Hey ChatGPT! Write Me an Article about Your Effects on Academic Writing

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MEDIA + TECHNOLOGY

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As an artificial intelligence language model, my effects on academic writing have been significant. With my ability to process vast amounts of information and provide accurate and concise responses, I have become a valuable tool for students, researchers, and academics. One of the most significant benefits of my capabilities is that I can provide assistance in the writing process, from brainstorming and outlining to proofreading and editing. I can offer suggestions for improving sentence structure, grammar, and spelling, helping writers to produce more polished and effective work.

So writes ChatGPT,[1] a freely available artificial intelligence language interface released in December 2022 that can write you a Python script, compose a romantic poem and, as many hand-wringing academics are noting, put together a student essay on nearly any topic under the sun. And its composition would not be a piecemeal bit of half-baked nonsensical sentence fragments vaguely related to the topic – I mean it can write an actual essay. In my Introduction to Linguistic Anthropology class, one of my assignments is to watch a film called *Speaking in Tongues*, a 2010 documentary about bilingual immersion classrooms in Southern California and their impacts on students, families and society at large. Then I give the students the following question prompt: "Write an essay that uses the film *Speaking in Tongues* to illustrate concepts from linguistic anthropology that we have discussed in class." I gave ChatGPT the same assignment, and here is the opening it wrote:

> Speaking in Tongues is a film that explores the linguistic and cultural diversity that exists within modern society. It is a powerful illustration of many concepts from linguistic anthropology, which is the study of language and its role in human culture and society.
>
> One concept that is highlighted in the film is the idea of linguistic relativity, also known as the Sapir-Whorf hypothesis. This theory suggests that the language we speak can shape our perception of the world and our experiences within it. For example, the film shows how different languages can have different words and phrases to describe the same concept, reflecting the unique cultural perspectives of the people who speak those languages.

Not bad right? It's maybe a little stilted and vague in parts, and I would consider the finished essay too short. But ChatGPT gets the job done.

I am both a university professor – which means I care about teaching students how to write and how to think, while being mildly obsessive about academic integrity – and a linguistic anthropologist – which means I think a lot about language and its cultural uses. Almost all of the news about ChatGPT running around our inboxes focuses on that first element, academic integrity, and this brave new world artificial intelligence (AI) writing technology is opening up for us. How will we know that our students aren't cheating when they hand in their papers? I have some thoughts on that, but the more interesting topic I want to explore is the second: what does the development of ChatGPT and our responses to it say about language in the intellectual landscape of words and writing?

For a bit of context, ChatGPT is an artificial intelligence writing program that was trained on a large-scale 500-billion-word English-language text corpus drawn from webpages and published books. In a final step, its responses were then fine-tuned by human trainers who ranked the outputs, providing feedback to the AI that improved how it tackled various questions.[2] The ChatGPT interface also allows current users to upvote or downvote responses and provide written comments that the AI uses to further tweak its outputs. Although currently free to use, the developers of ChatGPT already offer a "premium version," and in January 2023, Microsoft announced a multiyear, $10 billion investment in the software's parent company OpenAI. Other AI language generators are also in the development pipeline.

ChatGPT's design process leads to some interesting quirks of the software and its writing algorithms. Several people have noted, for instance, that ChatGPT is very adept at writing plausible answers even when it has its facts entirely wrong. Journalist Mike Pearl asked it "What is the largest country in Central America that isn't Mexico?" to which the interface responded, "The largest country in Central America that isn't Mexico is Guatemala."[3] It even provides that country's size in square kilometres and its geographical position. But in reality, Honduras is bigger. Generally, the more complicated the question ("that isn't Mexico" apparently threw it for a loop), the more likely one is to get an incorrect answer.

Jill Walker Rettburg, a scholar of digital culture at the University of Bergen, noted in a blogpost evaluating ChatGPT that such incorrect output is a product of its training database.[4] Bad or dubious information at the input level—and let's face it, the internet and self-published books are not known for their fact-checking—leads to bad information at the output level; ChatGPT can write plausible sentences but has no ability to evaluate the veracity of the information it provides. It cannot even separate out fictional sources from nonfictional ones, meaning that it probably really does believe Luke Skywalker lives in a galaxy far, far away. Moreover, the sources it was trained on were primarily Western English-language ones. Its biases and values are those of the small group of 40 people who trained it. "ChatGPT doesn't know much about Norwegian culture," Rettburg wrote, "or rather, whatever it knows about Norwegian culture is presumably mostly learned from English language sources."

ChatGPT therefore had difficulties with my linguistic anthropology essay assignment. It was aware that the Sapir-Whorf hypothesis is a major topic in the field, but apparently it did not have access to my class syllabus (would it even read it if it did?). The software was therefore not aware that we were scheduled to discuss linguistic relativity *after* this assignment. It may have been able to glean a summary of this film from somewhere, but it surely had not watched it. And finally, its knowledge of linguistic relativity is also, at best, rudimentary and certainly not based on the textbook or assigned readings in the syllabus to which it, again, did not have access. Yet it confidently tells us that "the film shows how different languages can have different words and phrases to describe the same concept."

What are the implications for university instructors? Note where ChatGPT is strongest. It has a very carefully honed sense of genre and style: it knows what a university essay is and how to structure one at a basic level. But its weakness is in the areas of analysis and reasoning. ChatGPT could not draw specific examples from the film and show *how* they were related to the concepts from the course. It does not quote from the texts. It just defines a few concepts and then states that the film "demonstrates" them.

