

Beyond the Robot Tropes: Embracing Nuance and Context in the Adoption of Generative AI

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Abstract

This introductory article examines the evolving landscape of generative artificial intelligence (GAI) tools, contextualizing their impact through historical tropes of automation as both helper and threat. The authors argue that GAI tools are neither sentient helpers nor existential threats but complex systems that require careful integration into educational and research settings. The article underscores the importance of nuanced, evidence-based approaches, advocating for a balanced understanding of GAI's potential and limitations. It emphasizes ethical considerations and promotes reflective adoption over reactionary measures.

Introduction

By November 2022, when ChatGPT was introduced, large language models (LLMs) had been making their way into our lives for decades. It was natural to assume that ChatGPT was simply a souped-up Alexa or, for those of us who teach writing, a souped up Grammarly. As we learned more about and experimented with this new technology and its capabilities, we may have thought of Gene Wilder's character in *Young Frankenstein* who exclaims with a mix of excitement and terror, "It's Alive!" when the monster sparks to life (Brooks, 1974). ChatGPT rapidly gained widespread popularity and marked a substantial improvement compared to earlier LLMs. Since then, we have tried to grapple with this 'monster.' What should we do with it? How much should we trust it? Can it escape our

control and go rogue? Should we run from it or welcome it into our lives? Do we have a choice? It seems now that we do not have a choice. It is here, and while it is not alive, like any technology, it is already changing our world, for better or worse. This special issue comes at a time when we are looking for guidance and best practices as we navigate the swarming horde of new and quickly advancing generative artificial intelligence (GAI) tools. The contributions to this issue, taken together, provide evidence-based insights about and strategies for integrating GAI into our classrooms and our research.

The Robot Tropes: Is GAI a Helper or a Destroyer?

Though the idea of an automaton dates back at least as far as ancient Greece, Karel Čapek's (1923) play, *R.U.R.: Rossum's Universal Robots*, first introduces the term, robot, as well as the tropes of robot as helpmate and robot as killer. Robot helpers carry out monotonous tasks so that humans are free to pursue life's higher pleasures. Unfortunately, the loss of jobs leads to a luddite revolt against robots who, armed for self-defense, become robot killers that aim to destroy all humans. Isaac Asimov's (2004) *I, Robot* reinforces these conflicting tropes. The robot might be our friend, helpmate, and protector by never harming us, always obeying us unless our orders threaten us, and protecting itself as long as that protection will not violate the first two directives. The robot might also become indistinguishable from us—our equal, our rival, our replacement—or superior to us—our benevolent protector or our enslaver. Asimov poses in his last chapter, "The Inevitable Conflict," the enduring question: If we allow advanced machines to clean

up the messes we make—with our natural resources and our economy—can we accept the inevitable loss of our autonomy?

The tropes of runaway monsters, helper robots and killer robots are ways to conceptualize our initial reactions to GAI tools, such as ChatGPT. Yet GAI tools are *not* robots, do not follow any prime directives, nor are they intelligent (at least not yet, despite their name). They do not usher in the singularity or apocalypse. They are, as Meredith Broussard testified before Congress “very complicated and beautiful math” (Virtual Hearing 2021, p. 4). Particular capabilities of GAI, put in place by that “beautiful math,” such as its ability to “chat” with us in a friendly and helpful tone, to summarize texts and teach us concepts, or to perform tedious tasks for us, call to mind the helpful and protective robot, Robbie, and align with a posthuman impulse to move beyond the traditional divisions between human and machine. Its potential to control our lives through algorithmic racial and economic biases, to replace or displace us in the workplace, and to misdirect and misinform us triggers our fear of apocalypse and machine enslavement.

Although research is emerging on the applications and capabilities of GAI, its widespread adoption is recent enough that the norms and expectations around its use are still developing. Without a better understanding of how we might use GAI effectively and ethically, we resort to our personal orientations and inclinations toward new technology in making these decisions, leading some of us to enthusiastically embrace or adopt, often without much reflection, and others to stand guard, to ban and police. This special issue offers what we think is a middle way. The contributions, from authors who are among our first experimenters, suggest that we should neither preemptively ban nor naively adopt.

They offer nuanced results and assessments of the application of GAI in our classes (Pflugfelder and Reeves; Wang) and in our research practice (Thominet et al). We also review (Reeves and Sylvia) what we deem the best current research on GAI in the classroom, in academic writing and research, and in workplace settings. Based on these contributions, we suggest that before we ban or adopt or judge others for doing one or the other, we think carefully about the contexts and purposes of our experiments with GAI.

