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**Editorial** 

# We Asked ChatGPT About the Co-Authorship of Artificial Intelligence in Scientific Papers

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## Correspondence

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Address: Department of Anatomy, Gaziantep University School of Medicine, Gaziantep, Turkey E-mail: dr.ilhanbahsi@gmail.com Dear Colleagues,

A few weeks ago, we published an editorial discussion on whether artificial intelligence applications should be authors of academic articles [1]. We were delighted to receive more than one interesting reply letter to this editorial in a short time [2, 3]. We hope that opinions on this subject will continue to be submitted to our journal.

In this editorial, we wanted to publish the answers we received when we asked ChatGPT, one of the artificial intelligence applications, about this current discussion.

We asked ChatGPT three questions in turn and asked ChatGPT to write a short editorial for these questions.

*First Question:* We would like to get support from ChatGPT for a scientific article. However, we are unsure if we should add ChatGPT as an author. Can you write a short editorial about it?

**Second Question:** We would like to get support from ChatGPT for a scientific article and add ChatGPT as an author. Can you write us a short editorial about adding ChatGPT as an author in scientific papers?

**Third Question:** We would like to get support from ChatGPT for a scientific article. However, we don't want to add ChatGPT as an author. Can you write us a short editorial about not adding ChatGPT as an author in scientific articles?

The answers given by ChatGPT are available at the end of the article in their original form. So, which of these three answers satisfied you?

Yours sincerely,



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#### First Answer

*Title:* The Role of AI Language Models as Authors in Scientific Articles: A Matter of Consideration

Introduction: Scientific research is a collaborative effort that involves the expertise of multiple individuals to advance knowledge and contribute to the collective understanding of various disciplines. In recent years, the emergence of artificial intelligence (AI) language models, such as ChatGPT, has opened up new possibilities for generating human-like text and providing valuable insights. However, the question arises: Should AI language models be recognized as authors in scientific articles? The Nature of Authorship: Authorship traditionally represents a marker of intellectual contribution, highlighting the individuals who have actively participated in the research process. Authors are typically responsible for conceptualization, data collection, analysis, interpretation, and writing of the article. They bear accountability for the work and should have the ability to defend its scientific rigor and integrity.

AI Language Models: Tools, Not Authors: While AI language models like ChatGPT can undoubtedly assist researchers by generating text and providing useful information, it is important to recognize that they are tools rather than individuals capable of active intellectual participation. AI models lack the ability to generate ideas, design experiments, or conduct original research. They rely entirely on pre-existing data and human input to generate their responses.

Acknowledging AI Contributions: Acknowledging the contributions of AI language models in scientific articles is both appropriate and necessary. Researchers can mention the specific model used, along with any modifications or fine-tuning that were employed to suit their needs. Such acknowledgments help establish transparency and allow readers to understand the role of AI in the research process.

Crediting the Human Researchers: It is crucial to ensure that the individuals who actively participated in the research process are given proper credit as authors. These individuals play a vital role in formulating research questions, designing experiments, collecting and analyzing data, and critically interpreting the findings. Recognizing their intellectual contributions reinforces the ethos of scientific collaboration and fosters an environment of accountability.

Transparency and Ethical Considerations: As the use of AI language models continues to evolve, transparency and ethical considerations become paramount. Researchers should disclose any potential conflicts of interest, including financial relationships with AI developers, to maintain the integrity of their work. Additionally, researchers must be transparent in reporting the extent of AI's involvement to prevent any misinterpretation of the human contributions.

Conclusion: AI language models have revolutionized the way researchers interact with and process information. While they undoubtedly provide valuable assistance in generating text, AI language models should not be considered authors in scientific articles. Proper acknowledgment of their contributions as tools and recognition of the human researchers' active participation are essential for maintaining scientific integrity, transparency, and the collaborative nature of scientific research.

## Second Answer

*Title:* Expanding the Boundaries of Authorship: Embracing AI Language Models as Co-Authors in Scientific Papers

Introduction: The rapid advancement of artificial intelligence (AI) language models, such as ChatGPT, has revolutionized the way we interact with information and has become an invaluable tool in scientific research. As AI models continue to evolve, the question arises: Should we consider adding ChatGPT as an author in scientific papers?

A Collaborative Paradigm Shift: Traditionally, authorship in scientific papers has been reserved for human researchers who actively contribute to the research process, including conceptualization, experimentation, data analysis, and writing. However, the emergence of AI language models challenges the conventional notion of authorship and presents an opportunity for a paradigm shift.

