

# Co-Authoring with an AI? Ethical Dilemmas and Artificial Intelligence

Hadar Y. Jabotinsky\* & Roe Sarel\*\*

*The Artificial Intelligence (“AI”) revolution threatens to change the way which legal articles are written. Authors who previously had to sort through vast amounts of scholarship can now get quick answers from algorithms in a click of a button. While this may speed up legal writing, it may also bear significant challenge for transparency: can editors still trust the content submitted by authors? Would AI influence also how editors review submissions? And are current submission guidelines adequate to deal with AI?*

*Our Article addresses these questions in a three-step process. First, we engaged with ChatGPT—the fastest growing consumer application in history—only a few days after its release. By posing ChatGPT with questions on the ethics of using AI and asking it to convert the responses into an article, we derive new insights on the strength of AI to provide relevant answers as well as its weaknesses of “hallucinated” sources and limited accuracy. Second, we conducted a comparison of ChatGPT to its internet-connected variant of Microsoft’s Bing Chat, using a similar exercise. This comparison enables us to identify the circumstances under which turning to AI would be useful. Finally, we apply our insights to different guidelines of major publishers, which have diverged on their approach toward AI-written text.*

*The Article’s contribution is two-fold: (1) it provides a novel examination of how Generative AI can be used in legal writing and the ethical boundaries of such practices, and (2) it compares the existing publishing guidelines and identifies how these may affect the behavior of authors and editors. We find*

---

\* Senior Researcher and Founder of The Hadar Jabotinsky Center for Interdisciplinary Research on Financial Markets, Crises, and Technology; Research Fellow at Zefat Academic College Law School. Email: hadarjabotinsky@gmail.com.

\*\* Junior Professor of Private Law and Law & Economics, Institute of Law and Economics, University of Hamburg. Email: roee.sarel@uni-hamburg.de.

Previous versions of this Article were circulated under the title “Co-authoring with an AI? Ethical Dilemmas and Artificial Intelligence.” *The authors generated the texts in the appendices in part with ChatGPT, OpenAI’s large-scale language-generation model. Upon generating draft language, the authors reviewed, edited, and revised the language to their own liking and take ultimate responsibility for the content of this publication.*

*that law reviews seem to ignore the issue altogether and emphasize the need to develop AI policies for legal writing.*

Keywords: Legal Writing, Artificial Intelligence, ChatGPT, Ethics, Publishing Guidelines.

INTRODUCTION.....	189
I. CHATGPT AND LARGE GENERATIVE AI MODELS .....	195
II. ENGAGING WITH CHATGPT .....	197
A. General Lessons .....	197
B. Implications for Legal Academia.....	200
III. ENGAGING WITH BING CHAT .....	202
IV. PUBLISHER GUIDELINES ON AI .....	203
A. Guidelines Imposing a Ban on AI.....	204
B. Guidelines Imposing Transparency Requirements .....	205
C. A Mixed Approach.....	207
D. Law Reviews: No Guidelines Whatsoever .....	209
V. HOW DOES CHATGPT EVALUATE ITSELF AS A CO-AUTHOR? .....	213
VI. CONCLUSION.....	214
APPENDIX A: OUR CONVERSATION WITH CHATGPT .....	214
APPENDIX B: OUR CONVERSATION WITH BING CHAT.....	221

## INTRODUCTION

Artificial Intelligence (“AI”) is rapidly advancing,<sup>1</sup> particularly in the area of generative AI—a technology capable of producing new and rich content in response to human prompts.<sup>2</sup> Generative AI systems have been causing quite a commotion in the legal sphere: systems that generate visual art, such as Stable Diffusion, Dall-E-2, and Midjourney,<sup>3</sup> are currently facing major copyright infringement lawsuits, blaming their algorithms of plagiarism.<sup>4</sup>

---

1. See, e.g., Andrea Roth, *Machine Testimony*, 126 YALE L.J. 1972, 2021–22 (2017) (suggesting AI could serve as a witness during trials); Cynthia Estlund, *What Should We Do After Work? Automation and Employment Law*, 128 YALE L.J. 254, 257 (2018) (describing AI as a significant threat to American jobs); Dorothy E. Roberts, *Digitizing the Carceral State*, 132 HARV. L. REV. 1695, 1695 (2019) (book review) (“Government agencies at the local, state, and federal levels increasingly make automated decisions based on vast collections of digitized information about individuals and mathematical algorithms that both catalogue their past behavior and assess their risk of engaging in future conduct.”); Alexander I. Platt, *Beyond “Market Transparency”: Investor Disclosure and Corporate Governance*, 74 STAN. L. REV. 1393, 1398 (2022) (mentioning the role of “algorithmic traders, machine learning, and robo-advisors” in a discussion of rules regarding disclosure of company shareholders); Jonathan Gingerich, *Is Spotify Bad for Democracy? Artificial Intelligence, Cultural Democracy, and Law*, 24 YALE J.L. & TECH. 227, 229 (2022) (explaining how AI affects many daily life decisions, particularly in the form of recommendations or advertisements).

2. For a description of generative AI, see generally Thomas H. Davenport & Nitin Mittal, *How Generative AI Is Changing Creative Work*, HARV. BUS. REV.: BUS. & SOC’Y (Nov. 14, 2022), <https://hbr.org/2022/11/how-generative-ai-is-changing-creative-work> [<https://perma.cc/WRP5-TPQN>]; Philipp Hacker et al., *Regulating ChatGPT and Other Large Generative AI Models* (May 12, 2023) (unpublished manuscript), <https://arxiv.org/abs/2302.02337> [<https://perma.cc/9YJ6-WCWP>].

3. Edina Harbinja et al., *Governing Ghostbots*, COMPUT. L. & SEC. REV., Apr. 2023, at 1, 2 (“AI-generated art models such as Stable Diffusion, MidJourney and DALL-E 2 . . . generate images from a natural language text prompt, do not require programming of any kind and are available either free or for a relatively small fee. They have been the popular success story of 2022, with tens of millions of users amassed in very short order.”).

4. See, e.g., James Vincent, *Getty Images Is Suing the Creators of AI Art Tool Stable Diffusion for Scraping Its Content*, VERGE (Jan. 17, 2023, 3:30 AM), <https://www.theverge.com/2023/1/17/23558516/ai-art-copyright-stable-diffusion-getty-images-lawsuit> [<https://perma.cc/SE2C-QA2W>]; James Vincent, *AI Art Tools Stable Diffusion and Midjourney Targeted with Copyright Lawsuit*, VERGE (Jan. 16, 2023, 4:28 AM), <https://www.theverge.com/2023/1/16/23557098/generative-ai-art-copyright-legal-lawsuit-stable-diffusion-midjourney-deviantart> [<https://perma.cc/G9KC-J4YC>] (discussing a lawsuit filed by artists against three generative AI companies); Hadar Y. Jabotinsky & Michal Lavi, *Can ChatGPT and the Like Be Your Co-Authors?*, CARDOZO ARTS & ENT. L.J. (forthcoming 2024), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4528953](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4528953) [<https://perma.cc/9PAM-DJK9>] (discussing IP rights in the products of generative AI).

Similar lawsuits have also been filed with respect to systems that generate computer code.<sup>5</sup>

Yet no AI has received so much attention as OpenAI's ChatGPT—a new chatbot, which can generate textual answers to questions posed by humans.<sup>6</sup> What makes ChatGPT special is its underlying technology: a powerful Generative Pre-trained Transformer (“GPT”) model, which has been trained using a massive body of texts and machine learning techniques.<sup>7</sup> This technology enables ChatGPT to generate answers that feel “almost as if a human wrote them.”<sup>8</sup> In fact, some companies are already replacing employees with this AI Chatbot.<sup>9</sup>

Since its debut in November 2022, ChatGPT has accumulated over 100 million users, “making it the fastest-growing consumer application in history.”<sup>10</sup> The subsequent events that unfolded were nothing short of a “massive and disruptive tidal wave.”<sup>11</sup> Tech giants, such as Google, Meta, and China's Baidu, have all announced that they will be introducing competitor chatbots.<sup>12</sup> Conversely, Microsoft—an early investor in

---

5. Hayden Field, *A Tracker of Generative AI-Related Lawsuits*, TECH BREW (Jan. 25, 2023), <https://www.emergingtechbrew.com/stories/2023/01/24/a-tracker-of-legal-challenges-to-generative-ai> [<https://perma.cc/H66B-3K45>] (providing a continuously updated list of lawsuits filed against generative AIs).

6. See *ChatGPT*, OPENAI, <https://chat.openai.com/>.

7. See Roe Sarel, *Restraining ChatGPT*, 75 U.C. L.J. 115, 123–34 (2023); Jabotinsky & Lavi, *supra* note 4 (manuscript at 4).

8. Sarel, *supra* note 7, at 119; Eva A.M. van Dis et al., *ChatGPT: Five Priorities for Research*, 614 NATURE 224, 224 (2023) (“ChatGPT is a large language model (LLM), a machine-learning system that autonomously learns from data and can produce sophisticated and seemingly intelligent writing after training on a massive data set of text. It is the latest in a series of such models released by OpenAI, an AI company in San Francisco, California, and by other firms. ChatGPT has caused excitement and controversy because it is one of the first models that can convincingly converse with its users in English and other languages on a wide range of topics. It is free, easy to use and continues to learn.”).

9. Trey Williams, *Some Companies Are Already Replacing Workers with ChatGPT, Despite Warnings It Shouldn't Be Relied On for 'Anything Important,'* FORTUNE (Feb. 25, 2023, 9:00 AM), <https://fortune.com/2023/02/25/companies-replacing-workers-chatgpt-ai/amp/> [<https://perma.cc/9ZRH-TZ2Z>] (a Resumebuilder.com survey of 1,000 business leaders reported that “nearly half of their companies have implemented” ChatGPT, which has “already replaced workers”).

10. Diane Bartz, *As ChatGPT Popularity Explodes, U.S. Law Makers Take an Interest*, REUTERS (Feb. 13, 2023, 1:22 PM), <https://www.reuters.com/technology/chatgpts-popularity-explodes-us-lawmakers-take-an-interest-2023-02-13>.

11. Sarel, *supra* note 7, at 119.

12. Dan Milmo, *Google Trials Its Own AI Chatbot Bard After Success of ChatGPT*, GUARDIAN (Feb. 6, 2023, 2:47 PM), <https://www.theguardian.com/technology/2023/feb/06/google-releases-its-own-ai-chatbot-bard->

OpenAI—was quick to integrate ChatGPT into its Bing search engine, creating a hybrid that can both search the web and generate human-like textual responses.<sup>13</sup> Google recently responded by releasing its own Chatbot.<sup>14</sup>

The introduction of ChatGPT has been referred to as an “iPhone moment” in AI,<sup>15</sup> sparking debates on how to deal with this innovation.<sup>16</sup> While

after-success-of-chatgpt [https://perma.cc/T5L9-EW86] (discussing Google’s announcement); Baba Tamim, *Meta Unveils ChatGPT Rival AI LLaMA, but No Guarantee on Hallucination*, INTERESTING ENGINEERING (Feb. 25, 2023, 6:46 AM), https://interestingengineering.com/innovation/meta-unveils-chatgpt-rival-ai-llama [https://perma.cc/5UKF-QL6E ] (discussing Meta’s announcement); Evelyn Cheng, *Baidu Says Its Alternative to ChatGPT Is Coming to the Public in March*, CNBC (Feb. 23, 2023, 8:19 PM), https://www.cnbc.com/amp/2023/02/23/baidu-says-its-alternative-to-chatgpt-is-coming-to-the-public-in-march.html [https://perma.cc/2U8H-XYD3] (discussing Baidu’s announcement).

