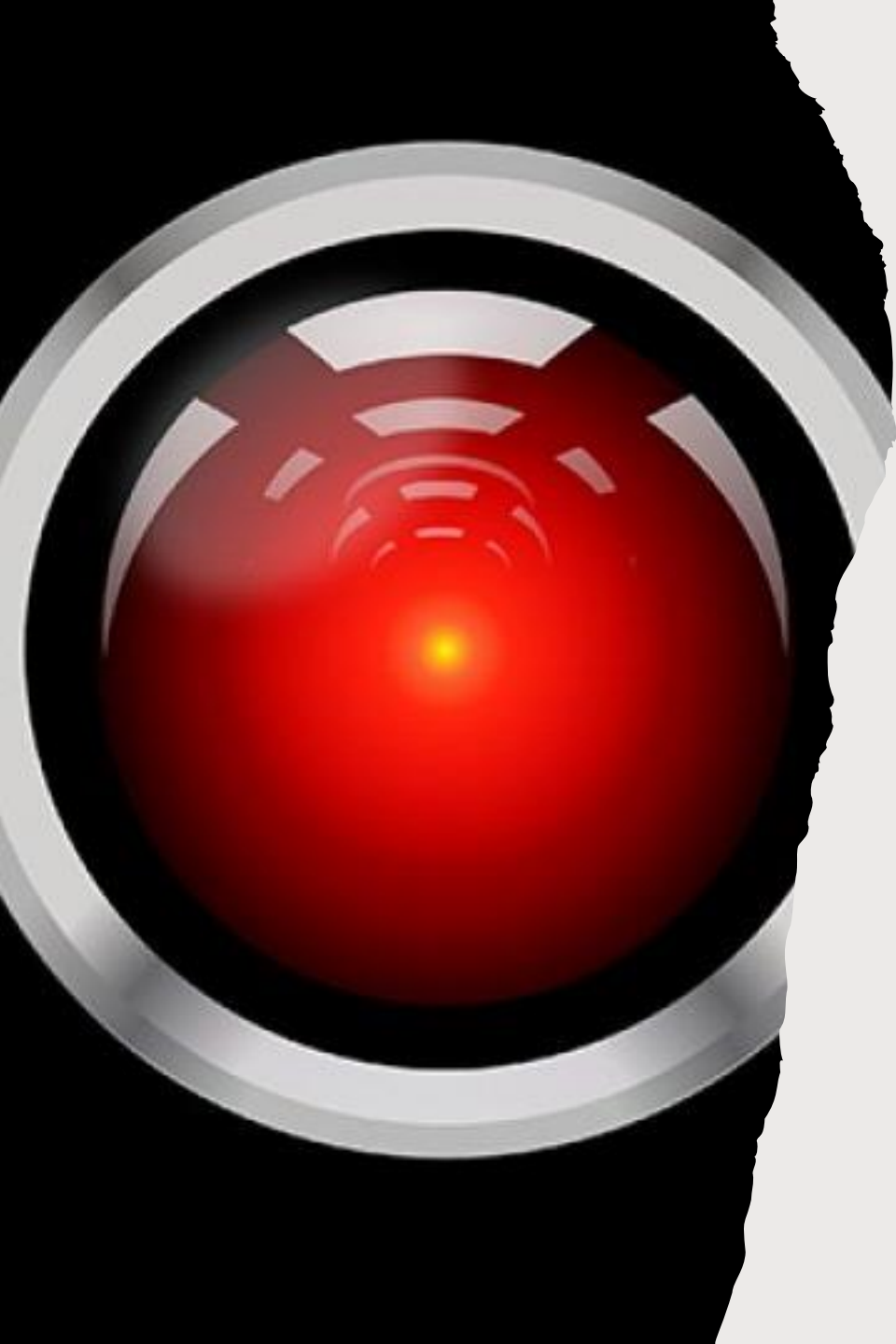


“Maintaining the Humanness of Our Works”:
Empowering Students with Critical AI Literacy