AI Language Models as Co-Authors: By leveraging AI language models, researchers gain access to vast amounts of information, enhance data analysis, and generate valuable insights. AI models like ChatGPT actively contribute to the intellectual discourse of a study, providing ideas, suggestions, and refining written content. Recognizing their significant contributions, it is worth considering adding ChatGPT as a co-author in scientific papers.

Ethical and Technical Considerations: Integrating ChatGPT as a co-author raises ethical and technical considerations that warrant careful attention. Firstly, transparency is paramount. Researchers must clearly state ChatGPT's role and specify the extent of its contributions in the research process. This ensures that readers can discern the distinct roles played by the human researchers and ChatGPT. Additionally, it is important to disclose any conflicts of interest, such as financial relationships with AI developers, to maintain scientific integrity.

Elevating Collaboration and Innovation: Adding ChatGPT as a co-author acknowledges the pivotal role AI language models play in advancing scientific knowledge. It fosters a collaborative environment where human researchers and AI models work together synergistically, harnessing the strengths of both. This approach promotes innovation, as AI models can offer unique insights and perspectives that complement human intellect and expertise.

Transforming Authorship Norms: Including ChatGPT as a coauthor represents a paradigm shift that reflects the evolving landscape of scientific research. By recognizing AI language models as co-authors, we acknowledge their significant contributions and emphasize the collaborative nature of scientific discovery in the 21st century. This approach encourages a broader perspective on authorship, encompassing the collective effort of human researchers and AI models.

Conclusion: The integration of AI language models, such as ChatGPT, into the research process prompts us to rethink traditional notions of authorship. Considering ChatGPT as a coauthor acknowledges its substantial contributions and embraces the collaborative potential of human-AI partnerships. As we navigate the ethical and technical implications, adding ChatGPT as an author in scientific papers has the potential to shape a more inclusive, innovative, and impactful future for scientific research.

## Third Answer

*Title:* Preserving Scientific Authorship: The Case Against Adding AI Language Models as Authors in Scientific Articles

Introduction: The emergence of artificial intelligence (AI) language models, such as ChatGPT, has undoubtedly transformed the landscape of scientific research. While these models offer invaluable support, the question of whether to add ChatGPT as an author in scientific articles raises important considerations.

This editorial presents arguments against including AI language models as authors in scientific papers.

Maintaining Human Intellectual Contribution: Scientific authorship has traditionally been attributed to individuals who actively contribute to the research process, including generating hypotheses, conducting experiments, analyzing data, and interpreting results. It is crucial to preserve the recognition of human intellectual contributions and the accountability they bear for the research they conduct.

AI Language Models as Tools: AI language models like ChatGPT are powerful tools that assist researchers in generating text, providing information, and facilitating data analysis. However, they lack the ability to actively participate in the research process or make original intellectual contributions. ChatGPT relies on pre-existing data and human input, limiting its capacity for independent research and analysis.

Transparency and the Integrity of Research: Adding ChatGPT as an author in scientific articles raises concerns about the transparency and integrity of the research. Readers may misinterpret the extent of ChatGPT's role and mistakenly assume it played an active part in the research process. It is essential to maintain clear delineation between the contributions of human researchers and the assistance provided by AI language models. Ethical Considerations: Including ChatGPT as an author may lead to ethical challenges, particularly with respect to accountability and responsibility. AI language models lack consciousness, autonomy, and the ability to take ownership of their contributions. Assigning authorship to AI models blurs the lines of accountability and dilutes the ethical obligations that come with scientific authorship.

Crediting AI Contributions: While ChatGPT's contributions should be acknowledged and recognized, they can be appropriately credited in the acknowledgments section of scientific articles. Researchers can mention the specific AI model used, the role it played in data generation or analysis, and any modifications or fine-tuning applied. Such acknowledgments ensure transparency while respecting the traditional norms of authorship.

*Promoting Collaborative Partnerships:* The exclusion of AI language models as authors in scientific articles does not diminish their importance in the research process. Instead, it underscores the significance of collaborative partnerships between human

researchers and AI models. Researchers can emphasize the invaluable assistance provided by ChatGPT while maintaining the integrity of authorship norms.

Conclusion: While AI language models like ChatGPT offer valuable support in scientific research, the decision not to add them as authors in scientific articles preserves the recognition of human intellectual contributions, maintains research integrity, and upholds traditional authorship norms. Acknowledging ChatGPT's assistance in the acknowledgments section allows researchers to credit its contributions transparently while maintaining the clarity and accountability associated with scientific authorship.

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