Reactions: Banners vs Adopters

What we've heard in our hallways, read on social media, and experienced in workshops quickly cobbled together by Centers for Teaching and Learning suggests that, by and large, current conversations about GAI have lacked a needed level of nuance, and attempts to use GAI have lacked careful reflection about the ethical and educational ramifications. Some of our colleagues, likely prompted by the trope of the helper robot, enthusiastically, sometimes naively and without reflection, embrace integrating GAI as a partner or assistant in their professional and educational work. We have heard colleagues report their use of ChatGPT to help design their courses, to write student recommendations, emails, and abstracts to their papers. Some allow students to use ChatGPT to write drafts and use it to provide feedback or a grade on student work. We suggest that while these practices are not necessarily inappropriate or unethical, they are concerning if they are motivated primarily by the impulse to save time and not by clear educational goals. Conversely, other colleagues, fearing the demise of academic integrity and education itself, become suspicious guardians and detectors even though there

remains no reliable way to detect GAI. Some have gone analog, banning all technology, online or digital readings, resorting to in class writing, in class and oral exams, and more lectures. We must consider whether these measures prioritize the professor's authority at the expense of inclusivity, as they may disadvantage students who write more effectively using a computer and fail to accommodate the diverse learning styles that are best supported by employing a range of pedagogical approaches. In fighting GAI, we risk a return to the “colonial” pedagogy of the past.

In light of the rapid adoption of these tools, professors and universities are scrambling to create guidelines for how students are permitted to use GAI in their own work and creative processes, leading to a wide spectrum of policies. Likewise, scholarly journals and presses are developing policies for GAI use ranging from requiring the disclosure of usage to outright complete bans based on a fear, unjustifiable at this point, that authors will submit entirely generated papers.¹ On the other hand, even the most liberal policies that require disclosure of GAI usage can seem strange from the end of the spectrum at which one uses GAI for spell checking and grammar correction. Authors have never, to our knowledge, been required to disclose the use of Microsoft Word’s spell checker, for instance.

Finally, some argue that use of GAI content is theft. Because the LLMs behind GAI are trained on human-created content, taking that content without compensating humans for creating new content is theft. A host of the *Hard Fork* podcast reported that he stopped

¹ Such fears are based on evidence that has begun emerging of published papers that contain remnants of ChatGPT errata such as “as an AI language model.” Of course, even a complete ban on GAI is unlikely to dissuade these types of submissions.

using AI-generated images in his email newsletter because a small contingency of subscribers reached out to object to the use of the images (Roose and Newton, 2024). He was somewhat surprised by this reaction because the GAI images did not replace images he had previously paid to have created for the newsletter, nor did he ever have any intention of paying for image creation. In this particular use-case, no human labor or creativity was displaced, but it still upset subscribers.

These diverse and contradictory reactions are unsurprising. Techno-utopianist and techno-pessimist reactions have always been common because of widespread belief that technology itself is both a utopian and/or a dystopian force depending on how it is used. Dreams of technology-driven solutions to our most intractable problems and nightmares about technology-driven, unpredictable social change are both understandable and justified because both have come true.

Technology, Memory, Writing, and Thinking

Many of us today worry that relying on GAI will hinder thinking and writing skills, with less concern for memory and speaking abilities. Socrates worried that the technology of writing, which allowed citizens to record rather than memorize what they needed to remember on wax tablets or papyrus, hindered memory and dialogue. Seen from this perspective, writing is a solitary act that closes off dialogue, preventing interlocutors uncovering shared ideas, challenging assumptions, and arriving at a collectively generated definition of key terms—a truth, in Platonic terms. So opposed was Socrates to writing that

he infamously never wrote down any of his own philosophical thoughts.² Fortunately, his student, Plato, wrote them down, presumably from memory. From one perspective, we might argue that Socrates' concerns are justified today. Our ability to memorize has degraded because information is at our fingertips just by typing keywords into search engines (Sparrow et al., 2011). We observe the negative effects of social media on our students' ability to engage in dialogue with each other orally, face-to-face, in class. Seen from another perspective, however, search engines and social media have created new opportunities and affordances, fostering global dialogue and providing unprecedented access to information.

Many of us express concerns, without evidence from research, that frequent use of GAI tools will diminish the capacity for critical thinking over time.³ Some believe that relying too heavily on GAI tools to generate ideas and write drafts undermines the essential challenge of thinking critically. If we view drafting as an important thinking process, one leading to discovery and problem-solving, then we worry that by asking GAI to generate a draft, its "thinking" is supplanting our own. While we may not see apocalypse in our future, we fear the loss of the cognitive recursive process of writing, just as Socrates and Plato feared the loss of dialogue and memory. Those with these fears target prompting as an 'imitation' of recursive writing, not the ideal. However, labeling this viewpoint as "Platonist" oversimplifies the issue. Writing pedagogy generally places greater emphasis

² Imagine Socrates' dismay at the use of pen and paper by those professors and their students returning to purely analog classroom approaches.