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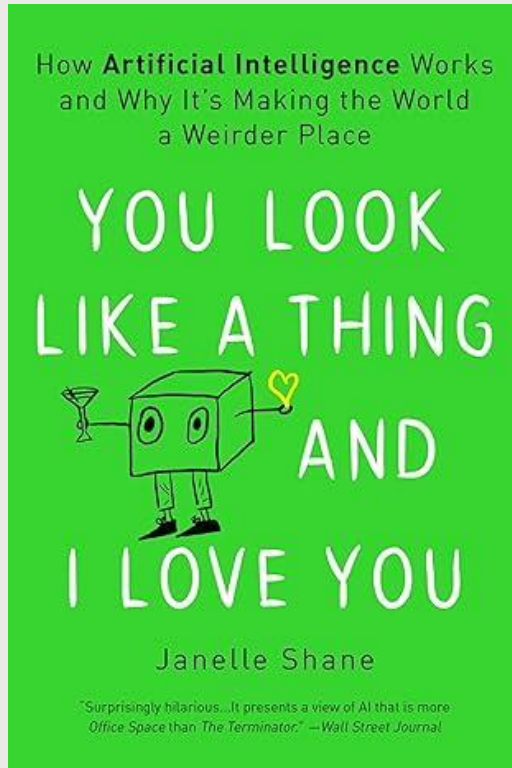
Department of English

Spring Faculty Workshop



DEFINING ARTIFICIAL INTELLIGENCE

Wang (2019, p. 1) defines Artificial Intelligence as technologies that feature “adaptation with insufficient knowledge and resources.”



“AI IS
EVERYWHERE”
(SHANE 2021, P. 29).



CULLER ON TEXTUAL INTERPRETATION

Culler (1975, p. 159) argues that “[t]o read a text as a tragedy is to give it a framework which allows order and complexity to appear.”

Culler illustrates this point by considering newspaper text read as poetry: “If a newspaper editorial be set down on a page as a poem, the semantic features of its elements remain in one sense the same but are subjected to different interpretive treatment and organized at different isotopic levels” (p. 110).

Science & Technology ving the Established Order



Einstein the Incomprehensible

Every scientist has a vested interest in the preservation of the status quo and is thus not to be blamed when the shift and rapid knowledge which he has acquired in great part in time and through struggle in former situations, but because this interest is not to change, there is an organized conservative party within the scientific system — as is found in the occupational systems — that seeks to keep things as they are and to suppress revolutionary movements within the sciences. . . .

Because the scientific revolutionary produces an innovation within the sciences that primarily affects other sciences, the cultural new science does not need to be comprehensible to contemporaries. It may be beyond the understanding of many other scientists. . . . This was certainly the case with Einstein's theory of relativity, the alleged general incomprehensibility of which was emphasized in the popular saying that only eight per cent of the people understood it. But the incomprehensibility to the public advanced neither the acceptance of relativity by the scientific community nor the general lay opinion that [Einstein's] incomprehensibility and revolutionary theory was one of the great intellectual revolutions of the twentieth century. — From "Einstein in Berlin" by J. Bernard Cohen.



It is to define and analyze the interactions between natural and exact sciences and the social and cultural activities.

He says he had long thought historical references to science in science were empty anachronisms, used / by relatively recent historians to describe the work patterns in past centuries. "Could such anachronistic scientific historians in England, Berlin, Harvard conceive their own work as being revolutionary?" Then he says more "as my research began to reduce examples of discourses of revolution in science from each of the past four centuries."

The organizing theme of Mr. Cohen's book, then, is the use of the term "revolution" by scientists and historians: for in pursuing the history of an idea, in examining linkages to external affairs, he also asks "What effect have such social and political upheavals on the French Revolution and the rise of Marxism had on the way scientists, philosophers and historians think about revolutions in science?"

He notes that there is some reason for linking scientific revolutions and those in the political or social spheres. The rapid advance of scientific ideas — notably the innovations of Freud, Darwin, Mendel and Einstein — have occurred at times of political upheavals and have been discussed at current events together with them in literature and in the popular media. The rising expectation that the world can be changed in its political and social structure may indeed be associated with the eagerness to change its scientific ideas. Conservative scientific scientists who challenge the prevailing order may react more readily than they do in other fields who do the same. Einstein had founded when social class rigidity lessened in the face of an unmet demand for technological expansion. Indeed, the scientific revolution is itself an effective vector of social mobility. On the other hand, extreme radicalism has inhibited scientific progress, as we have seen with the imposition of official state science under Hitler and Stalin.

