Review of: "Behavioral optimization in Scientific Publishing"

Alessia Iancarelli[1]

1 Northeastern University

Potential competing interests: No potential competing interests to declare.

Overall feedback: the author highlights an important issue with peer reviewing and provides solutions. The paper is thought provoking and extremely interesting to read. However, it should be improved in terms of clarity and flow prior to publication. With minor edits, I would give this paper a 4/5 rating. I hope to see it published.

Main focus:

The author argues that peer-reviewed scientific publishing is subject to biases. The biases stem from individuals optimizing their own cost-benefit outcomes, resulting in conflicts with collective goals. The current publishing trend leads to a concentrated scientific community and biases based on gender, ethnicity, reputation, and conformity. To improve science, a publication system based on human behavior principles, minimizing conflicts and biases, is necessary. This shift requires active participation from authors to revolutionize scientific publishing.

General review:

The introduction provides a comprehensive overview of the historical context and purpose of peer review, setting the stage for the subsequent discussion.
The author effectively highlights the limitations and biases of the current peer review system, drawing from multiple studies and references.
the author addresses the significance of confirmation bias and conformity bias, shedding light on their potential impact on the scientific publishing process.
The paper's objective is clearly stated, indicating the intention to analyze cost-benefit optimization and propose solutions to minimize biases.

I liked the paragraph where the author lists all the**current issues with peer reviewing and goes through alternative methods**: Alternative methods like double-blind and open peer reviews are being explored, but challenges remain. Incentivizing reviewers and allowing them to disclose their names can improve review quality. Transparency and public scrutiny align with scientific principles. Review reports for rejected papers can be published. Transparent editorial decisions are essential.

The author proposes three main solutions:

1) Transparency and public accessibility of the reviews

2) Recognizable reward credited for reviewing, and for consent to disclose reviewer’s name

3) Authors to ultimately make the publication decision

Question for solution 1):

even though I agree that transparency could be beneficial, I wonder what the author think about the possibility of this causing an increased "conformity bias".

2) I personally love the solution suggested in point 2.

3) I am not sure about point three because authors might be heavily biased in favoring themselves.

suggestions and critics:

- the paper should be proof-read for some minor grammar mistakes. Clarity and flow can be improved.
- I suggest adding a conclusion section at the end.
- in the section "Rationalization and human decision making" I would have preferred to see more citations in support of your claims (I am reffering to the second part of the paragraph).

- paragraph: "Effects of cost-benefit optimization on the quality of science and social justice among the researcher community".

I would rephrase the following sentence: "It is not very difficult to practice good science in a third world country or a university with minimum facilities or even on a citizen science forum. All fields of science do not need huge amount of funding and certain types of work can be pursued with high scientific quality in any corner of the world." I think that it is misleading and not correct to state that "ALL fields of science do not need huge amount of funding" (e.g., space missions, 7T fMRI studies, etc.). Also, I do think that saying that "It is not very difficult to practice good science in a third world country or a university with minimum facilities" it might not be representative of the average sentiment of researchers doing science in universities with minimum facilities. You could rephrase it saying that it is possible to do good science even in certain not optimal circumstances, or you could back up your prior statement with some references.