

Chapter 3. Understanding Bridget and Kate

Bridget's Interview in Context

In the summer of 2023, artificial intelligence (AI), specifically generative AI, was ubiquitous in the news and in conversations. While our research for this book had long been in progress, the release and widespread use of generative AI tools—particularly the accessibly-interfaced OpenAI tool ChatGPT—accelerated interest and development. The interviews presented here are based on a recorded transcript, aided by AI transcription tools for accuracy. Open AI, and popular discussion of the tool, made for interesting context and shared cultural touchstones. This text intends to propel and refocus discussion of artificial intelligence not just on threats, problems, and shortcomings, but promises and hopeful developments.

The interviewee, Bridget, highlights the transition from predictive AI to generative content and underscores the importance of well-curated data in AI applications, which enables ownership and copyright control over AI-generated artifacts. The current landscape of technology and work present several key concepts that demand attention. Thought leadership plays a significant role in shaping the direction of innovation, especially in the realm of artificial intelligence (AI). From predictive to generative AI, the possibilities are expanding rapidly. This expansion, however, raises important ethical questions, particularly regarding the control of inputs and the potential consequences of AI in the workforce. Instead of focusing solely on job loss, we must consider the emphasis on tasks that were previously impossible without automation. By using AI, Bridget amplifies the writing and design output of a small team. Advanced image processing makes it easier than ever to communicate among experts and share ideas with higher fidelity than previously possible. But more broadly, as Bridget references, new forms of scientific analysis and drug research are on the horizon. AI provides an avenue for redefining what's achievable.

A highly accomplished individual, Bridget's journey is the black swan story (Taleb, 2016), the unicorn (Mollick, 2020)—the one-in-a-billion match between preparation and need. Yet success is contingent on opportunity matching experience and the rhetorical dimension of increasing the probability of recognition of the match cannot be overlooked.⁸ Yes, Bridget possesses that magical Bridget-ness that makes her the unicorn, the black swan, but in presenting her story, we hope to capture technical, social, and attitudinal elements that help her stand

8. Michael hopes to be recognized as an emotionally intelligent elephant, or perhaps a gray rhino (Wucker, 2016) or really more as a silverback gorilla, as a senior academic, while John is much more comfortable with navigational metaphors like *metis* as an avid backwater kayaker—better certainly in the mitten than 115° F desert heat.

out. We try to highlight these moments and recommend ways of emulating and preparing for similar watershed moments; pointing to the variables that distinguish the disruptive opportunities from more evolutionary change, allowing the professional to anticipate shifts in paradigm as well as emergent trends. Her journey exemplifies adaptability, innovation, and an enduring commitment to pushing the boundaries of knowledge and technology.

Adapting to change has become an essential aspect of our professional lives. We need to recognize the changes that are on the horizon and actively participate in making them. While some might associate seniority with resistance to change, it's essential to understand that experience can also be leveraged to lead change effectively, as our third interview with Terry similarly reinforces. Diversity, both in the data and within our teams, also strengthens responsive and adaptive capacity. Change requires diversity of thinking, experience, and identity. We see a clear example of this in Bridget's reference to both the careful selection of training data for ContentLib's AI model—helping to prevent biased image generation, juxtaposed with the contrasting example of Levi's AI-generated diverse models. Had Levi's developed a working relationship with a diverse model pool, perhaps they could have ethically used generative AI in ways that resonated with customers. Both illustrate the importance of representative datasets. Although not mentioned explicitly in the published transcript, remarkably, Bridget's analytics team is gender balanced and, while striving for other forms of diversity, reflects the team's appreciation of different ways of knowing and range of experience—the ways the team members see the world differs and so their interpretations of opportunities, frameworks, roadblocks, and warnings all must be communicated to each other and discussed. Recognizing diversity as a source of strength allows the team to address the varied needs of diverse clients and anticipate the weaknesses of solutions derived by monocultural competitors (Joshi & Roh, 2009; Rowlett et al., 2023).

Gender parity and identity parity are vital aspects of creating diverse teams, and this diversity often leads to richer outcomes. As Kate describes in her interview in the next chapter, it is also essential for managers to use AI-driven tools ethically in diverse teams to avoid recreating existing patterns of marginalization and discrimination. Artificial intelligence plays a pivotal role in saving time and making the impossible possible. It's crucial to remember that AI doesn't replace humans but complements their abilities, offering a multitude of options and enhancing brainstorming. However, AI has the capacity to be used carelessly by managers, and in ways that make contract workers and employees feel pressured and scrutinized through automated evaluations.

In this context, we can draw a parallel to the field of brute force genomics, where AI doesn't eliminate creativity in drug discovery but allows for the testing of every possible chemical construction's potential usefulness. While hiring a large staff may not be feasible, employing AI backing can make it appear as if a small team has the capabilities of a much larger one. AI's primary focus is on enhancing the value of human work and creativity, enabling us to excel at what

we do best. The ethical basis of trusting a database lies in controlling and cleaning the dataset, engaging in arbitration and auditing as opposed to opting for a more “open” approach. This control ensures the content’s reliability and even opens new possibilities, such as copyrightability of the outcomes, which could be an unintended consequence. As we explore these concepts, we must also consider the Latourian black-boxing phenomenon that arises as a consequence of cultural acceptance and utilization, ultimately shaping the way we perceive and interact with technology (more on this in Froth & Blackboxing).