Mr. Cohen accepts his identity as historian, not philosopher or sociologist, and he means it. He makes use of Mr. Cohen's ideas (including some Mr. Cohen has changed since he first wrote about them), but he is much more interested in how both sciences and historians have looked at scientific innovation during the past 200 years. I first encountered him about 30 years ago when I consulted him about the authenticity of a scientific anecdote. My query was empty-headed, and so will the reader of the present work be rewarded — in the context of the notes Mr. Cohen tells and the narrative business with which he documents them.

Mr. Cohen delineates four stages in a revolution. It begins with an intellectual insight. The common then

makes a private record of his commitment to the pursuit. He then communicates his ideas privately with colleagues before he formally publishes them. Finally, his theory is incorporated into the theoretical fabric and practice of conventional science. Instead of giving a precise definition of a revolution, he suggests about existing many scientific revolutions (revolutionary), he lists four necessary criteria for identifying one: there must be a continuity of contemporary research that a revolution has occurred. Later documentary history has to support their claim that a really fundamental change has occurred. There has to be a judgement by historians that the change was revolutionary. Finally, he looks for "the mythology that is part of the accepted heritage of practicing scientists." Indeed this is a historian's theory; it all depends on what you emphasize — his goal's attitudes are objective judgments, my goal's are myths. That is not meant to be an ironic remark, but rather an appreciation of the role of such reflections in the education and motivation of my scientific colleagues.

SOME of Mr. Cohen's most interesting anecdotes concern reviewers' evaluations of their own work. He notes that only a dozen examples where the reviewer has publicly heaped abuse on a revolution. Einstein, in particular, received the revolutionary label. He did not wish to be thought timid; more importantly, he wished to stress the philosophical continuity of his physics with Newton's. However, his contemporary critics of the revolution of theory, Darwinism, if Einsteinian physics is not revolutionary, what is?

At the end of the book Mr. Cohen also discusses briefly the element of quasi-religious conversion in the response of scientists to revolutionary ideas in science. Heist cannot be ignored, but historians should pay more attention to what scientists do, what experiments they perform, in the face of challenge, rather than to the beliefs they voice. If they flourish on the work, they would find that many examples of successful conversion result in scientists a serious intellectual struggle to understand newly presented facts and to accommodate existing theoretical structures to these facts.

"Revolution is history" simply fails to an author's propensity as history. It neither promises nor delivers on the thrilling topic that creative revolutions will be better understood from biographical, sociological or philosophical perspectives. I would have liked to see a recipe for how to create a scientific revolution. The closest I need was how to make historians believe you have made one — a theme that you have done it. (13)

reads
Cohen is
of both
challenging
a society
a historical
impact of
his book
with a
engineering
star in the
classroom,
of my re-
sultation
due to 1984

HOW SHOULD WE READ COMPOSITIONS GENERATED WITH AI?



CLASSROOM APPLICATIONS

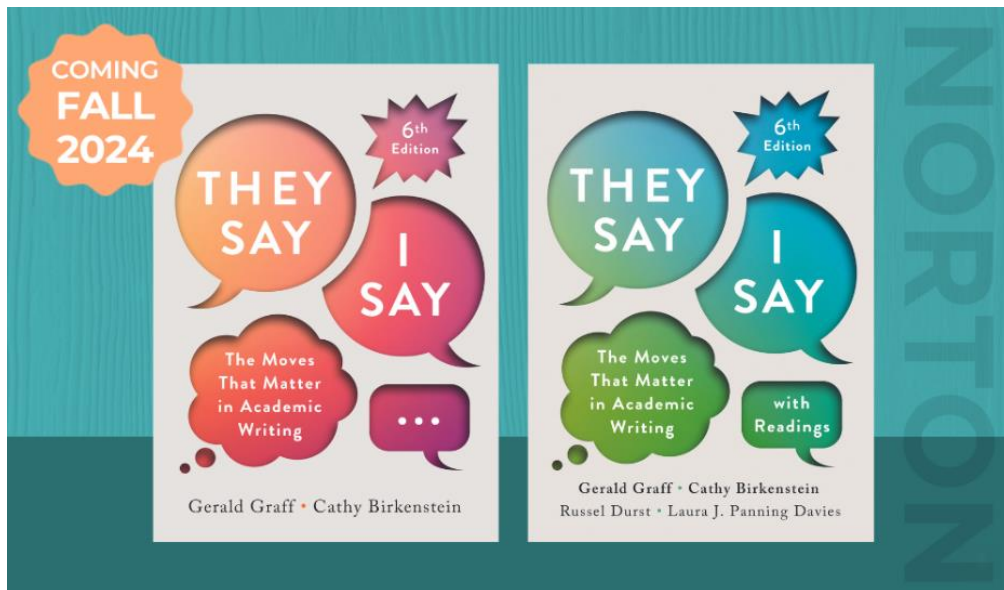
Mills (2023) presents an activity in which students annotate a *New York Times* article and then prompt ChatGPT to write a critique of the same article. Next, students annotate the ChatGPT output. Finally, students critique the ChatGPT output.

