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Embrace responsible ChatGPT usage to overcome language barriers in academic writing

Change is the law of life. And those who look only to the past or present are certain to miss the future.

John F. Kennedy

ChatGPT is among the well-known artificial intelligence (AI) chatbot tools in the recent surge of AI tools, including GPT-4, Google Bard, Bing Chat and various image, audio or video generators. It has seamlessly and successfully integrated into the daily routines of many, assisting with tasks like trip planning, providing concise answers to online queries and refining language skills.

On the other hand, there have been significant editorial concerns related to even the slightest use of ChatGPT in academic publishing, with some researchers asserting that it may compromise the integrity of scholarly writing [1]. Some journals have also made it obligatory for authors to report any use of ChatGPT before completing a submission, either in the methods section or as an acknowledgement [1, 2]. AI tools should not necessarily be condemned outright as potential threats to academic integrity. There are in fact several useful aspects to consider. The use of ChatGPT as a language editing tool may not necessarily be unethical, especially when publishers and independent companies provide similar language and academic editing services for manuscripts before submission [3].

It is inevitable that the extensive use of large language models will emerge in scientific journals. A recent publication reported an increase in articles written with the assistance of AI [4]. At the same time, detecting this use will become increasingly difficult as the tool's improvements surpass the development of our detection capabilities [5].

In reality, ChatGPT is not confined to being seen solely as a deceptive tool; it can excel as a word processing tool. It cannot be denied that the use of artificial tools will surely become a regular and integral part of future academic writing. Our mission should be to embrace them by understanding their capabilities, harness their positive aspects to the fullest and establish limits to address potential risks to the integrity

and ethical standards of scholarly writing, rather than condemning their use outright or trying to shortsightedly ban it totally when it comes to academic articles [6].

THE CURRENT STANCE OF THE SCIENTIFIC COMMUNITY ON CHATGPT

There appears to be at least some confusion at the editorial level in terms of what ChatGPT is capable of in assisting researchers. Articles published in peer-reviewed journals that overly exaggerate the true capabilities of ChatGPT might serve as evidence of this [7, 8]. Despite such claims, ChatGPT may not be effective in conducting a literature review, selecting relevant articles, diagnosing clinical conditions or finding proper references [7, 9]. Similarly, a previously published editorial [1] focused on highlighting its limitations and the associated risks of its irresponsible use. It issued a cautionary statement to all authors, emphasising the need to use ChatGPT cautiously and mandating the reporting of its use in the methods section of manuscripts, alongside the acknowledgement section. Others have condemned the potential of AI tools jeopardising scholarly writing [6] or even diversity in science [10].

While a joint stance against any use of ChatGPT in orthopaedic academic publishing was published [1], several other fields in academic writing have been more welcoming to the benefits of chatbots, with a substantial body of literature on how to more correctly utilise ChatGPT in scholarly writing [2, 11, 12].

We believe that understanding the true capabilities of ChatGPT is crucial for developing appropriate editorial regulations. It would be questionable to request authors to report only the stylistic or assistive uses of ChatGPT, such as language editing, rephrasing, outlining, refining their original text or determining relevant Medical Subject Headings (MeSH) terms. Currently, numerous editorial services taking care of similar matters are available worldwide, and authors typically only voluntarily disclose their paid

service usage when submitting their manuscripts [13]. Additionally, various online manuscript and language editing tools exist, allowing authors to upload their manuscripts to receive feedback on language use, references and writing style. While editorial authorities often overlook the use of these tools, deeming any use of ChatGPT as questionable and requiring self-reporting could further disadvantage non-native English writers in academic writing.

LANGUAGE BARRIER REMAINS A MAJOR PROBLEM IN THE BORDERLESS WORLD OF SCIENCE

The language barrier may be one of the most significant challenges in the relatively borderless scientific world. Despite technological advances, non-native English users face significant issues, such as spending considerably more time—and money—writing manuscripts or preparing presentations, which puts them at a disadvantage compared with native speakers [14]. While English is the native language of less than 10% of the world's population, and only 20% can speak the language, nearly 75% of academic publications are in English [15].

A recent study identified that authors from English-speaking countries receive a significantly larger positive bias when being considered for acceptance or publication, that is, their manuscripts sent to reviewers for peer review. This bias has been more effectively neutralised by implementing a double-blinding process for the reviewer and editorial procedures [16]. Non-English articles still represent a considerable amount of knowledge and effort, and neglecting them causes a significant bias in research [17]. On the other hand, scientists should strive to be as diverse and inclusive as possible when engaging in international collaborations. Recently, a scientific journal declared its stance on overcoming language difficulties by publishing non-English translations and summaries whenever possible [18]. ChatGPT might be used for these purposes by editorial offices of academic journals.

ChatGPT has been reported and projected to be successfully used for language editing and stylistic purposes [2, 18]. Its application in manuscript 'polishing' could enhance authors' productivity by sparing them time in writing. These benefits can be even more significant when ChatGPT's translation capabilities are utilised. This would assist both authors and diligent editors and reviewers in reducing the time spent correcting spelling or grammar issues, allowing them to focus on the scientific content. However, the potential benefits of ChatGPT may not be limited to just this.

