1: Report length





Some very very long reports

• For example, Report 3 for paper pr10051002 is the same text pasted 50 times.

Quite a lot of short reports

- 223 'nano' reports consistuted of 1 word only ('accept', 'none', 'Nil' or 'N.A.')
- 'Micro' reports of less than 20 words account for 2.7% of the dataset.

'Nano' reports

Paper su14095543

Reviewer 2 Report

.

Author Response

Thank you very much for your support and affirmation of this article

Paper life12101650

Reviewer 1 Report

Nil

Author Response

Thank you to our affirmation

Paper agriculture 12020303

Reviewer 1 Report

no

Author Response

Editor

MDPI-Agriculture

15th January 2022

Dear Editor,

Subject: Submission of revised paper 'Climate Resilience and Environmental Sus Dimensions of Water Security Modelling. Thank you for your email dated 8th Janu above-mentioned manuscript. We appreciate the valuable comments and suggestio approximate an environmental Sus

Technical issues: bogus scraping and editorial management

Paper aerospace9100612

In the dataset

Reviewer 1:

Summary:



Round 1

Reviewer 1 Report

Summary:

The paper proposed a new complexity metric, which is an adaptation of Sinh and changes are supposed to make the metric suitable for the use with MBS in three case studies and the results are discussed.

Feedback:

Positive: + the paper addresses a timely topic and uses the right/suitable approvides a comprehensive overview and the case studies add to the substan addressed: - the differences between the new metric and the one it is based advantageous and necessary - a general lack of comparison to recent literatic distinction regarding the assumptions made is not clear regarding the sours (lack of explanation of disadvantages/boundaries - format errors, missing cap pg. 4,7, ...), overlapping text (e.g. pg. 6) - very very wordy case study explanathe results; the setups do not need to be explained in such an extensive way



Paper agriculture 11080744

In the dataset

Reviewer 2:

none

On the website

Round 1

Reviewer 1 Report

Good work addressing comments

Reviewer 2 Report

none

This manuscript is a resubmission of an earlier submission. The following is a list of the peer review reports and author responses from that submission.

Round 1

Reviewer 1 Report

The work is prepared quite diligently. I have no major remarks. However, I have a few observations:

'Micro' reports

Paper admsci12030097

Reviewer 1 Report

Update the literature review/references.

Author Response

The author had updated literature related to the [30]

Paper aerospace8070179

Reviewer 1 Report

This paper is good and acceptable quality.

Author Response

Thank you for your support.

Paper adolescents1010001

Reviewer 1 Report

Authors should be congratulated.