Another fruitful area for teaching could involve the application of Hutchinson's and Novotny's framework of rhetorical actions to promote the development of critical digital literacy (2018, p. 114) in relation to large language models. For instance, writing instructors may apply their framework, including the use of the technology and its technical documentation as course texts (p. 114), to scaffold student analysis and critique of user policies and related technical documents for generative AI.

IMPORTANT BACKGROUND INFORMATION FOR BUILDING CRITICAL AI LITERACY

- How do Large Language Models and transformers work to create texts and other output?
- How are the models trained?
- How many (and what kinds of) texts are used in training?
- Why do these questions matter in the classroom and beyond?

(HOW) DOES GENERATIVE AI IMPACT ACADEMIC CONVERSATIONS?



The forthcoming Sixth Edition—available for Fall 2024 courses—includes updates, such as:

"Help Me Understand...!":
When Your They Say is a Bot,"
a chapter on navigating
generative AI tools responsibly

MLA STYLE CENTER'S RECOMMENDED CITATION

Quoted in Your Prose

When asked to describe the symbolism of the green light in *The Great Gatsby*, *ChatGPT* provided a summary about optimism, the unattainability of the American dream, greed, and covetousness. However, when further prompted to cite the source on which that summary was based, it noted that it lacked “the ability to conduct research or cite sources independently” but that it could “provide a list of scholarly sources related to the symbolism of the green light in *The Great Gatsby*” (“In 200 words”).

Works-Cited-List Entry

“In 200 words, describe the symbolism of the green light in *The Great Gatsby*” follow-up prompt to list sources. *ChatGPT*, 13 Feb. version, OpenAI, 9 Mar. 2023, chat.openai.com/chat.

HOW EASILY CAN A WRITER OR READER
DISTINGUISH THE “I SAY” FROM THE “THEY
SAY” WHEN INCORPORATING GENERATIVE
AI IN THE WRITING PROCESS?

WHY DO THESE DISTINCTIONS MATTER?

The Chinese are creating A.I. that “reinforce the core values of the Chinese Communist Party and the Chinese system,” said Chris Coons, Democrat of Delaware. “And I’m concerned about how we promote A.I. that reinforces and strengthens open markets, open societies and democracy.”

<https://www.nytimes.com/2023/05/16/technology/openai-altman-artificial-intelligence-regulation.html>

EXAMPLE ACTIVITY

Students complete the following process:

1. Draft an autoethnography of their AI usage, connecting their experiences with their stance on AI use in the writing process.
2. Complete a written peer review for two peers with peer groups formed based on writers' varied stances on generative AI in the writing process.
3. Meet with their peers to discuss their reviews and to begin planning revisions.
4. Experiment with AI technologies to gain additional feedback.
5. Reflect on peer and AI feedback to complete a revision plan and to gain insight into the unique contributions of peer and AI feedback.

STUDENT
RESPONSES:
PEER
FEEDBACK
ON ONE
PEER'S
WRITING

Peer Feedback: Sample 1

6. What did you find most interesting about your peer's paper? Why? Could your peer's paper be improved by expanding discussion in this area?