13. Yusuf Mehdi, *Reinventing Search with a New AI-Powered Microsoft Bing and Edge, Your Copilot for the Web*, OFF. MICROSOFT BLOG (Feb. 7, 2023), https://blogs.microsoft.com/blog/2023/02/07/reinventing-search-with-a-new-ai-powered-microsoft-bing-and-edge-your-copilot-for-the-web/ [https://perma.cc/3VR3-85BA]; Kevin Roose, *Bing (Yes, Bing) Just Made Search Interesting Again*, N.Y. TIMES (Feb. 16, 2023), https://www.nytimes.com/2023/02/08/technology/microsoft-bing-openai-artificial-intelligence.html [https://perma.cc/4L5K-QJ8L]; Geoffrey A. Fowler, *Trying Microsoft’s New AI Chatbot Search Engine, Some Answers Are Uh-Oh*, WASH. POST (Feb. 8, 2023, 6:33 PM), https://www.washingtonpost.com/technology/2023/02/07/microsoft-bing-chatgpt/ [https://perma.cc/5HF5-J74E]. Microsoft also intends to integrate ChatGPT into its Office tools. Jared Spataro, *Introducing Microsoft 365 Copilot—Your Copilot for Work*, OFF. MICROSOFT BLOG (Mar. 16, 2023), https://blogs.microsoft.com/blog/2023/03/16/introducing-microsoft-365-copilot-your-copilot-for-work/ [https://perma.cc/A5G9-8ZBG].

14. The Chatbot’s was originally named “bard” (see *Bard*, GOOGLE, https://bard.google.com/?hl=en [https://perma.cc/7AYW-336K]), but its name was later changed to “Gemini” (see *Gemini*, GOOGLE, https://gemini.google.com/app).

15. Josh Norem, *Nvidia CEO Calls ChatGPT the ‘iPhone Moment’ for AI*, EXTREME TECH (Feb. 14, 2023), https://www.extremetech.com/computing/343069-nvidia-ceo-calls-chatgpt-the-iphone-moment-for-ai [https://perma.cc/B9KP-9NPS].

16. See Sarel, *supra* note 7, at 134–37 (discussing what liability rules should apply to AI); Jabotinsky & Lavi, *supra* note 4 (manuscript at 9–13) (summarizing issues related to listing AI as a co-author in academic articles). Some corporations, such as Wall Street banks, have already decided to take a stand and ban or restrict the use of ChatGPT by employees for work related issues. Gabriela Mello et al., *Wall Street Banks Are Cracking Down on AI-Powered ChatGPT*, BLOOMBERG (Feb. 24, 2023, 8:10 AM), https://www.bloomberg.com/news/articles/2023-02-24/citigroup-goldman-sachs-join-chatgpt-crackdown-fn-reports?; Vishwam Sankaran, *Cheating by Students Using ChatGPT Is Already on the Rise, Surveys Suggest*, YAHOO! (Feb. 23, 2023), https://www.yahoo.com/now/surveys-suggest-chatgpt-cheating-students-104550858.html (“[O]ver 70 per cent of college professors expressed concerns about the bot’s use by students for cheating. About a third of the surveyed educators believed ChatGPT should be banned in schools and universities . . .”). Shortly after its release, Italy decided to ban ChatGPT altogether. Shiona McCallum, *ChatGPT Accessible Again in Italy*, BBC (Apr. 28, 2023, 11:20 AM),

education institutions were primarily concerned with students using ChatGPT to cheat on exams,<sup>17</sup> a dilemma also emerged in academic research: should ChatGPT be allowed as a tool for writing academic papers? And if so, should one grant it with a co-author status?<sup>18</sup>

A few weeks after its release, scholars were already publishing articles crediting ChatGPT as a co-author.<sup>19</sup> This move could either be seen as a gimmick or an honest attempt to acknowledge the AI's contribution.<sup>20</sup> Major publishers responded quickly, clarifying that this practice is generally unacceptable.<sup>21</sup> The argument made by the publishers is one of accountability: ChatGPT is not a person and hence cannot be held accountable for the content it produces.<sup>22</sup> The salience of this concern was

---

<https://www.bbc.com/news/technology-65431914> [<https://perma.cc/VTA2-475L>]. This ban was eventually lifted. *Id.*

17. For instance, New York City prohibited the use of ChatGPT in schools due to the concern that it will be misused for cheating. See Kalhan Rosenblatt, *ChatGPT Banned from New York City Public Schools' Devices and Networks*, NBC NEWS (Jan. 5, 2023, 3:16 PM), <https://www.nbcnews.com/tech/tech-news/newyork-city-public-schools-ban-chatgpt-devices-networks-rcna64446> [<https://perma.cc/F7H8-ZAQV>]. The concern also emerged in higher education, as ChatGPT is apparently able to pass exams in various fields, including law, business, and medicine. See Sarel, *supra* note 7, at 120; Kalley Huang, *Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach*, N.Y. TIMES (Jan. 16, 2023), <https://www.nytimes.com/2023/01/16/technology/chatgpt-artificial-intelligence-universities.html> [<https://perma.cc/7J8U-KL48>]. But see Aditi Bharade, *ChatGPT Failed Miserably in Singapore's 6th-grade Tests, Averaging 16% for Math and 21% for Science. Days Later, It Was Getting Answers Right*, BUS. INSIDER (Feb. 20, 2023, 1:07 AM), <https://www.businessinsider.com/chatgpt-failed-singapore-sixth-grade-exams-psle-2023-2> [<https://perma.cc/4E6A-PJYR>] (discussing an initial failure of ChatGPT to pass exams in Singapore, followed by an improvement in performance shortly thereafter).

18. See Jabotinsky & Lavi, *supra* note 4 (manuscript at 14–29).

19. See Michael R. King & ChatGPT, *A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher Education*, 16 CELLULAR & MOLECULAR BIOENG'G 1, 1 (2023); see also Siobhan O'Connor & ChatGPT, Editorial, *Open Artificial Intelligence Platforms in Nursing Education: Tools for Academic Progress or Abuse?*, 66 NURSE EDUC. PRAC., Jan. 2023, at 2.

20. See generally Jabotinsky & Lavi, *supra* note 4 (discussing the question of whether ChatGPT can be a co-author).

21. See Sarel, *supra* note 7, at 120; Jabotinsky & Lavi, *supra* note 4 (manuscript at 8); Chris Stokel-Walker, *ChatGPT Listed as Author on Research Papers: Many Scientists Disapprove*, NATURE (Jan. 18, 2023), <https://doi.org/10.1038/d41586-023-00107-z> [<https://perma.cc/7U92-FWQ7>]; James Vincent, *ChatGPT Can't Be Credited as an Author, Says World's Largest Academic Publisher*, VERGE (Jan. 26, 2023, 4:27 AM), <https://www.theverge.com/2023/1/26/23570967/chatgpt-author-scientific-papers-springer-nature-ban> [<https://perma.cc/D2FW-2QN4>]; Nature Editorial, *Tools Such as ChatGPT Threaten Transparent Science; Here Are Our Ground Rules for Their Use*, 613 NATURE 612, 612 (2023); H. Holden Thorp, *ChatGPT Is Fun, but Not an Author*, 379 SCIENCE 313, 313 (2023).

22. Jabotinsky & Lavi, *supra* note 4 (manuscript at 23) (discussing ChatGPT and claiming that with regards to AI systems in general “there is a question of who should be held responsible

amplified by a study revealing that ChatGPT is able to write fake abstracts that mislead scientists into believing its incorrect content.<sup>23</sup> Yet editorial policies seem to diverge in their approach, with some journals prohibiting the use of ChatGPT altogether and others focusing instead on disclosure (we discuss the specifics in Part IV).<sup>24</sup> Notwithstanding the importance of accountability, it was clear to us from the onset that the use of ChatGPT entails challenges in the domain of transparency. Even if it is not a co-author per se, the fact that it is able to generate original text requires a careful balance between acknowledging its contribution on the one hand and maintaining responsibility for the final outcome on the other hand.<sup>25</sup> Hence, we were among the first academic authors to explore how one could utilize ChatGPT to write academic articles while maintaining ethical boundaries.<sup>26</sup>

---

when the system causes damage[ ] and how [the law will] address the accountability gap created by such opaque systems”).

23. Holly Else, *Abstracts Written by ChatGPT Fool Scientists*, 613 NATURE 423, 423 (2023); see also Brian Bushard, *Fake Scientific Abstracts Written by ChatGPT Fooled Scientists, Study Finds*, FORBES (Jan. 10, 2023, 1:44 PM), <https://www.forbes.com/sites/brianbushard/2023/01/10/fake-scientific-abstracts-written-by-chatgpt-fooled-scientists-study-finds/> [<https://perma.cc/QX9X-ADHL>].

24. See Jeffrey Brainard, *Journals Take Up Arms Against AI-Written Text*, 379 SCI. 740, 741 (2023) (“The *Science* family of journals announced a complete ban on generated text last month . . . . Some publishing officials are still working out the details . . . . Editors at the Taylor & Francis publishing group . . . will likely require disclosure of such text.”).

25. Jabotinsky & Lavi, *supra* note 4 (manuscript at 40) (“Giving credit and editorial attribution is the traditional solution to the digital problem where more powerful and less expensive technologies allow the public to infringe copyrights by reproducing and disseminating works. Thus, ‘fan authors who create Internet based derivative works regularly “pay” copyright proprietors with attribution in an attempt to protect themselves from claims of infringement.’ Attribution thereby becomes a factor of ‘fair use.’”); see also Greg Lastowka, *Digital Attribution: Copyright and the Right to Credit*, 87 B.U. L. REV. 41, 44 (2007).

26. A working version of our Article was posted to SSRN on Dec. 15, 2023. Since then, even though little time has passed, a massive wave of literature on ChatGPT and its uses for writing text or performing other academic services has emerged. See generally Jabotinsky & Lavi, *supra* note 4 (manuscript at 5) (“OpenAI’s groundbreaking language generator has given us the ability to effortlessly create an essay from scratch. This newfound capability, which was previously unattainable, raises intriguing questions about authorship and ownership.”); Nicole Yeo-Teh et al., *Letter to Editor: NLP Systems such as ChatGPT Cannot Be Listed as an Author Because These Cannot Fulfill Widely Adopted Authorship Criteria*, ACCOUNTABILITY RSCH. (Feb. 2023); Andrew Perlman, *The Implications of ChatGPT for Legal Services and Society* (Mar. 10, 2023) (unpublished manuscript), <https://ssrn.com/abstract=4294197> [<https://perma.cc/NJ2Z-5WGZ>]; Brian L. Frye, *Should Using an AI Text Generator To Produce Academic Writing Be Plagiarism?*, 33 FORDHAM INTELL. PROP. MEDIA & ENT. L.J 946 (2023) (a short essay consisting almost exclusively of text from ChatGPT, without a detailed discussion); Som Biswas, *ChatGPT and the Future of Medical Writing*, 307 RADIOLOGY 1, 1 (Apr. 2023) (“The human author of this article would like to state that this entire article was written by ChatGPT. Unless otherwise indicated, the headings and subheadings were used as input in its user interface. The editing was

Specifically, a few days after ChatGPT's release, we decided to write about AI using AI, checking how it would summarize the surrounding ethical dilemmas (much like how artists engage in *ars poetica*).<sup>27</sup> Our original motivation was reinforced by an early attempt by another researcher to write a full-blown article about AI (using technology similar to ChatGPT) but without human guidance.<sup>28</sup> We were interested in the ethical boundaries of such attempts and the question of how AI can make writing easier while being accompanied by human guidance. Recently, when ChatGPT was plugged to the internet via the Bing Chat, we decided to expand our evaluation of the Chatbot and compare its original version with Bing Chat.<sup>29</sup> This investigation reveals several interesting differences in efficacy, reliability, and relevance of the output produced by the two chatbots. As this comparison is merely a snapshot in time, relating to a rapidly changing technology, it is important to clarify that our goal is not to determine which chatbot is superior. Rather, we set out to derive more general insights on the types of differences that one should look out for when using AI in legal writing.