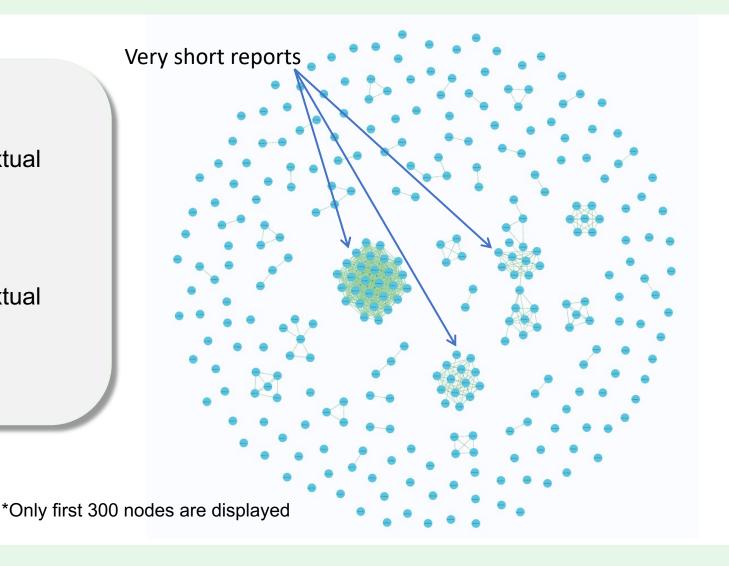
Author Response

Many thanks for yor kind comments

Result 2: Inter-textual similarities between reports

Regarding Report-report similarities

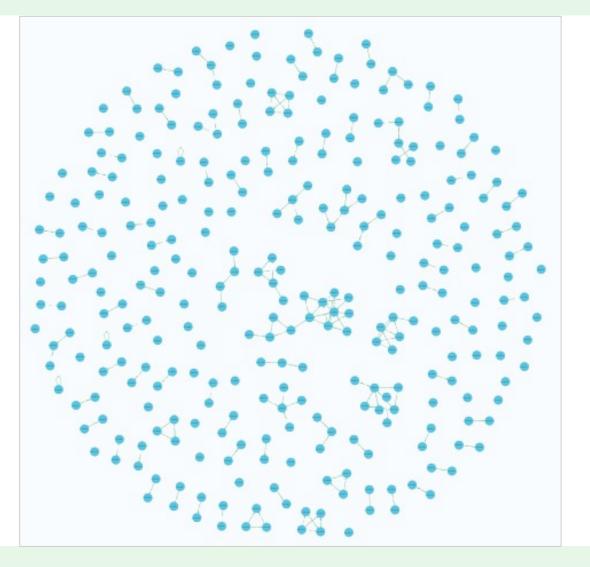
- 48,626 pairs of reports with inter-textual similarity >= 90%
 0.8 % of reports (2493 reports)
- 74,170 pairs of reports with inter-textual similarity >= 75%
 1.6 % of reports (5191 reports)



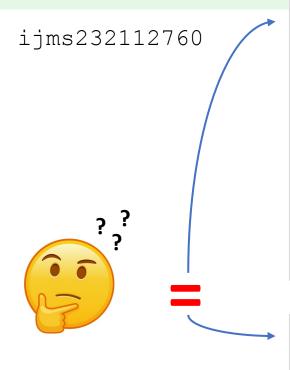
Result 2: Inter-textual similarities between reports

Regarding report-report similarities

 reports with more than 3000 characters and inter-textual similarity >= 75% with at least one other report



Report-report similarities show identical reports for the same paper



Reviewer 2 Report

In this article, Washburn et al. assess the activation of the complement system in response to the allograft of Sertoli cells. They observed that the Sertoli cells showed substantial protection against humoral immunity. The microarray experiment with the mouse Sertoli cells showed enhanced expression of complement inhibitory proteins (CIPs). They conclude by suggesting that since Sertoli cells exhibit protection from complement-mediated tissue rejection, it could be a novel strategy in diabetes for enhancing the success of islet grafts.

Overall, the study seems to highlight the protective mechanism exhibited by Sertoli cells' graft in treating diabetes. The study is in line with a previous study (Fallarino et al., 2009) and one from the same group (Kaur et al., 2018). Although the findings are interesting and certainly pave the path for exciting avenues, at the current stage, several factors limit the enthusiasm in this study:

- - -

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Report–report similarities show groups of reports almost identical

ma13235361

Reviewer 5 Report

- The originality and the scientific value of the subject are good. Indeed, an important problem having direct applications is treated.
- 2) The Abstract is concrete as it gives the summary of this research work in a concise manner. In addition, it is sufficiently supported by the results obtained during research.
- 3) The Introduction Section in its current form is not adequate. In this context, I recommend the authors to further analyze and discuss the results of Refs. [1-3], [4-10], [11,12] and [13-15]. Besides, the differences/advantages of the present investigation compared to other literature works should be written out at the end of this Section in a much more detailed and comprehensive manner.
- 4) The materials, their applications, applied methods and especially the use of the investigated material are explained in detail. The composition, the origin of the material used, dimensions of specimens etc are all mentioned.
- 5) Presentation of the experimental work is very thorough. Process and prerequisites of sample preparation are clearly mentioned. However, the authors are kindly recommended to provide some further technical details about the laboratory equipment that they used to carry out their experiments.
- 6) The performance and clarity of results and data are good. Yet,

ma13245739

Reviewer 2 Report

- The originality and the scientific value of the subject are good. Indeed, an important problem having direct applications is treated.
- 2) The Abstract is concrete as it gives the summary of this research work in a concise manner. In addition, it is sufficiently supported by the results obtained during research.