³ Concerns about critical thinking arose alongside learning loss from the transition to remote learning at the beginning of the 2020 pandemic and the well-documented brain damage caused by even asymptomatic COVID-19 infections. It will likely be very difficult to pull apart these causal factors.

on the writing process as a thinking process. Sylvia and Takehana (2024) suggest that the use of GAI is most problematic to those who view writing through this frame, emphasizing that it will be important to reflect on how to integrate GAI as a part of the writing process rather than use it as a way to bypass that process. In this view, no matter the type or genre, writing always requires recursive cognitive investment, to varying degrees, that could be supplanted by GAI tools.

On the other hand, we can argue that prompting *is* thinking, the back-and-forth process of responding to a GAI output with better prompts *is* critical thinking, even a form of dialogue. We might view the process of editing a GAI generated text as a recursive writing process. We might accept, and even embrace, the inevitable capacity of technology to change our brains, to alter and refine our thinking. German media theorist Friedrich Kittler (1999) argued that the introduction of new media shifts our epistemic regime by changing the way we understand and engage with the world—and how we write and think. Kittler observed that Friedrich Nietzsche’s experimentation with Malling-Hansen Writing Ball due to eye pain led to a change in his writing style “from arguments to aphorisms, from thoughts to puns, from rhetoric to telegram style,” (Kittler 1999, p. 203). Nietzsche complained that the typewriter was so clumsy to use that it was “more difficult than the piano, and long sentences were not much of an option,” (Emden, 2005 p. 29). Yet, arguably, all of Nietzsche’s most well-known work was created after his switch to the typewriter (Sylvia IV, 2012).

Scores of studies have demonstrated how writing technology changed authors’ writing practices and style. Alphabetic writing contributed to the abstraction of thought

(Ong, 2012). The printing press allowed new and old ideas to be combined across disciplines and helped usher in the Renaissance (Eisenstein, 2009). Word processors blurred the line between writing and revising (Kirschenbaum, 2016). Now, GAI is already changing writing practices through our reciprocal and iterative interactions with it. But it might also, through the feedback loop of our inputs and its outputs, change our style, for better or worse. Recently, a team of researchers found that the common practice of training LLMs on synthetic data—texts generated previously with other LLMs—significantly reduces lexical, syntactic, and semantic diversity (Guo et al, 2024). Students and workers lacking an understanding of the nuances of style and the rich array of stylistic effects will be limited in their ability to edit the texts they have asked GAI tools to produce. A student of Carol's, who works for a company as a prompter and editor of GAI text, struggles to edit GAI generated website copy to attract customers because she does not yet know how to make strategic stylistic choices in her own writing.

We can both critique and embrace GAI, and we can be in a better position to understand how we might use GAI in different contexts and for different purposes. We may find a middle way in which we use GAI for more rote or formulaic writing, while we choose not to use it for our most meaningful or creative writing. However, to get there, we need a clear understanding of how GAI works, which is challenging for two reasons. First, the generative process is “black-boxed,” meaning the machine learning algorithmic processes that transform the input into output are not transparent to users, and likely not even to the AI engineers creating these platforms (Bagchi, 2023). Second, the capabilities and

functionality of GAI have evolved quickly, sometimes creating confusion over what it is or is not able to do or do well.

One example of such confusion arises when, in early 2023, Sylvia was creating a and teaching a professional development session on GAI when he witnessed a considerable misunderstanding over whether ChatGPT⁴ could follow a link that was pasted into the chat and read the contents of that website. ChatGPT-3.5 never had this ability, but it simulated the process, predicting what *might* be present at that website based on the URL and other data. Initially, ChatGPT-4 could not do this either, but the feature was later added, then removed, and then enabled again through the use of plugins. For anyone who was not closely following the development of the tool, it was difficult to tell with certainty whether or not ChatGPT had this capability. This misunderstanding can also translate to research published about GAI tools, because if it's not clear what version of the software was used in the research, or the period of time in which it was being used, future readers may not clearly be able to assess the research results in light of the given functionality at that moment in time. We recommend that future research and writing carefully document what GAI models were used and when they were used in order to help future readers clearly understand the results being shared. Emerging research suggests that ChatGPT-4 can perform some tasks much better than 3.5, for example.