I find it interesting my peer did actual research for this paper.

7. What did you find least interesting or most dry about your peer's paper? Why? How could your peer's paper be improved by revisions in this area?

Not enough connection to other applications of AI

8. What would you like to hear more about in your peer's paper?

Usage of different kinds of AI

Peer Feedback: Sample 2

6. What did you find most interesting about your peer's paper? Why? Could your peer's paper be improved by expanding discussion in this area?

I really enjoyed the way you were able to connect "you look like a thing and i love you" to your own life. I believe by connecting so well it helps the readers connect with you as well.

7. What did you find least interesting or most dry about your peer's paper? Why? How could your peer's paper be improved by revisions in this area?

I think one way you can improve this paper is by adding more of a personal story regarding you and a generative AI resource. For example, you can add a story about how ai had personally helped you ect.

8. What would you like to hear more about in your peer's paper?

More of a personal story

THE WRITER'S RESPONSE TO PEER AND AI FEEDBACK

3. **Activity: Exploring AI feedback:** Share your draft with ChatGPT or another AI program of your choice, trying out different prompts that request feedback to help you revise. Describe what technology you used and how you prompted that technology for feedback:

I utilized ChatGPT as the main topic of my essay as I experimented with it and integrated it into different stages of the writing process. In the initial process, I used it to generate an outline, then I compared it to the one that I wrote myself. In the next stage, I compare the process to that of another AI, called Grammarly.

4. How was the AI feedback similar to or different from your peer feedback? Can the AI serve as an audience for your paper? Why or why not? Do you anticipate using AI to gain feedback geared toward revisions in the future? Why or why not?

The feedback given to me from ChatGPT, was much more insightful when it came to fixing wordings and structure of paragraphs, while my peer feedback was much more helpful in pointing out what they felt was missing or could help to better connect the paragraphs as a whole to the entire essay. I do anticipate using AI to gain feedback geared towards revision, but I will also still utilize peer feedback. I plan to use a mixture of both AI generated and peer recommended feedback in my future writing endeavors.

INTEGRATION OF PEER AND AI FEEDBACK: VARIED PROMPT STRATEGIES

3. **Activity: Exploring AI feedback:** Share your draft with ChatGPT or another AI program of your choice, trying out different prompts that request feedback to help you revise. Describe what technology you used and how you prompted that technology for feedback:

I was pleasantly surprised to find that ChatGPT was able to provide me with some pretty good feedback. In order to get relatively high quality feedback, I tried my best to explain to ChatGPT what the paper's prompt was, specific types of feedback that I'd like, and some other feedback that I got from my peers. The AI provided me with a list of suggestions ranging from word usage for clarity, academic tone, and work on making a better conclusion.

4. How was the AI feedback similar to or different from your peer feedback? Can the AI serve as an audience for your paper? Why or why not? Do you anticipate using AI to gain feedback geared toward revisions in the future? Why or why not?

There were quite a few similarities between my AI feedback and my peer feedback. Most notably, I was able to take pieces of my peer's own feedback and noticed that the AI provided very similar suggestions, but provided a different reasoning that was different from my peer's. I'd say that AI can serve as an audience for my paper, but shouldn't be the only audience used because of its limitations. While AI has access to a lot more information all at once than a human could process. I do anticipate that AI can provide meaningful feedback geared toward revisions, but believe that the prompt needs to be a lot more specific and carefully tailored in order to provide high quality feedback.

DISCUSSION AND CONCLUSIONS

- Critical AI literacy, as part of digital literacy and information literacy, is an essential area of learning for all writers and readers.
- While traditional citation formats provide a starting point for documenting one's use of generative AI in the writing process, there is need for additional scaffolding of students' critical AI literacy beyond simple citation.
- When afforded the opportunity to explore and discuss AI technologies in the writing classroom, students are able to critique the technologies, identifying their advantages and limitations.
- Critical AI literacy empowers writers to evaluate their writing and writing processes, leveraging new technologies while maintaining awareness of AI's limitations as well as the power of their own voices.

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THANK YOU

I would love to hear your thoughts and questions! You may also contact me at Salena.S.Anderson.58@gmail.com for more information about this research.