Nonetheless, given that the overall text contains many abbreviations, it is the reviewer's opinion that the authors should definitely add a nomenclature at the beginning of the manuscript.

3) The Introduction Section in its current form is not adequate. In this context, I recommend the authors to further analyze and discuss the results of Refs. [1-3], [4-10], [11,12] and [13-15].

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ma13163503

Reviewer 3 Report

- The originality and the scientific value of the subject are very good.
 An important problem having direct applications is treated.
- 2) The Abstract in its current form is not sufficient. In particular, it should be supported in a more effective manner by the results obtained during research, because the first part which is read by Journal's audience is Abstract and thus it should reflect the novelty and perform the main results.
- 3) The Introduction Section in its current form is not adequate. In this context, I recommend the authors to further analyze and discuss the results of Refs. [5-8], [9-11], [15-19], [20-22] and [23-27]. In addition, the differences/advantages of the present investigation compared to other literature works should be written out at the end of this Section in a much more thorough and comprehensive manner.
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Report–report similarities show groups of reports almost identical

ijms23010134

Reviewer 2 Report

I read with great interest the manuscript, which falls within the aim of this Journal. In my honest opinion, the topic is interesting enough to attract the readers' attention. Nevertheless, authors should clarify some points and improve the discussion, as suggested below.

Authors should consider the following recommendations:

- Manuscript should be further revised in order to correct some typos and improve style.
- Accumulating evidence suggests that one of the most important
 mechanisms of PCOS pathogenesis is the insulin-resistance. For
 this reason, the use of insulin-sensitizers, such as inositol isoforms,
 gained increasing attention due to their safety profile and
 effectiveness. Authors may better discuss this point, taking to
 account these recent articles: PMID: 26927948; PMID: 27579037.

biomedicines10020456

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ijerph182111274

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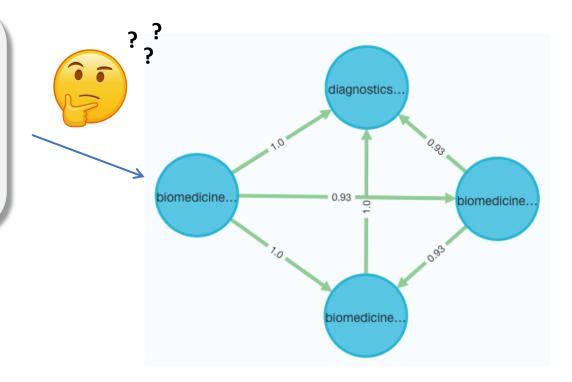
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Result 2: Inter-textual similarities between reports

Regarding report-report similarities

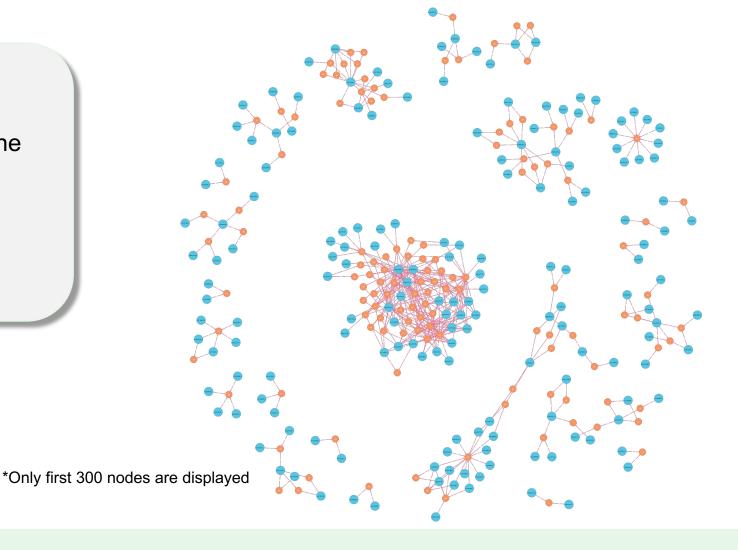
paper having 100% of reports similar to(> 90%) another report



