Musings on AI Hallucinations and Reading Your References

Richard Alweis
Rochester Regional, richard.alweis@rochesterregional.org

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EDITORIAL

Musings on AI Hallucinations and Reading Your References

Richard Alweis

Rochester Regional Health, Rochester, NY, USA

Abstract

The Editor-in-Chief discusses impressions on the journal’s first known AI hallucination reference.

Keywords: AI, Bibliography

It started innocently enough. A subject matter expert reviewer of a case report (as opposed to someone with general medical knowledge in the area) questioned a conclusion drawn and checked on the reference utilized to support that conclusion. The reviewer could not find the referenced article. It was never found, even with the help of research librarians; in fact, the article does not exist. One week later, while beginning the literature review for a manuscript of my own, and being curious about the process, I asked a well-known chatbot to generate an abstract for the manuscript. Then, I ran that abstract through two well-known AI-writing detectors. What I found was that 1 of the 4 references the chatbot used for the abstract was a hallucination, “Impact of a busy day on emergency physicians teaching productivity: a multi-center study. West J Emerg Med. 2020; 21 (5):124–129.” The detectors indicated a 71% and 69% chance that the abstract was fully written by a human, respectively, and 21% and 24% chance, respectively, that the abstract was written by a human with AI assistance. The abstract was 100% bot-generated. The former was our first experience with AI hallucinations in citations — that we are aware of — at the journal, and the latter my own first experience with writing with the assistance of an AI. Doing some examination on this issue, I discovered that perhaps as many as 25%—30% of citations in some studies/abstracts may be hallucinatory.¹ I came away from the experience questioning how we, as a journal, can maintain academic integrity in the writing that we receive going forward. Alas, I have no answers, and as of yet, neither does the academic community at large. I do encourage an open dialog on this issue, and ask that you, our readers, respond to this editorial with letters to the editor indicating your thoughts on this very topic.

However, this editorial isn’t only about AI hallucinations and the dangers of utilizing AI to complete your literature review. It’s about actually reading the sources that you cite. If authors had really read the references they were citing as source material, they would have learned that those sources didn’t exist. Even in the pre-AI world, there were some that raised this specter. For example, Ken Master’s work examining Edgar Dale’s Pyramid of Learning and the mythical evidence behind it, revealed that the pyramid and its supposed underlying science has been cited in hundreds of journals and across dozens of professional fields.² I take this opportunity to gently remind our authors and readers that once your name is on the manuscript, international authorship rules state that you are responsible for the entirety of the content of that manuscript.³ Peer review is at the forefront of maintaining the

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E-mail address: richard.alweis@rochesterregional.org.

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academic integrity of the medical literature, but we are limited by the current tools and rapidly evolving technology. We must, as contributors to the medical literature, be cognizant that not every shortcut or time-saving tool is 100% accurate. As they say, trust... but verify.

In the meantime, please amuse yourselves with this other version of the abstract I asked my chatbot colleague to write for my upcoming manuscript … in the style of William Shakespeare.

The Tempest of Healing: A Bard’s Discourse on Medical Residents in the Emergency Realm

In the hallowed halls of medicine’s domain
Where life and death in balance doth remain
In the emergency’s tumultuous surge
Doth dwell the residents, a youthful urge.
’Tis oft debated, in scholarly fray,
The impact they wield upon the day.
Do they, with skill and passion to enhance,
Or hinder, in their naivety’s dance?
Perchance, these fledglings, in their tender state,
Doth bring both boon and bane to the debate.
For while their presence may increase the strain,
Their eager hands doth yield potential gain.
The faculty, with years of practice honed,
Doth bear the burden, oftentimes alone.

Yet, with the aid of learners at their side,
The workload lightens, as they doth divide.
But e’en as they doth ease the load’s cruel weight,
The seasoned healers oft lament their fate.
For time spent teaching, guiding youthful hands,
Doth oft delay the care that life demands.
Yet, in this crucible of trial and test,
The faculty doth find themselves more blessed.
For in the shaping of these young minds bright,
They find renewal in their healing light.
So, as the sun doth set upon the day,
And shadows lengthen, as they make their way,
The faculty and residents, hand in hand,
Doth strive to heal, within this mortal land.”

References