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## COMMENTARY

# The use of “tortured phrases” in science communication

JANMEJAYA SAMAL

### Abstract

*A recent publication in an Indian journal stated that “Charak is known as the dad of Ayurveda (or) the dad of Ayurvedic medication.” Such inappropriate terms used in science communication are called “tortured phrases.” The use of such phrases could suggest deeper issues in science communication, such as concealment of plagiarism and fraudulent research facilitated by paper mills. Non-expert writers and AI tools are being used in the mass production of research articles in paper mills that report fabricated data, graphs and tables mimicking legitimate research papers. Although efforts are being made to detect tortured phrases, poor editorial review allows the publication of articles with tortured phrases in reputed journals. This compromises scientific integrity and leads to wastage of resources. Proper screening, rejection of inappropriate language and transparency in the editorial process can help to curb this unethical practice.*

**Keywords:** duplicate publication, ghost author, paper mill, plagiarism, tortured phrases

The term “tortured phrases” refers to inappropriate phrases used instead of established scientific ones, as in the case of Charaka being called the “dad of Ayurveda” instead of the “father of Ayurveda” [1]. These could be language errors arising from unfamiliarity with the English language, and can be corrected if warranted by the value of the content. However, one frequently comes across the repeated use of such awkward non-standard terms in academic papers. While this is most commonly seen among early career researchers, who may not be well-versed in specialised scientific terminology [2], research articles containing multiple “tortured phrases” may indicate the use of templates from reputed journals being scrambled to escape plagiarism detection. These may not be detected due to flaws in oversight in the affected journals [3]. An online platform, Problematic Paper Screener (<https://www.irit.fr/~Guillaume.Cabanac/problematic-paper-screener>), leverages human assessment and automatic machine detection to flag problematic published articles using such strange terms [4], which could be products of “paper mills”.

“Paper mills” involve the mass production of research papers [5], by using software to produce papers, or employing writers who are not experts in the given field of research. Many such paper mills are able to counterfeit layout and design and produce exact micrographs, photographs, graphs, and numerical datasets to write fake research papers [6]. Generative artificial intelligence (AI) makes it difficult to detect such frauds. Many reputed publishing houses such as Springer, Taylor & Francis, Wiley, and the Public Library of Science have fallen prey to paper mills [7]. Despite the difficulties, experienced researchers can detect plagiarism using specific methods and scrutinising the duplication of graphics, out-of-context and meaningless texts, questionable peer review processes and similarities in grammatical structure [8-10].

### The repercussions

The idea that a fraudulent paper, using reverse translation software, can be published without being noticed by the editor, reviewer, or publisher raises serious doubts about the quality of editorial review, and about the ownership and management of the research publication business. More importantly, the publication of fraudulent research affects the scientific integrity of research [11]. A genuine researcher may be taken in by such fraudulent research and cite it, muddying the waters further.

Such bogus papers, even after retraction, can still be found through searches on Google. These practices pose a real threat to the academic community and are detrimental to healthcare research. This is a breach of the trust of editors and reviewers of journals besides leading to a complete waste of limited resources [12].

### What can be done

To improve the quality of health research and communication, stricter ethical and screening guidelines are required. These guidelines should include an extra screening mechanism for “tortured phrases” and the rejection of articles that use imprecise language [13]. According to

Committee on Publication Ethics (COPE) requirements and International Committee of Medical Journal Editors (ICMJE) recommendations, it is mandatory to acknowledge expressly the use of any third-party service, particularly those linked to language enhancement or editing [14]. If repeated usage of tortured phrases is found in research publications, the article must be rejected without even considering technical modifications or any further consideration. Non-native English speakers can enhance the quality of their writing by using paraphrasing tools; but should refrain from copying and pasting content verbatim from the tool because every word in a thesaurus does not have exactly the same meaning as the desired expression. Moreover, writers must acknowledge the use of editing services.

## Conclusion

The rampant use of generative AI and reverse translation software to bypass plagiarism checks has become a normal practice among fake researchers. Given this scenario, genuine researchers, journal editors and academic institutions should prioritise scientific integrity. Fostering transparency and authenticity in scientific publications can enhance the global relevance and reliability of all systems of medicine. Academic institutions must also inculcate a sense of scientific accountability in students and sensitise them about the need to adhere to certain standards while disseminating research. Moreover, all stakeholders directly and indirectly involved in research must promote ethical practices in research and support initiatives of agencies like COPE and Retraction Watch to combat paper mills, plagiarism and bogus research.

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