Result 3: Reports sharing long sequence of words (10+)

Regarding report sharing chunks of text

 36,476 reports sharing at least one sequence of words (10+) with another report
 11.4 % of reports



Result 3: Reports sharing long sequence of words (10+)

s20174734

Reviewer 1

This work is very interesting and presents a good scientific quality and could be relevant. It is well presented from the point of view of the Methodology and Results. Its publication is recommended. Just some aspects of improvement that the authors could consider: The abstract must be rewritten [...] more clearly. It is recommended [...] more clearly represented in figure 6 Bibliography is scarce and should be reviewed and updated to improve the quality and interest of readers and researchers Once these considerations have been made as a recommendation, the work could be published with the approval of the editors.

app12136469

Reviewer 2

This paper starts by presenting state-of-the-art techniques [...] by short-term photoplethysmography (PPG). This work is interesting and presents good scientific quality and could be relevant. It is well presented from point of view of the Materials and Method. Its publication is recommended. Just some [...] the results that were briefly described in Section 3 "Results". The bibliography is scarce and should be reviewed and updated to improve the quality and interest of readers and researchers Once these considerations have been made as a recommendation, the work could be published with the approval of the editors.1 There are many abbreviations and several markers, for this reason. I suggest to the authors report a short table with a short description of each parameter. 2) In section 1 (Introduction) the authors should extend the description of HRV and PRV. I think that is necessary for this paper that the authors quote the prior works. Moreover, in row 35 the authors write "SDNN, pNN50" without specifying what means. 3) Which type of PPG sampling device has been used? Add details. Which kind of pipeline has been used to stabilize/filter the raw PPG signals with respect to artefacts (body movements, etc..) or electronic noise? Add more details about the above questions if the authors consider it would be useful. 4) The figures must be [...]

s20174734

Reviewer 2

Summary: The authors proposed [...] to detect the photoplethysmographic signals (PPG). The idea is [...] the authors should extend the description of mOEPS sensor. The reader does not [...] your case is a self-citation but personally I think that is necessary for this paper that the authors quote the prior works. Moreover, in row 54 the authors write "mOEPS" without specifying whats mean. In row 59 the authors write "previous published work" it is necessary the reference. Some abbreviations are also missing. Furthermore there are many abbreviations, for this reason, I suggest to the authors to report a short table with a short description of each term (mOEPS, PCB, PD, VDD, MCU, LPF...) The following typographical error was detected in line [...] like the previous paragraph (The same things for line 203 and 204). Moreover about this section, Which type of PPG sampling device has been used? Add details. Which kind of pipeline has been used to stabilize/filter the raw PPG signals with respect to artefacts (body movements, etc..) or electronic noise? Add more details about the above questions if the authors consider it would be useful. Furthermore, in line 208 [...]

Conclusions & Future work

- Questionable practices exist in MDPI <u>open</u> reports... Even few compared to the processed volume...
- Study limitations mainly due to a not so clean and very incomplete dataset
- More research is needed to improve malpractice detection and assess its prevalence in (open) peer review reports
- Encourages open access to peer review reports and raises questions about all the review processes not made public

https://www.mdpi.com/about/announcements/1405







12 October 2018

Open Peer Review for all MDPI Journals

It is now a little over four years since MDPI first started to offer open peer review. Given the popularity of this feature in the 14 journals operating it until now, we have decided to extend options for open reports and open identities to all MDPI journals. This means that authors have the option for the review reports and author responses to be published alongside their article, and reviewers have the option to add their name to the published review report. For further background and information, see our blog post.