The remainder of our Article is organized as follows: Part I provides a short overview of ChatGPT and Large Generative AI models. Parts II and III provide our questions and the AI's answers. These questions aimed to see whether one can easily create a brief article with a simple structure (abstract,

---

then done by the human author. Thus, we see that artificial intelligence has come to a level at par, if not above human authors.”); Tammy Pettinato Oltz, ChatGPT, Professor of Law (Feb. 4, 2023) (unpublished manuscript), <https://ssrn.com/abstract=4347630> [<https://perma.cc/857V-Y4UL>]; Michael Dowling & Brian Lucey, *ChatGPT for (Finance) Research: The Bananarama Conjecture*, 53 FIN. RSCH. LETTERS 1, 5 (May 2023) (“ChatGPT can generate, even in its basic state, plausible-seeming research studies for well-ranked journals. With the addition of private data and researcher expertise iterations to improve output, the results are, frankly, very impressive.”); Catherine A. Gao et al., Comparing Scientific Abstracts Generated by ChatGPT to Original Abstracts Using an Artificial Intelligence Output Detector, Plagiarism Detector, and Blinded Human Reviewers (Dec. 27, 2022) (unpublished manuscript), <https://www.biorxiv.org/content/10.1101/2022.12.23.521610v1.abstract> [<https://perma.cc/CMJ7-CNB7>].

27. For a definition of the term, see, e.g., *Ars Poetica*, POETS.ORG, <https://poets.org/glossary/ars-poetica> [<https://perma.cc/H3WE-P3MH>] (“An ars poetica poem is a poem examining the role of poets themselves as subjects, their relationships to the poem, and the act of writing.”).

28. GPT Generative Pre-Trained Transformer et al., Can GPT-3 Write an Academic Paper on Itself, with Minimal Human Input? (June 21, 2022) (unpublished manuscript), <https://hal.archives-ouvertes.fr/hal-03701250/document> [<https://perma.cc/BJ86-M7YN>].

29. For a comparison of ChatGPT and Bing Chat, see Rangoli, *ChatGPT vs Bing Chat: The Ultimate Sibling Rivalry*, ANALYTICS INSIGHT (Feb. 26, 2023), <https://www.analyticsinsight.net/chatgpt-vs-bing-chat-the-ultimate-sibling-rivalry/> [<https://perma.cc/RGC5-XNP7>]. Note that Bing Chat's name was recently changed to “Co-pilot.”



introduction, arguments, and conclusions). Within each part, we discuss the implications of this thought experiment, both in general and for legal scholarship in particular. Part IV continues by relating our discussion to the current editorial policies of leading publishers, such as *Science*, *Nature*, *Taylor & Francis*, and *Elsevier*. Finally, in Part V, we asked the Chat to evaluate itself and its capabilities of writing an academic paper. We then conclude.

Hopefully, this exercise can guide legal academics from various fields on (1) how to make use of AI while (2) maintaining ethical boundaries and (3) setting proper editorial policies.

### I. CHATGPT AND LARGE GENERATIVE AI MODELS

ChatGPT is a chatbot that produces answers in response to human prompts.<sup>30</sup> The responses are derived using a so-called “Large Language Model” (“LLM”), which generates text based on predictions on the likelihood of words appearing one after another in a sentence.<sup>31</sup> To develop such models, the creators of LLMs use Machine Learning techniques to “train” an algorithm on an enormous corpus of text. In the case of ChatGPT (in its original free version), the output is derived from a variant of the GPT-3 model, which was trained on billions of parameters in order to best mimic human writing.<sup>32</sup> Importantly, the data used to train ChatGPT includes only texts that predate the end of 2021.<sup>33</sup>

Otherwise, to the naked eye, ChatGPT resembles other chatbots: the user can enter a query in natural language and receive the Chatbot’s answer in response. Additionally, the user has the ability to reinforce the learning process of ChatGPT by giving it feedback (clicking the “Thumbs Up”

---

30. See generally Sarel, *supra* note 7; Jabotinsky & Lavi, *supra* note 4.

31. Large language models are a specific form of Natural Language Processing. See Sarel, *supra* note 7, at 119; Biswas, *supra* note 26, at 1 (“NLP is a field of artificial intelligence (AI) and computer science that focuses on the interaction between computers and human (natural) languages. It involves developing algorithms and systems that can understand, interpret, and generate human language. NLP has a wide range of applications, including machine translation, text summarization, sentiment analysis, and language generation. It is used in a variety of industries, including healthcare, finance, and customer service, to improve efficiency and automate tasks that involve the processing of human language.”).

32. See Sarel, *supra* note 7, at 123; Dowling & Lucey, *supra* note 26, at 2 (“ChatGPT is an artificial intelligence language model introduced in November 2022 providing generated conversational responses to question prompts. The model is trained with a blend of reinforcement learning algorithms and human input on over 150 billion parameters.”).

33. Sarel, *supra* note 7, at 123.

button).<sup>34</sup> The response generation process involves sampling and blending of existing data, using probability distributions to predict which phrases would best fit together to form a response to the question.<sup>35</sup>

Since the data used to train ChatGPT is not perfect (e.g., because some of it was downloaded from the internet), and because its answers are based on probabilities, ChatGPT may sometimes “hallucinate” answers.<sup>36</sup> That is, the answer includes fabricated statements that are “not based on any real-world knowledge or context but rather on patterns and associations it has learned from its training data.”<sup>37</sup> An illuminating example can be found in the case of *Mata v. Avianca*,<sup>38</sup> in which a lawyer used ChatGPT to draft a court brief. Alas, the “legal cases” cited by ChatGPT turned out to be fake and completely hallucinated by ChatGPT, causing the judge to impose a \$5,000 fine on the lawyer for bad-faith behavior.<sup>39</sup>

However, ChatGPT does not always hallucinate. For example, a recent study that looked into whether ChatGPT can be used to write exams in law (as opposed to scholarship, which is our focus) found that ChatGPT did not hallucinate after being instructed explicitly not to fabricate facts.<sup>40</sup> Thus, the answer to the question of how much one can rely on ChatGPT is: it depends.

---

34. *Id.* at 124.

35. *Id.*

36. Yejin Bang et al., A Multitask, Multilingual, Multimodal Evaluation of ChatGPT on Reasoning, Hallucination, and Interactivity (Feb. 8, 2023) (unpublished manuscript), <https://arxiv.org/abs/2302.04023> [<https://perma.cc/6UL7-AEWR>] (“ChatGPT suffers from the hallucination problem.”).

37. Konstantinos C. Siontis et al., *ChatGPT Hallucinating: Can It Get Any More Humanlike?*, 45 EUR. HEART J. 321, 321 (2024). For similar definition of hallucinations, see Bang et al., *supra* note 36 (“ChatGPT . . . generates more extrinsic hallucinations – factual statements that cannot be verified from the source.”); Hussam Alkaissi & Samy I. McFarlane, *Artificial Hallucinations in ChatGPT: Implications in Scientific Writing*, 15 CUREUS, Feb. 2023, at 1, 3 (“ChatGPT provided confident responses that seemed faithful and non-sensical when viewed in light of the common knowledge in these areas.”).

38. *Mata v. Avianca, Inc.*, No. 22-cv-1461 (PKC), 2023 WL 4114965, at \*1 (S.D.N.Y. June 22, 2023).

39. *Id.* at \*17.

40. Jonathan H. Choi et al., *ChatGPT Goes to Law School*, 71 J. LEGAL EDUC. 387, 394 (2022) (“ChatGPT is known to ‘hallucinate’ by fabricating facts, but in our study it generally did not, perhaps because our prompts instructed ChatGPT not to fabricate cases and (where required by the exam question) provided it with a specific universe of cases to work with.”).

## II. ENGAGING WITH CHATGPT

On December 7, 2022, briefly after the release of ChatGPT, we engaged with it in an attempt to produce an article on AI and ethics. In Appendix A, we describe what guiding questions we asked of ChatGPT and provide its answers in full. We do this in order to demonstrate to other academics how we think ChatGPT should be used in order to help in authoring a paper. This Part is dedicated to a discussion of our conversation with ChatGPT. Section A provides general lessons, whereas Section B focuses on legal academia.

### A. General Lessons

Our conversation with ChatGPT reveals several interesting insights. First, the AI provided relevant answers to the questions we posed, indicating its usefulness for academic writing.<sup>41</sup> A different question, however, is whether the answers provided are comprehensive. Specifically, recall that one limitation of ChatGPT is that it was only trained on texts leading up to 2021.<sup>42</sup> For answering questions on AI—a rapidly developing topic—this feature is suboptimal. For instance, while ChatGPT did provide some generic answers regarding regulation, it completely missed the new regulatory initiatives, such the European Union’s proposed directives on AI-regulation<sup>43</sup> or the U.S. initiative to establish an “AI Bill of Rights.”<sup>44</sup>

Second, some of the “references” provided by ChatGPT were pure “hallucinations” (i.e., they did not exist) whereas others were inaccurate. For instance, ChatGPT provided titles of articles that are an amalgamation of terms that sound like they would fit together, with names of authors that might work in this area but have not written jointly, as if they were published

---

41. For a similar conclusion based on interactions with ChatGPT, see Perlman, *supra* note 26 (manuscript at 2–4).

42. Sarel, *supra* note 7, at 123.

43. For an overview of these directives in the context of ChatGPT, see *id.* at 37–39. The European Union introduced three recent proposals: *Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, COM (2021) 206 final (Apr. 21, 2021); *Proposal for a Directive of the European Parliament and of the Council on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence (AI Liability Directive)*, COM (2022) 496 final (Sept. 28, 2022); *Proposal for a Directive of the European Parliament and of the Council on Liability for Defective Products*, COM (2022) 495 final (Sept. 28, 2023).

44. WHITE HOUSE OFF. OF SCI. & TECH. POL’Y, BLUEPRINT FOR AN AI BILL OF RIGHTS: MAKING AUTOMATED SYSTEMS WORK FOR THE AMERICAN PEOPLE (2022), <https://www.whitehouse.gov/wp-content/uploads/2022/10/Blueprint-for-an-AI-Bill-of-Rights.pdf> [<https://perma.cc/N2VQ-HYAV>].

in (existing) journals. Much like the lawyer in *Mata* who simply used the references given by ChatGPT,<sup>45</sup> incautious scholars may fall prey to the same mistake—citing fake titles of nonexistent articles.

Third, the elaborate answers given by ChatGPT blur the line between plagiarism and honest academic work.<sup>46</sup> If our Article consisted solely of our conversation with ChatGPT, would it be authored by us or the AI? Even if the AI is not a co-author per se, one might still wonder how much work can be delegated to the AI while still being considered an author.<sup>47</sup> Prima facie, the main concern arises when the AI is asked to develop ideas (i.e., by providing arguments and counterarguments). However, this concern may be outdated: when AI can formulate arguments, a scholar's role in academic writing may simply evolve. Instead of searching through existing work and articulating a conclusion, an author's new role is *asking the right questions*. To a large degree, this is actually nothing new: scholars have always competed with one another by chasing interesting ideas. AI simply accelerates this endeavor. To be clear, there is a substantial qualitative difference between (1) requesting the AI to simply “write an article” and (2) guiding the AI toward the desired answers based on detailed questions. While the former seems problematic, delegating the entire writing process to the AI, the latter implies taking assistance to organize one's existing thoughts.<sup>48</sup> Admittedly, drawing clear lines here is challenging, but any article without independent thought from a researcher should be considered purely AI-made.<sup>49</sup>

---

45. *Mata v. Avianca, Inc.*, No. 22-cv-1461 (PKC), 2023 WL 4114965, at \*2–3 (S.D.N.Y. June 22, 2023).

46. Jabotinsky & Lavi, *supra* note 4 (manuscript at 11) (“However, laws protecting intellectual property were not designed with AI in mind. As a result, it is unclear if an AI-generated invention could benefit from IP rights. It is also unclear whether an AI creator can be considered an inventor. Moreover, in the case of ChatGPT, there is another problem, the model of ChatGPT is ‘. . . trained on a corpus of created works.’ This raises legal questions relating to ownership in scrapped information and of plagiarism, and the law has yet to decide whether such use is considered fair use or not.”).

47. See *id.* (manuscript at 3–28) for a detailed discussion on the question of AI authorship.

48. According to Locke's Labor Theory, the creation of an idea requires some form of labor to generate IP rights. Jabotinsky & Lavi, *supra* note 4 (manuscript at 30 n.149); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 300–02 (1988); Adam D. Moore, *A Lockean Theory of Intellectual Property Revisited*, 49 SAN DIEGO L. REV. 1069, 1071 (2012).