In her class on science writing, Carol allowed students to experiment with ChatGPT 3.5 and Claude for translating technical and nominalized scientific prose into congruent,

⁴ The generic term ChatGPT is used here to refer to the entire suite of tools, which includes versions 3.5 and 4. Part of the confusion related to this question was the different functionality between different versions.

reader-friendly text for a specified audience. In all cases, the students discovered that ChatGPT 3.5 and Claude could produce grammatically correct and clear text but did not always eliminate nominalizations and failed at audience-targeted communication even after iterative prompting. Some translations were also incorrect. We concluded that the emotional and creative dimensions required in audience-focused translations were beyond these tools' capacities. Without this exercise, students might have trusted these tools too much, without understanding their limitations.

Another problem is that we are making judgments about whether to ban or adopt or experiment based on our own specific contexts—our theories of writing and thinking, what we teach, what forms of writing we teach. If we denounce the use of GAI to write drafts because we think it will disrupt the discursive discovery process, we likely have in mind the personal or persuasive essay which we believe requires more complex engagement and rhetorical planning. But if we teach forms of writing that follow a standard format or template, such as a proposal or technical report, we may be justified in allowing students to use GAI to generate a draft that they will edit. If we think of abstracts for research papers as formulaic and requiring no extensive rhetorical thinking, we would then have no qualms about using GAI to write our abstracts and would not agree with journal policies banning the use of GAI. Considering these nuanced differences in contexts can lead us to a healthy spectrum of reactions and strategies that are not confined to banning or indiscriminate adoption. The articles in this issue begin to explore some of that nuance, reflecting on ways that GAI can be used in teaching and researching.

Articles in This Issue

Thominet et al dissolve the human *versus* machine distinction by framing their interactions with Claude in a qualitative thematic analysis as *collaboration*. Through this frame and their reflexive research process, they were able to identify several different roles they played that emerged from their individual positionalities. Playing roles led to different types of interactions, outputs, and insights about Claude’s functionality on different tasks. Their reflexive approach should serve as a model for our own work with GAI in our research, and we might intentionally play the roles they identified as strategies for working effectively with this technology.

In her article “Improving ChatGPT’s Competency in Generating Effective Business Communication Messages: Integrating Rhetorical Genre Analysis into Prompting Techniques,” Junhua Wang explores how integrating rhetorical genre analysis into prompting techniques can enhance the effectiveness of business communication messages created by GAI. Through an experiment involving 85 business communication students, Wang assessed the impact of various prompting techniques on the quality of messages generated by ChatGPT-3.5. The results indicate a positive relationship between prompting techniques and message effectiveness. Notably, however, this study also found challenges related to students with low levels of AI-literacy, highlighting the need for intentional instruction on GAI skills as well as critical evaluation of its output.

In their article “Surveillance Work in (and) Teaching Technical Writing with AI,” Ehren Pflugfelder and Joshua Reeves address the rapid rise of GAI and LLMs and the

resulting concerns about potential misuse in academic settings, particularly in the form of plagiarism. They argue that the surveillance measures and detection services many institutions have adopted to police student writing are misguided and ultimately harmful to the student-teacher relationship. Drawing on lessons from past debates surrounding plagiarism detection services and the proliferation of online content, the authors propose a more nuanced framework for integrating GAI into the technical writing classroom—one that emphasizes critical analysis, authentic authorial practices, rhetorical considerations, and alignment with educational goals. By embracing a pedagogy of care rather than surveillance, they suggest that instructors can help students navigate the ethical complexities of GAI while fostering a collaborative learning environment.

Finally, in our article, “Generative AI in Technical Communication: A Review of Research from 2023-2024,” we provide an overview of the best recently published technical communication-related research on GAI. We analyze the current literature to situate the existing knowledge about GAI within the discipline and highlight underexplored research areas. We conclude that while GAI has the potential to assist in various aspects of writing, research, and communication, there are concerns around reliability, misuse, and ethical violations. We emphasize the need for more research into practices that enable students to interact with GAI productively and appropriately, as well as within emerging legal and regulatory frameworks.

We believe that collectively, the articles in this issue highlight affirmative approaches to using GAI in teaching and research. They highlight exciting potential for how to embrace GAI tools within teaching and research, while also noting the potential

challenges that can arise in the process. They also speak to the importance for continued research and experimentation, approaching their adoption and use in the classroom through a pedagogy of care. As this field – and the world at large – navigates the changes wrought by GAI on our processes of thinking and writing, it will be crucial that we approach these tools with nuance, critique, experimentation, and awareness of contextual factors. This special issue offers a step in that direction, and we hope it inspires ongoing dialog as we all grapple with the transformative impacts of GAI.

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