CHATGPT MODEL AND ITS BENEFITS IN ACADEMIC WRITING

ChatGPT is a language generation model designed to generate human-like text based on its input. There have already been a great number of publications on its use, history and limitations [6, 19–21]. It can provide text from previous data it was fed with. It can translate or polish the language and grammar of provided texts, help brainstorm ideas and prepare an outline based on the data it is given [11, 12, 22]. It can summarise your provided text or write an abstract or conclusion for your provided manuscript [23].

However, there are many drawbacks to ChatGPT, especially if it is not provided with proper input. It cannot create original or novel content or critically review a written text other than for formatting or outlining purposes, nor can it distinguish right from wrong. It can misinterpret previously available data and make up stories, individuals or false scientific references, especially when asked for tasks it was not originally intended for [9, 22]. It can create titles for manuscripts that sound close to real, being complete with real authors, institutions and real journals. As dangerous as this may sound, it is relatively easy to identify if the user is accustomed to its limitations and has a good sense of what it can be used for, considering its abilities [9, 22]. The findings of a prior study suggested the need for caution when obtaining answers related to orthopaedic surgery from ChatGPT. This research revealed that ChatGPT's responses were accurate in 65% of cases, either entirely or to a significant extent, but were entirely inaccurate in 15% of instances [20].

ChatGPT can either rephrase an existing text or improve the language by correcting grammar errors or changing used words or sentence structures, refining it for better readability, or translating the given input into a completely different language. But if the user feeds or teaches it with input, it selectively uses this input to improve it, such as reshaping the input into structurally more solid content, erasing repetitions, completing interparagraph connections for better readability and editing the language for correct spelling or other grammatical errors [24]. This is especially important if the user is not a native speaker of that language. It is noteworthy to mention that texts originally written by humans and edited solely for refinement and language by ChatGPT are not identified as AI-generated, but rather as original content by online AI detection tools [5].

ChatGPT can also provide users with relevant MeSH terms for their articles. Currently, only a limited number of journals provide a MeSH term tree during submission. Regardless of the keywords or MeSH terms used by authors, all final MeSH terms in PubMed-indexed manuscripts are manually assigned by librarians at the National Library of Medicine (NLM) [25]. Based on personal experience, ChatGPT can be

valuable in determining MeSH terms more accurately upon providing the abstract and/or manuscript, as it appears to identify relevant MeSH terms more efficiently than NLM's own online MeSH term generator, 'MeSH on Demand'. This advantage of ChatGPT could enhance the categorisation and searchability of available research articles, facilitating more efficient and comprehensive searches for researchers.

ACCOUNTABILITY, PLAGIARISM, RISKS OF CHATGPT AND CULTURE OF HYPER-PRODUCTIVITY

It is crucial to emphasise that the responsible use of ChatGPT, including the incorporation of text generated by ChatGPT into manuscripts or the use of content that may lose its intended meaning during rephrasing or translation, remains the sole responsibility of the authors. ChatGPT should never be considered as an author in manuscripts, but rather as an assisting tool solely for stylistic and linguistic improvements.

AI, including language processing tools, should not be viewed as a substitute for creative or critical thinking [10, 26]. It cannot replace human expertise, assessment or hypothesis-driven scientific inquiry. The current version of ChatGPT will provide the user with fake references if the user specifically demands citations [9, 22]. It cannot provide plausible references to its statements, as it is a language-processing tool and not a researcher.

Although ChatGPT or other AI tools are now under close inspection, it should be remembered that unethical authorship has been and will be an issue of scholarly writing and education in general. Students are reported to have long been able to outsource essay writing to human third parties [11], whereas paid academic editing services are advertised online with acceptance rates of their processed articles [27, 28].

The primary responsibility for maintaining academic integrity and ethical scholarly writing lies with the author, whether they are the corresponding author or another contributor. Reviewers, editors, readers and publishers also bear their own responsibilities in upholding these standards. The overarching goal of academic publishing should be to maintain objectivity, while carefully monitoring for any potential misconduct in the presentation of scientific data. Editorial and publishing guidelines should be in sync with individual accountability, incorporate current technology and align with the standards of the publishing industry to ensure that discrimination is not tolerated in the final product.

The true effectiveness of controlled publishing in preventing plagiarism might have limited effectiveness unless the underlying motivation is addressed on a global scale. The current culture of hyper-productivity in publishing [29], where there is the pressure to publish frequently or face perishing, must be carefully considered, and

measures should be taken to mitigate its detrimental effects. Assessment criteria that prioritise quantitative aspects over qualitative ones are fundamental causes of genuine ethical concerns. This is evident in the rapid growth of paid Mega-Journals (prolific publishers of medical articles) with questionable peer-review processes [30]. It is undeniable that AI tools will play an increasingly significant role in achieving ethically questionable publication success, rather than facing perishing unless this global trend can be reversed. However, this cannot be used as an excuse to undermine their potential appropriate use.

CONCLUSION

In conclusion, AI tools like ChatGPT offer valuable support for academic writing when used responsibly and with a nuanced understanding of their capabilities and limitations. As language processing tools continue to evolve, ongoing observation and oversight will be essential to address ethical concerns. By incorporating the latest AI detectors and establishing clear author guidelines, while simultaneously leveraging ChatGPT to overcome language barriers, enhance writing style and determine relevant MeSH terms, we can significantly improve the efficiency of non-native English writers while still upholding ethical standards. This balanced approach will ultimately foster the advancement of knowledge in a more inclusive and diverse manner.

The version of ChatGPT being referred to in this editorial is GPT-3.5.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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