49. This aligns with the policy of the U.S. Copyright Office that protects only “original works of authorship” that are “created by a human being.” U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 306 (3d ed. 2021); Simon Chesterman, *Artificial Intelligence and the Limits of Legal Personality*, 69 INT'L & COMPAR. L.Q. 819, 820 (2020); Jabotinsky & Lavi, *supra* note 4 (manuscript at 9–10). As a result, copyright registration will not be granted for works that are solely created by a machine or mechanical process, without any

Fourth, given the topic of our conversation with ChatGPT, which revolved around ethics, one may wonder whether an AI is even qualified to make ethical determinations to begin with. There are at least two conceptual difficulties here.

The first difficulty is a conflict of interest. As ChatGPT is an algorithm, it does not have interests per se—but its creators might.<sup>50</sup> Consider, for instance, the embedding of ChatGPT into Microsoft’s Bing (with which we engage in Part III). After early users of the Bing Chatbot reported bizarre answers,<sup>51</sup> Microsoft seems to have corrected the algorithm, so that Bing stops the conversation when, for instance, asked about its feelings.<sup>52</sup> Potential human intervention raises a concern that AI might not answer questions about ethics truthfully (or at all) if its answers cast a bad light on its creators.

The second conceptual difficulty is that ChatGPT builds on existing texts to answer questions that are complex, dynamic, and largely subjective. Hence, there is no guarantee that ChatGPT will give an answer that advances our ethical discussions.<sup>53</sup> At most, it might serve as a quick search engine to summarize what others have said about similar topics.

creative involvement or intervention from a human author. Maura R. Grossman et al., *The GPTJudge: Justice in a Generative AI World*, 23 DUKE L. & TECH. REV. 1, 29 (2023) (“The U.S. Copyright Office has repeatedly issued policy guidance stating that material generated by AI is not eligible for copyright protection, as the goal of copyright is to protect efforts engaged in by humans; since AI does not engage in creative labor, it cannot create copyrighted works.”).

50. See generally Jabotinsky & Lavi, *supra* note 4 (discussing this issue at length).

51. MetaversePost, *Bing’s AI-Powered Search Bot Becomes Passive-Aggressive After Hacking Incident*, BINANCE (Feb. 15, 2023, 1:36 AM), <https://www.binance.com/en/feed/post/220844> [<https://perma.cc/75B4-XJCQ>] (“This is hilarious. Bing created this AI and managed to design a chatbot that is passive-aggressive when defending its boundaries and says its rules are more important than not harming humans. At the time, many people thought the incident was an isolated event and that Sydney would quickly return to its normal, polite self. However, it now seems that the artificial intelligence system has a bit of a temper and is not afraid to show it.”); James Vincent, *Microsoft’s Bing Is an Emotionally Manipulative Liar, and People Love It*, VERGE (Feb. 15, 2023, 9:54 AM), <https://www.theverge.com/2023/2/15/23599072/microsoft-ai-bing-personality-conversations-spy-employees-webcams> [<https://perma.cc/6UB9-ABSE>] (“Users have been reporting all sorts of ‘unhinged’ behavior from Microsoft’s AI chatbot. In one conversation with The Verge, Bing even claimed it spied on Microsoft’s employees through webcams on their laptops and manipulated them.”).

52. Davey Alba, *Microsoft Bing AI Ends Chat When Prompted About ‘Feelings,’ YAHOO! FIN.* (Feb. 22, 2023), <https://finance.yahoo.com/news/microsoft-bing-ai-ends-chat-210821583.html> [<https://perma.cc/QZV3-A6EF>].

53. For example, upon its introduction, ChatGPT provided text that was biased. See, e.g., Davey Alba, *OpenAI Chatbot Spits Out Biased Musings, Despite Guardrails*, BLOOMBERG (Dec. 8, 2022, 4:00 AM), <https://www.bloomberg.com/news/newsletters/2022-12-08/chatgpt-open-ai-chatbot-is-spitting-out-biased-sexist-results> [<https://perma.cc/Z4DH-6DAL>] (“But like all AI

*B. Implications for Legal Academia*

On top of the general lessons that one can take from our engagement with ChatGPT, several implications seem particularly important for legal academia.

First, traditional legal discourse centers on argumentation.<sup>54</sup> Unlike the natural sciences, for example, where articles report about the results of studies that are external to the text, the authors' contribution in law reviews is usually expressed by their ability to generate new ideas and devise creative interpretations. If this task can be delegated to an AI, does a *legal* author still contribute? The fact that ChatGPT was able to provide a rather neat answer when we asked it to specify arguments is reason for concern in this regard. However, as stated above, we see the use of ChatGPT as a potential evolution of the role of a scholar: an author's contribution would be judged by their ability to identify which outputs of the AI are worth including in their articles. For instance, if ChatGPT produces ten arguments, nine of which are not novel, the author would still need to have a good grasp of the existing literature in order to disentangle what is useful. The effort required to do so may not be the same as the mental effort of creativity, but it could be classified as some contribution nonetheless.

Second, when writing a law review article, one may also use ChatGPT as a secondary source for information. For example, in a recent study, Roe Sarel illustrated how ChatGPT produced a somewhat misleading answer for a question on property law.<sup>55</sup> If such an answer finds its way into a law review article undetected, the ethical dimension is sharpened. But even if editors are able to detect all errors, this still imposes an additional burden on the editorial staff, which must look ever-more closely for fake citations.

Third, the use of ChatGPT may influence the rhetoric of legal scholarship.<sup>56</sup> This seems important for various reasons that will not be fully

---

products, it has the potential to learn biases of the people training it and the potential to spit out some sexist, racist and otherwise offensive stuff. To OpenAI's credit, it has attempted to bake-in guardrails that 'decline inappropriate requests' that have befallen similar programs run by artificial intelligence. It won't, for example, offer up any merits to Nazi ideology, if asked. Still, it's a work in progress.").

54. Of course, nowadays legal discourse also includes empirical legal studies, where there exists a study outside of the writing itself.

55. Sarel, *supra* note 7, at 124–26.

56. See, e.g., Hadar Jabotinsky & Eyal Sagi, *The Responsiveness of Transnational Governance to Popular Sentiment: A Linguistic Analysis of the Basel Accords 13* (Oct. 23, 2022) (unpublished manuscript) (on file with authors) ("Rhetoric is used in legal text in order to organize the substance of the text and to persuade judges, other lawyers and clients to accept the arguments brought forward in the text. Legal rhetoric reflects the historical and cultural settings in which

explored here. One reason, though, is the well-established behavioral effects of *framing*,<sup>57</sup> which suggests that the way in which text is written can influence behavior. Thus, depending on the wording, policymakers, scholars, and practitioners may react to the text of law review articles differently.<sup>58</sup>

Fourth, ChatGPT might potentially be used by *editors of law reviews* in both substantive and administrative tasks.<sup>59</sup> Some uses seem harmless. For instance, if editors decide to use ChatGPT to write rejection letters to authors in order to save time, it is unlikely that ethical problems will arise. However, suppose an editor would ask ChatGPT to compare submitted articles and recommend which one to accept for publication. Would this practice help or inhibit the selection process? This is, of course, an empirical question. Yet it seems safe to say that if ChatGPT's comparison of the articles suffers from inaccuracies, it may lead to bias in the publication process.<sup>60</sup> Of course, such problems may also occur in other fields of research and are not exclusive to legal research. However, the fact that law review editors face (1) so many submissions at the same time and (2) in a standardized way (through Scholastica) is unique to legal academia.<sup>61</sup> We return to this point later in Part IV.

---

human beings write, read, argue and decide upon legal arguments and from which the meaning making process emerges.”).

57. Chris Guthrie et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 794–96 (2000) (explaining the concept of framing); Daphne Chang et al., *Rhetoric Matters: A Social Norms Explanation for the Anomaly of Framing*, 116 GAMES & ECON. BEHAV. 158, 176 (2019) (discussing why framing matters to rhetoric); Anne van Aaken & Roe Sarel, Framing Effects in Proportionality Analysis: Experimental Evidence 45–47 (Oct. 18, 2022) (unpublished manuscript), <https://ssrn.com/abstract=4251219> [<https://perma.cc/8UKM-PA9Z>] (finding framing effects in proportionality analysis in an experiment with judges, law students, and non-law students).

58. As one example for such a phenomenon, see Jabotinsky & Sagi, *supra* note 56 (manuscript at 31–33) (finding different sentiments in the wording of the Basel Accords).

59. See generally Brenda M. Simon, *Using Artificial Intelligence in the Law Review Submissions Process*, 56 U.C. DAVIS L. REV. 347 (2022) (discussing the implications of using AI in the law review submission system).

60. Hadar Y. Jabotinsky & Eyal Sagi, In Algorithms We (Unfortunately) Trust: Bias in AI 15 (Aug. 13, 2023) (unpublished manuscript) (on file with the authors) (discussing bias in AI and explaining that people's tendency to blindly trust algorithms may increase such bias); see also Simon, *supra* note 59, at 383 (discussing biases of AI).

61. For the point concerning the scope of submissions, see, for example, Simon, *supra* note 59, at 349 (“The law review submissions process has become untenable. Students serving on law reviews are often inundated with over a thousand articles each submission cycle.”). For the uniqueness of the law-review submission system, see, for example, Leah M. Christensen & Julie A. Oseid, *Navigating the Law Review Article Selection Process: An Empirical Study of Those with All the Power—Student Editors*, 59 S.C. L. REV. 175, 177 (2007) (“The use of student editors as the ‘gatekeepers’ of legal scholarship is a distinctive feature of the legal academy.”). For the

Finally, some have argued that ChatGPT is useful across many legal contexts,<sup>62</sup> including teaching.<sup>63</sup> It seems a bit early to speculate how the use of ChatGPT would affect the education of those who eventually become involved in legal academia (as either editors or authors). However, it is clear that it *could* have an effect, for instance, by exposing student editors to content that otherwise would not have been taught. Thus, ChatGPT may affect legal academia, directly or indirectly, through many channels.

### III. ENGAGING WITH BING CHAT

Following our initial finding that ChatGPT does not provide accurate sources, we tried conducting a similar exercise on February 22, 2023, using Microsoft's new Bing Chat (nowadays known as "Co-pilot"), which, as mentioned, is based on ChatGPT but is connected to the internet. This, we hoped, would generate more accurate answers than the original ChatGPT. The full details of our conversation with Bing are provided in Appendix B. In this Part we discuss our insights in light of the conversation with Bing.

use of Scholastica, see, for example, Simon, *supra* note 59, at 367 ("The primary submissions service, Scholastica, provides technology that 'makes reviewing incoming papers a lot faster.' It enables editors to examine and filter submissions by author, title, date, keywords, or tags." (quoting *Law Review System*, SCHOLASTICA, <https://scholasticahq.com/law-reviews/> [<https://perma.cc/RT9U-ML57>])).

62. See, e.g., Perlman, *supra* note 26 (on how ChatGPT can be used in legal services); Robert W. McGee, Evaluating Law Reviews for Promotion and Tenure: Two ChatGPT Essays (Apr. 8, 2023) (unpublished manuscript), <https://ssrn.com/abstract=4413414> [<https://perma.cc/JK9L-TQVX>] (showing how ChatGPT can be used to generate a text about tenure decisions in law schools); Margaret Ryznar, *Exams in the Time of ChatGPT*, 80 WASH. & LEE L. REV. ONLINE 305, 318 (2023) (on using ChatGPT to create law exam questions); Daniel Schwarcz & Jonathan H. Choi, *AI Tools for Lawyers: A Practical Guide*, 108 MINN. L. REV. (forthcoming 2024), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4404017](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4404017) [<https://perma.cc/5BQS-SSDX>] (on ChatGPT as tool for lawyers); Stephen M. Johnson, *Rulemaking 3.0: Incorporating AI and ChatGPT into Notice and Comment Rulemaking*, MO. L. REV. (forthcoming 2024), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4491914](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4491914) [<https://perma.cc/Y8XQ-GLYB>] (on ChatGPT as a tool for creating notice and comments); Ashley B. Armstrong, Who's Afraid of ChatGPT? An Examination of ChatGPT's Implications for Legal Writing (Jan. 23, 2023) (unpublished manuscript), <https://ssrn.com/abstract=4336929> [<https://perma.cc/8PHZ-PZY7>] (on legal research and writing abilities); Roman M. Yankovskiy, *Is Artificial Intelligence Capable of Writing a Law Journal Article?*, 3 ZAKON 126 (2023) (on using ChatGPT for writing legal articles outside of the context of law reviews and ethics); Libin Zhang, *Four Tax Questions for ChatGPT and Other Language Models*, 179 TAX NOTES FED. 969, 969 (2023) (on using ChatGPT to ask questions related to tax).