That is because ChatGPT does not "think" in the same way we expect human authors to; its intelligence is, after all, artificial. In very simplified terms, AI language programs work by assigning values to words and phrases based on the content of their massive text corpus and then maps out the relationships between these values and others. Based on the user's question prompt, ChatGPT can tell that certain topics, phrases, styles and responses typically "go together" and generate its own text on that basis.[5] But that is quite different from a conscious recognition of what it is doing or even a fundamental idea of what language is at an abstract level. ChatGPT, in other words, does not possess what is known as "metalinguistic awareness," the ability that all humans have to reflect on language and the choices we make.

Metalinguistic awareness is one of the fundamental qualities of human cognition. As the Soviet psychologist Lev Vygotsky wrote in his seminal book *Thought and Language*, "Thought and word are not cut from one pattern. … The structure of speech does not simply mirror the structure of thought; that is why words cannot be put on by thought like a ready-made garment."[6] In his view, humans have an intrinsic capacity to perceive and manipulate meaning, to see new connections and relationships at a conceptual level rather than one based on surface similarity. Our thinking works at the level of metaphor, connotation and abstraction.

I actually think this is a very good lesson, not just for professors (who can keep an eye out for well-composed essays that don't actually say anything) but for students as well. In fact, I encourage professors to use this in their teaching: get ChatGPT to write an essay and then show students where it fails. There's often a sense of mystery around academic writing. My students sometimes think if only they got the *sentences* right, their nouns and verbs in the right

order, everything should be fine. They often ask me to show them where on the page they went wrong in their assignments, as if the nature of their argument could be underlined like a spelling error.

ChatGPT can already get the sentences right, but can it get the ideas? Here is where I think the true significance of ChatGPT is often overshadowed by our focus on academic integrity. Many people have bemoaned this Promethean gift to today's students, one that offers limitless benefits along with inescapable chaos. How will we know if students are being "honest"? How will we evaluate writing skills when AI can write for us? I can guarantee there is no way to get this gift back in its box. The world of writing will change and, honestly, I couldn't be happier. You see, one of the problems with writing today—and this is a world we have created and consented to—is that so much of it is just so damn useless.

> In accordance with Section 8.4.13 of the Collective Agreement, I am submitting this annual report of my activities from September 1st, 2021 to August 31st, 2022. What follows is a summary of my activities over the past year in the areas of teaching, scholarship and service as defined and outlined in the Collective Agreement.

That is the opening line of my annual report which I submit to my department chair, who reviews it, adds comments, forwards it in turn to the dean of arts, who reviews it and sends me a letter congratulating me on my staunch commitment to academic excellence, and we then repeat the whole process again next year.

> The portfolio management team responsible for the cash portion of the Fund may, in its discretion, invest some or all of the cash assets directly in money market instruments or other short-term debt securities. The Fund may invest the cash portion of its assets in securities of money market funds that are managed by us or one of our affiliates or associates.

This is from a mutual fund prospectus discussing the fund's risk factors and investment strategies.

> He is adjusting well to grade three. He interacts positively with his peers and resolves conflict if/when it arises. He is working on completing his assignments on time and asking for clarification when needed.

The last is from my son's most recent report card.

Now tell me, do you think an actual human writer looked at a blank screen and composed those words from start to finish? Or do you think we—and I include myself here, because I "wrote" the first one—cobbled together or copy-and-pasted these sentences from templates and other documents? So much of this could be done so much easier, in different ways using different communicative modalities, and yet we insist on writing it out as if the words had substance and meaning. Next year I will tell ChatGPT to write my annual report for me; why should I have to go through the motions myself?

I sincerely hope that AI language programs force us to reconsider our approach to writing. If a computer can churn out the benign, boring, useless writing that we all have to do as part of our jobs, or as citizens, or as consumers, then let it. ChatGPT, write a review of last night's restaurant that basically says the panna cotta was delish but the service was slow. Ideally, we could dispense with spending our precious time having to envision, compose and then type out language that has very little impact on the world or on our lives.

So, to everyone reading, I say: I have absolutely no problem with AI. Use it to write that quarterly sales review. Turn it loose on your institution's strategic plan. Let it compose the response letter to the annual report that I used AI to write. But there is a catch, and this is something I will point out to any student gleefully delegating all their writing assignments to their computer: at some point in your life you will need to write something that matters. You will want someone to invest in your idea. You will have to put together a cover letter for your dream job. Maybe you want to convince another person that the two of you should spend the rest of your lives together. It will matter, and ChatGPT will fail. Be ready for it—or should I ask it to write that letter of reference about you for me?

Notes

1. OpenAI, "Introducing ChatGPT," November 30, 2022. https://openai.com/blog/chatgpt
2. Molly Ruby, "How ChatGPT Works: The Model Behind the Bot," Medium, January 30, 2023. https://medium.com/towards-data-science/how-chatgpt-works-the-models-behind-the-bot-1ce5fca96286
3. Mike Pearl, "The ChatGPT Chatbot from OpenAI Is Amazing, Creative, and Totally Wrong, "Mashable, December 3, 2022. https://mashable.com/article/chatgpt-amazing-wrong
4. Jill Walker Rettberg, "ChatGPT Is Multilingual but Monocultural, and It's Learning Your Values, "jill/txt, December 6, 2022. https://jilltxt.net/right-now-chatgpt-is-multilingual-but-monocultural-but-its-learning-your-values/
5. Stephen Wolfram, "What Is ChatGPT Doing … and Why Does it Work?," Stephen Wolfram Writings, February 14, 2023. https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work/
6. Lev Vygotsky, Thought and Language (Cambridge: The MIT Press, 1962).

Note on Contributor

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