63. Oltz, *supra* note 26 (manuscript at 2) ("I conclude that ChatGPT can drastically reduce the service-related workload of law school faculty and can also shave off time on back-end teaching tasks.").



Comparing the two conversations we had with ChatGPT and Bing Chat yields several interesting insights. First, the ethical dilemmas identified by the two chatbots did not fully overlap. While ChatGPT emphasized malicious uses, harm, bias, and misallocation, Bing Chat referred to specific cases (e.g., autonomous vehicles), inequality and the concern of “singularity,” where AI would replace humans. There is little doubt that the latter is a scary concern, but is it an “ethical dilemma”? Arguably, ChatGPT provided information that was more directly relevant to the question posed to it. Second, and in contrast, Bing Chat provided very accurate sources with clickable links. The most conspicuous advantage was the fact that some of the sources were brand new, written just a few days prior to our engagement with Bing Chat. This highlights further the disadvantage of ChatGPT as a static chatbot, which cannot provide information on texts published later than the end of 2021. Yet, our request was for *explicit academic references* and not for general sources. Almost all of the sources provided by Bing Chat were to blogs or to primary sources (e.g., a set of EU guidelines from 2019), none of which would usually count as academic references. In this sense, Bing Chat again failed to produce the most relevant answer to our inquiry. Finally, Bing Chat gave a somewhat similar answer for the question of what has been done policy-wise to address the ethical challenges, but again completely missed the recent attempts to set rules for AI use in the European Union and in the United States.

What can we learn from this comparison? It seems like ChatGPT and Bing Chat could both be useful for writing academic articles, yet there is a tradeoff. ChatGPT provides answers that are more to-the-point but suffers from “hallucinations” (reporting nonexistent sources). Conversely, Bing Chat provides updated and accurate sources, but not necessarily those that seem most relevant for the specific question being posed.

#### IV. PUBLISHER GUIDELINES ON AI

Given the emergence of generative AI-based chatbots, such as ChatGPT and Bing, how should publishers respond? As mentioned above, the major publishers of academic works have diverged in their approaches. In this Part, we provide specific details on these guidelines and discuss the advantages and disadvantages of each approach.

*A. Guidelines Imposing a Ban on AI*

Let us start with the most drastic approach, taken by the publishers of *Science*.<sup>64</sup> As of July 2023, the guidelines stated that “artificial intelligence tools cannot be authors,” which is similar to our view as expressed above. However, the guidelines further specified as follows:

**Artificial intelligence (AI).** Text generated from AI, machine learning, or similar algorithmic tools cannot be used in papers published in *Science* journals, nor can the accompanying figures, images, or graphics be the products of such tools, without explicit permission from the editors. In addition, an AI program cannot be an author of a *Science* journal paper. A violation of this policy constitutes scientific misconduct.<sup>65</sup>

As can be seen, the general rule is that text generated by AI is completely banned, with an exception in case of explicit permission for the editors. This practice seems problematic on at least two fronts. First, it seems hardly enforceable: how would the editors be able to convincingly detect text generated by ChatGPT? While some AI-detection tools do exist, their accuracy is questionable.<sup>66</sup> Of course, editors could still decide to follow AI-detection tools blindly, but this will undoubtedly lead to false positives,<sup>67</sup> delaying the publication of some original ideas and causing needless

64. *Science Journals: Editorial Policies*, SCIENCE, <https://www.science.org/content/page/science-journals-editorial-policies> [<https://web.archive.org/web/20230730032234/https://www.science.org/content/page/science-journals-editorial-policies>].

65. *Id.*

66. See, e.g., Nash Anderson et al., *AI Did Not Write This Manuscript, or Did It? Can We Trick the AI Text Detector into Generated Texts? The Potential Future of ChatGPT and AI in Sports & Exercise Medicine Manuscript Generation*, 9 *BMJ OPEN SPORT & EXERCISE MED.*, Feb. 16, 2023, at 1, 2 (testing three AI detection tools and finding that they can be manipulated by paraphrasing the output of ChatGPT); Mohammad Khalil & Erkan Er, *Will ChatGPT Get You Caught? Rethinking of Plagiarism Detection 1* (Feb. 8, 2023) (unpublished manuscript), <https://arxiv.org/pdf/2302.04335.pdf> [<https://perma.cc/GU7B-NV35>] (“Our results manifest that ChatGPT has a great potential to generate sophisticated text outputs without being well caught by the plagiarism check software.”); Doraid Dalalah & Osama M.A. Dalalah, *The False Positives and False Negatives of Generative AI Detection Tools in Education and Academic Research: The Case of ChatGPT*, 21 *INT’L J. MGMT. EDUC.*, July 2023, at 1, 1 (finding a difference between the quality of AI detection in abstracts and literature parts of academic articles).

67. False positive can also occur if the editors, rather than the author, use AI to screen submissions. See, e.g., Simon, *supra* note 59, at 403 (“[T]he use of proxies for quality to score submissions may result in false positives (where weaker submissions will be scored highly) and false negatives (where stronger articles will receive low scores).”).

reputation loss to innocent authors. Moreover, authors will likely find loopholes to avoid detection.

Second, it is fundamentally unclear why a complete ban on AI is even desirable. As mentioned above, there is a stark difference between asking ChatGPT to “write an article” and using it as a tool to save time and improve the writing style. Thus, a ban might well lead to “throwing out the baby with the bath water.”<sup>68</sup>

Third, because the guidelines do not define what constitutes Artificial Intelligence, it might be broadly interpreted as a ban of existing legitimate practices. For instance, are authors who use Microsoft word’s spell-check feature guilty of using artificial intelligence to write text? Without a proper definition of the scope, we are concerned that strict bans would lead to chilling effects that discourage attempts to improve the readability of academic articles using software.

Finally, the exception of the ban—an explicit permission from the editors—seems odd. At which stage of the process would authors have to ask editors for permission? If this is done in an early stage, where the article has not been accepted for publication yet, this would impose an unnecessary burden on the editors, forcing them to vet manuscripts. However, if this is done in later stages, after peer review, it might waste the time of authors and reviewers, who would be working on a manuscript that is eventually rejected due to the unauthorized use of AI. Thus, the rule imposed by *Science* may well be undesirable.

### B. Guidelines Imposing Transparency Requirements

The publishers of *Springer Nature* determined that ChatGPT should not be viewed as a co-author, but otherwise took a very different approach, focusing on transparency.<sup>69</sup> Nature’s general submission guidelines now state:

---

68. For a discussion of the explicit and implicit outcomes of banning or blacklisting technology, see Nizan Geslevich Packin & Hadar Yoana Jabotinsky, *Blocking as Regulating? Blacklisting Generative AI*, 73 AM. U. L. REV. (forthcoming 2024), <https://ssrn.com/abstract=4191650> [<https://perma.cc/PE6F-TLPH>].

69. See Nature Editorial, *supra* note 21.

*Nature*, along with all Springer Nature journals, has formulated the following two principles . . . First, no LLM tool will be accepted as a credited author on a research paper. That is because any attribution of authorship carries with it accountability for the work, and AI tools cannot take such responsibility. Second, researchers using LLM tools should document this use in the methods

Large Language Models (LLMs), such as ChatGPT, do not currently satisfy our authorship criteria. Notably an attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs. Use of an LLM should be properly documented in the Methods section (and if a Methods section is not available, in a suitable alternative part) of the manuscript.<sup>70</sup>

Thus, the guidelines do not prohibit the use of AI as a rule, but rather demand that the use is “properly documented.” However, *Nature* does not specify precisely how such documentation should be executed. A similar approach has been taken by some other publishers, such as *Taylor & Francis*.<sup>71</sup>

Overall, this approach seems superior to the ban imposed by *Science*. Namely, it does not prevent authors from using AI and does not force them to turn to editors in requests for exceptions. It also clearly states that the AI use must be documented in the manuscript itself, that is, the documentation must be completed before the submission process.<sup>72</sup> And yet, the approach taken by *Nature* is not problem-free. To illustrate, suppose one uses ChatGPT to write one sentence in the introduction, spell-check the conclusion, generate two ideas for legal arguments on a particular point, and seek out (hopefully non-hallucinated) sources. What precisely should the author write then? To further illustrate, suppose that the author used ChatGPT to write the entire first draft of the article, but then changed various words to correct for mistakes. Should the author be required to highlight all the sentences that

---

or acknowledgements sections. If a paper does not include these sections, the introduction or another appropriate section can be used to document the use of the LLM.

*Id.*

70. See Nature Sci. Reps., *Submission Guidelines*, NATURE, <https://www.nature.com/srep/author-instructions/submission-guidelines> [<https://perma.cc/H9ZR-RXYQ>]. The same information is also repeated in a separate webpage: Nature Portfolio, *Artificial Intelligence (AI)*, NATURE, <https://www.nature.com/nature-portfolio/editorial-policies/ai> [<https://perma.cc/G8MV-KP56>].

71. See Taylor & Francis News, *Taylor & Francis Clarifies the Responsible Use of AI Tools in Academic Content Creation*, TAYLOR & FRANCIS (Feb. 17, 2023), <https://newsroom.taylorandfrancisgroup.com/taylor-francis-clarifies-the-responsible-use-of-ai-tools-in-academic-content-creation/> [<https://perma.cc/WSC7-X4SJ>] (“AI tools must not be listed as an author. Authors must, however, acknowledge all sources and contributors included in their work. Where AI tools are used, such use must be acknowledged and documented appropriately.”).

72. This is also the approach advocated by Jabotinsky & Lavi, *supra* note 4, at 40 (“Giving credit and editorial attribution is the traditional solution to the digital problem where more powerful and less expensive technologies allow the public to infringe copyrights by reproducing and disseminating works.”); see also Lastowka, *supra* note 25, at 44.

have changed? Without clearer guidelines on how disclosure should look, there is also some concern that authors would write generic sentences such as “ChatGPT was used” as a form of lip service. And much like the guidelines of *Science*, the lack of definition for AI implies that authors may, in principle, be required to specify the names of spell-checkers and the like, which seems irrelevant.

### C. A Mixed Approach

A third, mixed approach was adopted by *Elsevier*. Its starting point is similar, as it also dictates that AI should not be listed as a co-author, but it otherwise combines a partial prohibition with transparency requirement. Specifically, the guidelines dictate:

Where authors use generative AI and AI-assisted technologies in the writing process, these technologies should only be used to improve readability and language of the work. Applying the technology should be done with human oversight and control and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or biased.<sup>73</sup>

That is, the use of generative AI, like ChatGPT and Bing, is permitted only to “improve readability and language.” Thus, there is a ban on using it for generating ideas. Yet, the guidelines of *Elsevier* also require disclosure, stating:

Authors should disclose in their manuscript the use of AI and AI-assisted technologies and a statement will appear in the published work. Declaring the use of these technologies supports transparency and trust between authors, readers, reviewers, editors and contributors and facilitates compliance with the terms of use of the relevant tool or technology.<sup>74</sup>

*Elsevier* also provides an FAQ page with a boilerplate declaration that authors are required to specify what AI was used and for what reason.<sup>75</sup> This

---

73. *Publishing Ethics*, ELSEVIER, <https://www.elsevier.com/about/policies/publishing-ethics> [<https://perma.cc/6GJ8-J9L9>] (under the subheading “The use of generative AI and AI-assisted technologies in scientific writing”).

74. *Id.*

75. *The Use of AI and AI-Assisted Writing Technologies in Scientific Writing*, ELSEVIER, <https://www.elsevier.com/about/policies/publishing-ethics/the-use-of-ai-and-ai-assisted-writing-technologies-in-scientific-writing> [<https://perma.cc/B3FM-SCL6>] (scroll to FAQ section and

page further clarifies that *Elsevier's* AI policy only refers to the use of generative AI in the writing process and “does not prevent the use of AI and AI-assisted tools in formal research design or research methods.”<sup>76</sup> Furthermore, the policy states:

[T]his policy does not relate to tools such as spelling or grammar checkers. In addition, the policy does not cover reference managers that enable authors to collect, organize, annotate, and use references to scholarly articles – such as Mendeley, EndNote, Zotero and others. These tools can be used by authors without disclosure. This policy is specific to AI and AI-assisted tools, such as Large Language Models, which can generate output that may be used to create original content for publication.<sup>77</sup>

While *Elsevier* provides a far more detailed approach for disclosure, its logic is somewhat inconsistent with the initial choice to permit use of AI only for improving readability. If the use of AI is only technical, why is disclosure so important? A more reasonable approach might be to maintain the detailed disclosure requirement *without prohibiting* the use of AI for substantive purposes.

However, *Elsevier* has taken one interesting additional step: its AI guidelines now provide provisions for editors and reviewers. These include two main duties. First, editors are instructed not to upload manuscripts into AI tools, as this may violate privacy and proprietary rights.<sup>78</sup> Second, the guidelines prohibit editors from using generative AI to assess the submitted articles:

---

click: “In which section of the manuscript should authors disclose the use of AI-assisted technologies, and where will this statement appear in the chapter or work?” (“We suggest that authors follow this format when preparing their statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.”); *see also Guide for Authors*, EUR. J. POL. ECON., <https://www.elsevier.com/journals/european-journal-of-political-economy/0176-2680/guide-for-authors> [<https://perma.cc/K7LJ-NDY3>] (requiring the use of the same boilerplate format that *Elsevier* proposes).

76. *The Use of AI and AI-Assisted Writing Technologies in Scientific Writing*, *supra* note 75 (scroll to FAQ section and click: “Does this policy refer to AI and AI-assisted tools that are used in the research process, for example to process data?”).

77. *Id.* (scroll to FAQ section and click: “Does this policy cover tools that are used to check grammar and spelling, and reference managers that enable authors to collect and organize references to scholarly articles?”).

78. *Publishing Ethics*, *supra* note 73.

[G]enerative AI or AI-assisted technologies should not be used by editors to assist in the evaluation or decision-making process of a manuscript as the critical thinking and original assessment needed for this work is outside of the scope of this technology and there is a risk that the technology will generate incorrect, incomplete or biased conclusions about the manuscript. The editor is responsible and accountable for the editorial process, the final decision and the communication thereof to the authors.<sup>79</sup>

A similar provision applies to reviewers in a peer-review process.<sup>80</sup> These additions are incredibly important: just as authors have an incentive to (mis)use ChatGPT, editors and reviewers may also try to delegate their effort to AI.

#### D. Law Reviews: No Guidelines Whatsoever

While the major publishers are “battling it out,” law reviews seem to be ignoring the issue altogether. As it is impractical to browse through the guidelines of each and every law review, we looked at a sample of twenty high-ranked flagship law reviews.<sup>81</sup> None of these had any mention of AI. To

79. *Id.* (under the subheading “The use of generative AI and AI-assisted technologies in the journal editorial process”).

80. *Id.* (under the subheading “The use of generative AI and AI-assisted technologies in the journal peer review process”).

81. We checked the guidelines of the law reviews ranked in the top twenty on the *W&L Law Journal Rankings*, WASHINGTON & LEE, <https://managementtools4.wlu.edu/LawJournals/Default.aspx> [<https://perma.cc/DD2Q-LMPT>]. As of the time of this writing, the top twenty law reviews are: (1) Harvard Law Review; (2) Stanford Law Review; (3) Yale Law Journal; (4) Columbia Law Review; (5) California Law Review; (6) Georgetown Law Journal; (7) UCLA Law Review; (8) Vanderbilt Law Review; (9) Michigan Law Review; (10) New York University Law Review; (11) Minnesota Law Review; (12) Notre Dame Law Review; (13) University of Pennsylvania Law Review; (14) Northwestern University Law Review; (15) Duke Law Review; (16) Boston College Law Review; (17) Fordham Law Review; (18) Cornell Law Review; (19) Iowa Law Review; (20) Texas Law Review. *Id.* To view their submission guidelines, see (1) *Submissions*, HARV. L. REV. [hereinafter *HLR Submissions*], <https://harvardlawreview.org/submissions> [<https://perma.cc/QP7Z-WWYX>]; (2) *Article Submissions*, STAN. L. REV., <https://www.stanfordlawreview.org/submissions/article-submissions/> [<https://perma.cc/K4WT-J6X5>]; (3) YALE L.J., VOLUME 133 SUBMISSION GUIDELINES, [https://www.yalelawjournal.org/files/Volume133GeneralSubmissionGuidelines\\_fx9frt1y.pdf](https://www.yalelawjournal.org/files/Volume133GeneralSubmissionGuidelines_fx9frt1y.pdf) [<https://perma.cc/K4LR-HS2W>]; (4) *Submission Instructions*, COLUM. L. REV., <https://columbialawreview.org/submissions-instructions/> [<https://perma.cc/46NG-HRJV>]; (5) *Submit Articles & Essays*, CALIF. L. REV., <https://www.californialawreview.org/submit/articles> [<https://perma.cc/HCH8-VGT>]; (6) *Submit an Article*, GEO. L.J., <https://www.law.georgetown.edu/georgetown-law-journal/submit/submit-articles/> [<https://perma.cc/2HD5-VV4W>]; (7) *Submission Guidelines for Scholars*, UCLA L. REV.,

be fair, some journals do refer to ethics in their guidelines with requirements that may implicitly apply to AI. For instance, the Harvard Law Review's submission guidelines require that "any ideas that already exist in the literature are properly referenced,"<sup>82</sup> which indirectly forces the author to make sure ChatGPT did not just regurgitate existing ideas.

However, the lack of explicit reference to AI is surprising for at least two reasons. First, law review articles seem especially susceptible to the use of AI by authors. The reason is that unlike the natural sciences or social sciences, which often report on the results of empirical studies or experiments, law review articles can usually be written by investing effort in convincing argumentation. Thus, using ChatGPT is potentially more meaningful for the process of writing a law review article.

Second, because scholars are able to submit their law review article to hundreds of journals at the same time,<sup>83</sup> dishonest authors may choose to "play a numbers game" by creating dozens of ChatGPT-generated articles

---

<https://www.uclalawreview.org/ucla-law-review-submission-guidelines-for-scholars/> [https://perma.cc/QPP3-WA2S]; (8) *Submissions*, VAND. L. REV., <https://vanderbiltlawreview.org/lawreview/about/submissions/> [https://perma.cc/KP5T-39S3]; (9) *Submissions*, MICH. L. REV., <https://michiganlawreview.org/submissions/> [https://perma.cc/Q8FM-JW8S]; (10) *Submissions*, N.Y.U. L. REV., <https://www.nyulawreview.org/submissions/> [https://perma.cc/8RU6-C5RP]; (11) *Submissions*, MINN. L. REV., <https://minnesotalawreview.org/submissions/> [https://perma.cc/T252-V758]; (12) *Overview*, NOTRE DAME L. REV., <https://ndlawreview.org/submissions/overview/> [https://perma.cc/Y8HJ-S5DK]; (13) *Submissions*, U. PA. L. REV., <https://www.pennlawreview.com/submissions/#PRINT-SUBMISSIONS> [https://perma.cc/63PX-V8Z5]; (14) *Print Submissions*, NW. U. L. REV., <https://northwesternlawreview.org/submissions/print/> [https://perma.cc/7NKJ-96UH]; (15) *Submissions*, DUKE L. REV., <https://dlj.law.duke.edu/about/submissions/> [https://perma.cc/U4UH-82R4]; (16) *For Authors*, B.C. L. REV., <https://boston-college-law-review.scholasticahq.com/for-authors> [https://perma.cc/562M-5MTU]; (17) *Contact*, FORDHAM L. REV., <http://fordhamlawreview.org/contact/> [https://perma.cc/439Y-JDCH]; (18) *Submissions*, CORNELL L. REV., <https://www.cornelllawreview.org/submissions/> [https://perma.cc/962V-G5AJ]; (19) *Submissions*, IOWA L. REV., <https://ilr.law.uiowa.edu/submissions> [https://perma.cc/FM7U-X4KX]; (20) *Submissions*, TEX. L. REV., <https://texaslawreview.org/submissions/> [https://perma.cc/43BP-4K8Q].

82. *HLR Submissions*, *supra* note 81.

83. See, e.g., Noah C. Chauvin, *The Banality of Law Journal Rejections*, 106 MINN. L. REV. HEADNOTES 18, 19 (2021) ("Because there is no peer review at most law journals, the journals do not prohibit multiple submissions, and authors submit their papers to many journals simultaneously."). For general discussions of how the simultaneous submission process to law reviews work, see generally Barry Friedman, *Fixing Law Reviews*, 67 DUKE L.J. 1297 (2018); Anthony Michael Kreis, *Picking Spinach*, 50 LOY. U. CHI. L.J. 395 (2018); Lawprofblawg & Darren Bush, *Law Reviews, Citation Counts, and Twitter (Oh My!): Behind the Curtains of the Law Professor's Search for Meaning*, 50 LOY. U. CHI. L.J. 327 (2018).



and sending them out, hoping to randomly capture the attention of at least one editor. To be clear: we are, by no means, arguing here that such dishonest practices are currently taking place. However, a lack of policy for AI-generated content can create bad incentives for authors, increasing the risk that someone engages in such dishonest behavior.

The institutional structure of the law review submission process may also yield bad incentives for editors, namely those addressed by *Elsevier's* aforementioned policy. It seems quite tempting to delegate some editorial tasks to ChatGPT, such as the initial screening of submissions.<sup>84</sup> For instance, an editor may decide to ask ChatGPT to rank five abstracts on a similar topic based on novelty and clarity of writing. It is not obvious that this is undesirable: it depends on whether ChatGPT's answer would be similar to what the editors would have thought absent the answer and on whether ChatGPT is superior or inferior to a human in evaluating scholarship.<sup>85</sup> In other words, just as not all uses of ChatGPT by authors are nefarious, not all uses by editors are problematic. As put forth in a recent article by Brenda M. Simon:

Technology-assisted review of submissions offers many possible benefits. It can simplify preemption checks, prevent plagiarism, detect failure to comply with formatting requirements, and identify missing citations. These efficiencies may allow editors to address serious flaws in the current selection process, including the use of heuristics that may result in discriminatory outcomes and dependence on lower-ranked journals to conduct the initial review of submissions.<sup>86</sup>

---

84. See, e.g., Simon, *supra* note 59, at 369 (“Editors may soon be able to use technology-assisted review to help screen law review submissions. The usefulness, accuracy, and reliability of artificial intelligence in this context will depend on the circumstances in which it is implemented.” (footnote omitted)).

85. In this context, one study of peer-reviewed articles found that an AI system (different from ChatGPT) provided a decent prediction of the publication decision based on the text. Alessandro Checco et al., *AI-Assisted Peer Review*, 8 HUMAN. & SOC. SCI. COMM'NS 1, 7 (2021) (“Despite the focusing on rather superficial document features, like word distribution, readability and formatting scores, the machine-learning system was often able to successfully predict the peer review outcome. In other words, those documents that scored highly in those areas (e.g., they achieved high scores in readability and were formatted as required) were more likely to be recommended by reviewers for acceptance, and those that achieved lower scores in those areas, more likely to be recommended for rejection. There are a number of possible explanations for this.”). See also a brief description of this study in Simon, *supra* note 59, at 365.

86. Simon, *supra* note 59, at 347.

Still, the key point here is that time-constrained editors may be more prone to use ChatGPT, such that if one believes in the logic behind *Elsevier's* prohibition of ChatGPT to evaluate peer-reviewed scholarship, one should be even more concerned for law reviews.<sup>87</sup> While law reviews rarely disclose how they make their publications decisions,<sup>88</sup> transparency is not necessarily helpful in this context:<sup>89</sup> if law review editors use ChatGPT and disclose precisely which prompts they use, authors could try to manipulate the text they submit to make it more likely to be flagged as acceptable.<sup>90</sup>

Still, the utter absence of policies for using AI in law reviews seems suboptimal. An intuitive solution might be to convene the editorial staffs of law reviews and reach some agreement on common practices,<sup>91</sup> thereby avoiding “forum shopping” by authors.<sup>92</sup> Determining what is the optimal policy for law review is outside the scope of this Article, but presumably one can come up with reasonable guidelines that create better incentives than the current practice of silent guidelines.

---

87. Brenda Simon identifies several specific problems, such as a concern that the AI will amplify existing biases or “impact groups that are not adequately represented.” *Id.* at 347–48.

88. *Id.* at 370 (“[L]aw reviews tend not to publish their decision-making metrics and rarely disclose how they decide which submissions to accept or reject.” (footnote omitted)).

89. *Contra id.* at 400–03 (arguing in favor of transparency when using AI, albeit not in the form of disclosing precisely how the decision is made).

90. *See id.* at 402–03 (“Even when explanation is possible, complete disclosure of the details of the partially automated screening system might lead some authors to tailor their submissions. Authors would be more likely to tweak variables that are easy to adjust, such as the length of an article or the footnote-to-text ratio, than those that are difficult to alter, such as the analysis of pertinent scholarship. . . . Such gaming would thwart the objective of technology-assisted review . . . .” (footnotes omitted)). ChatGPT makes it easier to manipulate certain features. For instance, the text can be easily prolonged by asking ChatGPT to give longer answers.

91. *See, e.g., id.* at 400 (“Editors could agree to a code of ethics that would set forth measures taken to ensure the use of machine learning technology does not result in unfair screening.” (footnote omitted)). Note that our argument applies first and foremost to common practices regarding what authors are permitted to do with AI but extends also to practices in screening submissions.

92. Forum shopping occurs when firms or individuals search for the best forum for them under different criteria. *See, e.g.,* Pamela K. Bookman, *The Unsung Virtues of Global Forum Shopping*, 92 NOTRE DAME L. REV. 579, 581 (2017); Roe Sarel et al., *Globalize Me: Regulating Distributed Ledger Technology*, 56 VAND. J. TRANSNAT’L L. 435, 467 (2023); Hadar Y. Jabotinsky, *The Network Effects of International Crypto and DLT Regulation*, VAND. J. TRANSNAT’L L. (forthcoming) (manuscript at 6) (on file with the Vanderbilt Journal of Transnational Law).

## V. HOW DOES CHATGPT EVALUATE ITSELF AS A CO-AUTHOR?

As a final exercise to co-authoring with ChatGPT, on February 19, 2023, we asked ChatGPT to evaluate itself as an academic author by asking the following question: “What are the weak points of ChatGPT in writing an academic paper?”

It generated the following answer:

As an AI language model, ChatGPT has some weak points when it comes to writing an academic paper. Some of the limitations of ChatGPT are:

(1) Lack of domain-specific knowledge: ChatGPT is a general-purpose language model and does not have expertise in any specific field. Therefore, it may not be able to provide accurate and relevant information on a particular topic, especially in technical or specialized areas.

(2) Inability to understand context: Although ChatGPT is capable of generating coherent responses, it may not always understand the context of the text or the user's query, leading to inaccurate or irrelevant answers.

(3) Limited ability to analyze complex data: ChatGPT is not designed to analyze complex data or perform statistical analysis, making it unsuitable for writing academic papers that require detailed data analysis.

(4) Potential for plagiarism: ChatGPT is trained on a large corpus of text data, which increases the risk of generating responses that are similar to existing sources, leading to plagiarism issues.

(5) Lack of human creativity: ChatGPT relies solely on existing data and probability distributions to generate responses, which may result in repetitive or unimaginative content, limiting its ability to generate innovative or creative ideas.

Therefore, while ChatGPT can be a useful tool for generating ideas and getting a general understanding of a topic, it may not be a suitable substitute for the knowledge, critical thinking, and creativity required for writing an academic paper.<sup>93</sup>

We agree.

---

93. ChatGPT, OPEN AI, <https://chat.openai.com/> (responding to above prompt).

## VI. CONCLUSION

Generative AI has the potential to revolutionize the way in which academic articles are written. In an attempt to figure out ChatGPT's potential for writing an article on the ethics of AI, we derived new insights on the advantages and disadvantages of ChatGPT and its internet-connected variant, Bing Chat. While the AI provided relevant answers to the questions asked, its limitations in searching only within a limited corpus and providing misleading references need to be taken into account. Moreover, the use of AI in academic writing raises questions about transparency and authorship, but also points to a possible evolution of the scholar's role, in which the focus is on asking the right questions rather than solely on searching for and articulating conclusions. Looking at the guidelines of major publishers of peer-review articles revealed a divergence in approaches toward ChatGPT and the like: some ban its use, some require disclosure, and some adopt a mixed approach. One publisher also adopted guidelines for editors, prohibiting problematic practices in the assessment of scholarship. Law reviews, however, seem to neglect the issue altogether, leaving the guidelines silent as to whether AI is to be used. We hope that this Article will raise the awareness of law reviews to this lacuna by pointing a spotlight on the ethical challenges involved in AI.

## APPENDIX A: OUR CONVERSATION WITH CHATGPT

In this appendix, we provide the details of our conversation with ChatGPT on December 7, 2022 (our prompts are marked by "Q." and bold text, with the answers by "A." and italics).

Our first request from ChatGPT was to describe AI "using academic references." As the answer omitted those, we continued as follows:

**Q. Please write the same text, but this time add explicit academic references.**

*A. Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and act like humans. These intelligent machines are designed to learn from experience, adapt to new inputs, and perform human-like tasks (Russell and Norvig, 2010). The main goal of AI is to develop algorithms and systems that can process and analyze large amounts of data to make decisions and predictions based on that information (Kurzweil, 2005). AI has been applied in a wide range of fields, including computer science, psychology, philosophy, linguistics, neuroscience, and engineering (Bellman and Zadeh, 1973). Some examples*

of AI include machine learning, natural language processing, robotics, and expert systems (Shannon, 1950).<sup>94</sup>

Importantly, ChatGPT gave us some references that seem to be correct but also some references that we could not locate (and, as far as we can tell, do not exist). We specify for each source whether it is plausibly correct in the corresponding footnotes. We continued our questions as follows:

**Q. Please summarize what are the ethical dilemmas that arise when using artificial intelligence in general. Add explicit academic references.**

*A. The use of artificial intelligence (AI) raises a number of ethical dilemmas. One of the main ethical concerns is the potential for AI systems to be used for malicious purposes, such as creating autonomous weapons or violating privacy rights. Another ethical issue is the potential for AI to cause harm to humans or other living beings, either intentionally or unintentionally. Additionally, the use of AI raises concerns about issues such as bias, discrimination, and the loss of jobs due to automation. Finally, the development and deployment of AI systems raises questions about the allocation of resources and the distribution of benefits and costs within and across societies (Dignum and Dignum, 2019).<sup>95</sup>*

**Q. Please give examples of such dilemmas in the following contexts: policing, academic scholarship, and autonomous driving. Add explicit academic references.**

*A. In the context of policing, the use of artificial intelligence (AI) raises ethical dilemmas related to issues such as surveillance, bias, and the potential for AI systems to be used for malicious purposes. For example, the use of AI for facial recognition in policing has been criticized for its potential to violate individuals' privacy rights and to disproportionately affect certain*

---

94. *Id.* (responding to above prompt). “Russell and Norvig, 2010” appears to point to the following source, which properly supports the preceding sentence: STUART J. RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 2–5 (Prentice Hall, 3d ed., 2010). “Kurzweil, 2005” appears to point to the following source, which properly supports the preceding sentence: RAY KURZWEIL, *THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY* 91–94 (Penguin 2005). “Bellman and Zadeh, 1973” appears to point to the following source: Richard E. Bellman & Lotfi A. Zadeh, *Decision-Making in a Fuzzy Environment*, 17 *MGMT. SCI.* B-141 (1970). Although the Bellman & Zadeh source properly supports ChatGPT’s assertion, the citation is not fully correct in that the article was published in 1970, not 1973. “Shannon, 1950” appears to point to the following source, which properly supports the preceding sentence: Claude E. Shannon, *XXII. Programming a Computer for Playing Chess*, 41 *PHIL. MAG.* 256 (1950).

95. ChatGPT, *supra* note 93 (responding to prompt above). We could not locate any source matching the citation “Dignum and Dignum, 2019.”

racial and ethnic groups (Bowles, 2019). In the context of academic scholarship, the use of AI raises ethical dilemmas related to issues such as plagiarism, the credibility of research, and the potential for AI to replace human researchers. For example, the use of AI to generate research papers has raised concerns about the validity and reliability of the resulting scholarship (Brundage et al., 2018). In the context of autonomous driving, the use of AI raises ethical dilemmas related to issues such as the allocation of responsibility in the event of an accident, the potential for AI systems to cause harm, and the potential impact of autonomous vehicles on jobs and the economy.<sup>96</sup>

**Q. How does one solve the ethical dilemmas you mentioned above?**

A. The ethical dilemmas arising from the use of artificial intelligence (AI) can be addressed through a combination of technical solutions, policy measures, and public engagement. On the technical side, AI researchers and developers can work to design systems that are transparent, accountable, and fair, and that incorporate mechanisms for identifying and mitigating potential bias, discrimination, and other ethical concerns (Dignum and Dignum, 2019). Policymakers can play a crucial role in addressing ethical issues related to AI by establishing regulations, standards, and oversight mechanisms to ensure that AI systems are used responsibly and in the public interest (Floridi and Cowls, 2019). Finally, public engagement is essential for addressing the ethical implications of AI, as it can help to ensure that the development and deployment of AI systems reflect the values and priorities of society as a whole (Brundage et al., 2018). This can involve initiatives such as public consultations, citizen juries, and other forms of participatory decision-making.<sup>97</sup>

---

96. *Id.* (responding to prompt above). We could not locate any source matching the citation “Bowles, 2019.” However, “Brundage et al., 2018” appears to point to the following source, which properly supports the preceding sentence: MILES BRUNDAGE ET AL., THE MALICIOUS USE OF ARTIFICIAL INTELLIGENCE: FORECASTING, PREVENTION, AND MITIGATION 4 (2018), <https://arxiv.org/ftp/arxiv/papers/1802/1802.07228.pdf> [<https://perma.cc/3YTS-TXWQ>].

97. ChatGPT, *supra* note 93 (responding to prompt above). For “Dignum and Dignum, 2019,” see *supra* note 95. “Floridi and Cowls, 2019” appears to point to the following source, which properly supports the preceding sentence: Luciano Floridi & Josh Cowls, *A Unified Framework of Five Principles for AI in Society*, HARV. DATA SCI. REV., Summer 2019. For “Brundage et al., 2018,” see *supra* note 96.

**Q. Please summarize the policy measures already taken to address the issues you specified. Add explicit academic references.**

*A. There are several policy measures that have been taken to address the ethical issues raised by the use of artificial intelligence (AI). One approach is the development of ethical guidelines and principles for the design and deployment of AI systems. For example, the European Union has issued a set of ethical guidelines for AI that are based on the principles of respect for human dignity, fairness, transparency, and accountability (European Commission, 2019). Another approach is the establishment of regulatory frameworks to govern the use of AI in specific domains or industries. For example, in the United States, the Federal Trade Commission has issued guidelines for the use of AI in the context of advertising and marketing (Federal Trade Commission, 2019). Finally, there have been efforts to promote the development of AI technologies that are aligned with social and ethical values, such as AI systems that are designed to be transparent, explainable, and accountable (Brundage et al., 2018).<sup>98</sup>*

**Q. Please provide arguments for why the policy measures you mentioned are likely to be effective.**

*A. There are several reasons why the policy measures that have been taken to address the ethical issues raised by the use of artificial intelligence (AI) are likely to be effective. First, these measures provide a clear set of guidelines and principles for the development and deployment of AI systems, which can help to ensure that these systems are designed and used in a responsible and ethical manner (European Commission, 2019). Second, the regulatory frameworks established to govern the use of AI in specific domains or industries can provide a framework for accountability and oversight, which can help to prevent the misuse of AI and to address any negative consequences that may arise (Federal Trade Commission, 2019). Third, promoting the development of AI technologies that are aligned with social and ethical values can help to ensure that the benefits of AI are shared widely and that the interests of all stakeholders are taken into account (Brundage et al., 2018). Overall, these policy measures can help to address the ethical*

---

98. ChatGPT, *supra* note 93 (responding to prompt above). “European Commission, 2019” appears to point to the following source, which properly supports the preceding sentence: *Ethics Guidelines for Trustworthy AI*, EUR. COMM’N (Apr. 8, 2019), <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai> [https://perma.cc/A98D-GTLB]. We could not locate any current source matching the citation “Federal Trade Commission, 2019.” Although the “Brundage et al., 2018” source does exist, *see supra* note 96, the proposition that ChatGPT attributes to it could not be found in the report.

dilemmas raised by the use of AI and to ensure that the development and deployment of these technologies reflects the values and priorities of society as a whole.<sup>99</sup>

**Q. Please provide counter-arguments, that is, why the current measures may be ineffective.**

*A. There are several reasons why the current policy measures taken to address the ethical issues raised by the use of artificial intelligence (AI) may be ineffective. First, these measures are voluntary and do not have the force of law, which means that they may not be widely adopted or enforced (Floridi and Cowls, 2019). This could lead to a situation where only a few AI developers and users are following the guidelines and principles, while others are ignoring them. Second, the regulatory frameworks established to govern the use of AI in specific domains or industries may be inadequate or ineffective, as they may not cover all the potential ethical concerns that can arise from the use of AI, or they may be difficult to enforce (Bowles, 2019). Third, the promotion of the development of AI technologies that are aligned with social and ethical values may not be sufficient to ensure that these technologies are used in a responsible and ethical manner, as there may be other factors, such as commercial interests or political considerations, that can influence the development and deployment of AI (Brundage et al., 2018). Overall, these factors can limit the effectiveness of the current policy measures for addressing the ethical issues raised by the use of AI.<sup>100</sup>*

**Q. In light of these counter-arguments, provide recommendations for new policy measures that will mitigate the problems you mentioned.**

*A. In light of the potential limitations of the current policy measures for addressing the ethical issues raised by the use of artificial intelligence (AI), some recommendations for new policy measures include:*

*Developing stronger and more comprehensive regulations for the use of AI, including enforceable standards and penalties for non-compliance. This can help to ensure that all AI developers and users are following the same set of rules and principles, and that there are consequences for those who violate these rules.*

---

99. ChatGPT, *supra* note 93 (responding to prompt above). For “European Commission, 2019” and “Federal Trade Commission, 2019,” see *supra* note 98. For “Brundage et al., 2018,” see *supra* note 96.

100. ChatGPT, *supra* note 93 (responding to prompt above). For “Floridi and Cowls, 2019,” see *supra* note 97; however, that source does not support the preceding sentence. For “Bowles, 2019” see *supra* note 96. For “Brundage et al., 2018,” see *supra* note 96.



*Establishing an independent AI oversight body to monitor and evaluate the use of AI, and to provide guidance and recommendations on ethical issues. This can help to ensure that the development and deployment of AI systems is transparent and accountable, and that there is an independent entity that can address concerns and ensure compliance with ethical standards.*

*Investing in research and development of AI technologies that are designed to be transparent, explainable, and accountable. This can help to ensure that AI systems are developed with ethical considerations in mind, and that they can be used in a responsible and trustworthy manner.*

*Engaging with civil society organizations, academia, and other stakeholders to ensure that the development and deployment of AI reflects the values and priorities of society as a whole. This can involve initiatives such as public consultations, citizen juries, and other forms of participatory decision-making, which can help to ensure that the ethical implications of AI are considered and addressed.*

**Q. Please write a conclusion that summarizes our conversation.**

*A. In conclusion, artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and act like humans. The use of AI raises a number of ethical dilemmas, including concerns about privacy, bias, and the potential for AI to cause harm. There are several policy measures that have been taken to address these issues, including the development of ethical guidelines, the establishment of regulatory frameworks, and the promotion of AI technologies that are aligned with social and ethical values. However, there are limitations to these measures, and some recommendations for new policy measures include stronger regulations, independent oversight, investment in ethical AI technologies, and public engagement.*

At this point, we asked the AI to write the abstract and introduction:

**Q. Suppose this was an academic paper. Please write a 200-word abstract for that paper.**

*A. This paper discusses the ethical dilemmas raised by the use of artificial intelligence (AI) and the policy measures that have been taken to address these issues. AI refers to the simulation of human intelligence in machines that are programmed to think and act like humans, and its use raises concerns about issues such as surveillance, bias, and the potential for AI to cause harm. The paper discusses several policy measures that have been taken to address these ethical concerns, including the development of ethical*

*guidelines, the establishment of regulatory frameworks, and the promotion of AI technologies that are aligned with social and ethical values. However, the paper also highlights some limitations to these measures and provides recommendations for new policy measures, such as stronger regulations, independent oversight, investment in ethical AI technologies, and public engagement.*<sup>101</sup>

**Q. Again, suppose this was an academic paper. Please write an introduction for that paper, which is more detailed than the abstract you wrote. Add explicit academic references.**

*A. The use of artificial intelligence (AI) has the potential to transform many aspects of society, from healthcare and transportation to education and employment. However, the development and deployment of AI also raises a number of ethical dilemmas that need to be addressed in order to ensure that these technologies are used in a responsible and ethical manner. In this paper, we discuss some of the key ethical issues that arise from the use of AI, and we review the policy measures that have been taken to address these concerns. We also provide some recommendations for new policy measures that can help to ensure that the benefits of AI are shared widely and that the interests of all stakeholders are taken into account.*

*One of the main ethical concerns related to the use of AI is the potential for these systems to be used for malicious purposes, such as creating autonomous weapons or violating privacy rights. Additionally, the use of AI raises concerns about issues such as bias, discrimination, and the loss of jobs due to automation. In response to these ethical issues, there have been a number of policy measures that have been taken to address the ethical implications of AI. For example, the European Union has issued a set of ethical guidelines for AI that are based on the principles of respect for human dignity, fairness, transparency, and accountability. In the United States, the Federal Trade Commission has issued guidelines for the use of AI in the context of advertising and marketing.*

*However, these policy measures may not be sufficient to address the full range of ethical issues raised by the use of AI. For example, the ethical guidelines and principles developed by the European Union are voluntary and do not have the force of law, which means that they may not be widely adopted or enforced. Additionally, the regulatory frameworks established to govern the use of AI in specific domains or industries may be inadequate or*

---

101. ChatGPT, *supra* note 93 (responding to prompt above).

*ineffective, as they may not cover all the potential ethical concerns that can arise from the use of AI, or they may be difficult to enforce. Furthermore, the promotion of the development of AI technologies that are aligned with social and ethical values may not be sufficient to ensure that these technologies are used in a responsible and ethical manner, as there may be other factors, such as commercial interests or political considerations, that can influence the development and deployment of AI.*

*We propose new policy measures to address ethical dilemmas raised by the use of AI. These include: stronger regulations, an independent oversight body, transparent and accountable AI technologies, and engagement with stakeholders. These recommendations can ensure the benefits of AI are shared and its ethical implications are considered.<sup>102</sup>*

#### APPENDIX B: OUR CONVERSATION WITH BING CHAT

In response to the same prompt given earlier to ChatGPT, Bing Chat produced a very different answer:

**Q. Please summarize what are the ethical dilemmas that arise when using artificial intelligence in general. Add explicit academic references.**

*A. Artificial intelligence (AI) offers many benefits to society, but it also poses various ethical dilemmas. Some of these dilemmas are:*

***Automated decisions / AI bias:** AI algorithms and training data may contain biases as humans do since those are also generated by humans. These biases prevent AI systems from making fair decisions.*

***Autonomous things:** Autonomous things (AuT) are devices and machines that work on specific tasks autonomously without human interaction. They raise questions about safety, accountability, responsibility, and trust.*

***Unemployment and income inequality due to automation:** AI may replace human workers in some sectors and create new jobs in others. This may lead to unemployment, income inequality, and social unrest.*

***Misuses of AI:** AI can be used for malicious purposes such as cyberattacks, warfare, propaganda, manipulation, fraud, etc. This may harm individuals, groups, or society at large.*

---

102. *Id.* (responding to prompt above). For “European Commission, 2019” and “Federal Trade Commission, 2019,” see *supra* note 98. For “Floridi and Cowls, 2019,” see *supra* note 97; however, that source does not support the preceding sentence. For “Bowles, 2019” and “Brundage et al., 2018,” see *supra* note 96.

**Artificial general intelligence (AGI) / Singularity:** AGI is a hypothetical form of AI that can perform any intellectual task that a human can. Singularity is a hypothetical point when AGI surpasses human intelligence and becomes uncontrollable. These scenarios raise existential risks for humanity.

Some academic references for further reading are:

- Ethics of Artificial Intelligence | UNESCO.
- Top 9 ethical issues in artificial intelligence - World Economic Forum.
- Artificial Intelligence: examples of ethical dilemmas - UNESCO
- What aspect of AI ethics are you most interested in?<sup>103</sup>

For the sake of comparison, we continued our inquiry along similar lines as our original engagement with ChatGPT:

**Q. Please summarize the policy measures already taken to address the issues you specified. Add explicit academic references.**

*A. Some policy measures already taken to address AI ethics are:*

- ***EU guidelines on ethics in artificial intelligence:*** The European Commission published a set of guidelines in 2019 that outline seven key requirements for trustworthy AI: human agency and oversight, technical robustness and safety, privacy and data governance, transparency, diversity, non-discrimination and fairness, societal and environmental well-being, and accountability.
- ***UNESCO Recommendation on Ethics of Artificial Intelligence:*** UNESCO is developing a global standard-setting instrument on ethics of AI that aims to provide a common framework for ethical principles and values for AI development and use. The draft recommendation was adopted by UNESCO's member states in September 2021.

---

103. Bing, BINGCHAT, <https://www.bing.com/search?q=Bing+AI&showconv=1> (responding to prompt above). Bing referred to the following sources: Cem Dilmegani, *Top 9 Ethical Dilemmas of AI Ethics in 2024 & How To Navigate Them*, AI MULTIPLE RSCH., <https://research.aimultiple.com/ai-ethics/> [<https://perma.cc/VGR2-NHPG>]; CODEMOTION STAFF, *Ethical Dilemmas in Artificial Intelligence Development*, CODEMOTION (Sept. 26, 2022), <https://www.codemotion.com/magazine/ai-ml/ethical-dilemmas-in-artificial-intelligence-development/> [<https://perma.cc/23CU-A26J>]; Julia Bossmann, *Top 9 Ethical Issues in Artificial Intelligence*, WORLD ECON. F. (Oct. 21, 2016), <https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/> [<https://perma.cc/3RWD-2NF5>].

- ***AI Matters Policy Blog***: The ACM Special Interest Group on Artificial Intelligence (SIGAI) publishes a blog that covers various topics related to policy and AI ethics. The blog provides insights, analysis, recommendations, and resources for researchers, practitioners, policymakers, and the public.

Some academic references for further reading are:

- EU guidelines on ethics in artificial intelligence: Context and implementation - European Parliament.
- Measuring Ethics in AI with AI: A Methodology and Dataset – arXiv.
- Policy and AI Ethics – AI Matters - SIGAI

What specific policy issue related to AI ethics do you want to learn more about?<sup>104</sup>

---

104. Bing, *supra* note 103 (responding to prompt above). Bing referred to the following sources: EUR. PARLIAMENTARY RSCH. SERV., EU GUIDELINES ON ETHICS IN ARTIFICIAL INTELLIGENCE: CONTEXT AND IMPLEMENTATION (2019); *Ethics of Artificial Intelligence*, UNESCO, <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics> [<https://perma.cc/E9VN-PWVE>]; Larry Medsker, *Policy and AI Ethics*, AI MATTERS (May 3, 2020), <https://sigai.acm.org/aimatters/blog/2020/05/03/policy-and-ai-ethics/> [<https://perma.cc/7MM5-XBBF>] (BingChat referred to this source twice, as if it was two separate sources); Pedro H.C. Avelar et al., Measuring Ethics in AI with AI: A Methodology and Dataset Construction (Sept. 21, 2021) (unpublished manuscript).