The first interview explores how technology is reshaping the modern workplace, emphasizing thought leadership in AI, the ethical considerations surrounding it, and the transformation of the workforce. It highlights the importance of adapting to change, the value of diversity, the role of AI in enhancing human capabilities, and the significance of controlling and cleaning data, as illustrated by ContentLib’s ability to generate copyrightable images. For Bridget, one realm for ethics considerations is the data used to base prediction or generative output: both require well-sourced and scrubbed data that is highly and closely curated to ensure the inputs reflect the desired parameters for outputs. Unlike an open AI system (for instance, OpenAI which scours the web for publicly available texts) control of the inputs allows for ownership. That is, owning all the data inputs and the algorithms means the organization claims ownership of the outcome. ContentLib sells the ability not just to create AI generated images but to own and distribute the outcome of images produced. The model of closely controlled inputs allows for copyrightability—legal and financial control of the outcome of the algorithms. Legal recognition for the outcomes of generative AI is a significant advantage in the financial longevity of artificial intelligence technologies and presents interesting new considerations for intellectual property law (see Reyman, 2010, esp. Chapter 8). These discussions lead to a deeper understanding of how technology and innovation are reshaping our world, ultimately affecting cultural acceptance and utilization.

The interview also stresses the value of AI as an enhancement to human work, especially in terms of data analysis, cost-efficiency, and productivity. It encourages young professionals to embrace change in the workplace, emphasizing the importance of diversity in data, teams, and approaches to yield better results and problem-solving. Ethical considerations, such as fair compensation for content providers and copyrightability of AI-generated outcomes, are central to the discussion, aligning with the idea of Human-Centered Artificial Intelligence. The interview underscores the transformative potential of AI as a collaborative human-digital tool that augments capabilities, enhancing productivity and decision-making.

Bridget led the discussion in many fruitful directions, and we, John and Michael, followed her by presenting our dialogic analysis in the order she articulates themes and ideas in the interview—interjecting our questions and responses as well as occasional requests for clarification and further explanation. Under the heading of thought leadership, Bridget described organizing an industry-academic conference a decade ago, bringing together companies developing earlier versions of artificial

intelligence with academic researchers. This first interview covers early development of artificial intelligence, but quickly, as Bridget narrates the industry-academia conference she led at Indiana University in Bloomington, demonstrating her leadership. At the time, attention was on predictive AI—where Bridget’s graphics work began. Predictive AI includes using patterns to forecast future results, anticipating user needs, and suggesting content for marketing and web navigation. The recent shift is from a focus on predictive to generative AI content.

During her interview, Bridget consistently talked about the value and importance of defining meaningful and rewarding work with AI, both for her and her work team. Quite explicitly, she asserts that much of her work in analytics would simply not be possible without the assistance of her digital tools. Though we have redacted Bridget’s discussion of this point for privacy reasons, suffice to say that in many small businesses, a pair of people (or even an individual) may be responsible for the majority of revenue. In such contexts, AI-driven tools can significantly alter workloads, speed up routine tasks, and allow employees to prioritize other work. Furthermore, Bridget’s organization—working on the slim profit margins that are standard in the internet age—simply cannot afford large teams performing the kind of work AI routinizes for her. She has the capacity to perform the kind of data analysis and content production a team of 10 or 12 would have been needed for just a few years ago. Human labor is simply prohibitively expensive for some applications.

The interview also counsels young professionals to accept change as a constant in the workplace. Recognizing that change can be disruptive, there are patterns that can be seen, anticipated, and responses proactively planned. For Bridget, the newest members of the team need to be aware of change, what is likely altered, and how they might best prepare for these changes to job responsibilities, focus, and organization goals. Then, with growing experience and awareness, she expects mid-level practitioners to participate and articulate the impacts of emerging transformations, suggesting and participating in the design and alteration to approach and focus. Finally, with experience and seniority, participation and anticipation of change becomes expected and leadership requires looking around corners and beyond the horizon to not only anticipate but to maintain readiness for change. Not to anticipate the implications of change has built-in consequences: failure of imagination results in less competitive, less effective teams in the long term, and Bridget sees these consequences as the responsibility of senior leaders. Articulating potential change can take significant resources: not betting on a single inevitability but retaining flexibility and formulating ranges of outcomes and responses to hedge but also remain humble in the face of inevitable if not wholly predictable transformation. Here again rhetorical preparation is invaluable: judging outcomes as more and less likely while meaningfully persuading others to envision and prepare for likely outcomes of change.

The constant theme of change throughout Bridget’s interview should come as no surprise. We are writing this book in a time of rapid technological and

social change in relation to generative AI. In the next section, we situate Bridget's interview in a particular time and context, as well as our analysis at the time of writing. We then historicize this current techno-cultural moment through Latour's *Pasteurization of France* as well as a brief history of AI and related ethical and labor issues. We discuss Latour, the cultural froth, and blackboxing in more detail below.

Recontextualizing Early AI discussions

Reflecting on Bridget's interview, it is worth recontextualizing the moment. It struck us how early all three interviews were in the public's understanding and reaction to generative AI. At the time, much of the discussion centered around concerns about artists' work being used without consent to feed image generators. While that conversation remains relevant, it seems the focus of concern has shifted. People both seem more comfortable seeing AI-generated images and text and have become more adept at identifying AI-generated content, even when it doesn't exhibit obvious flaws, such as unrealistic features like the infamous "seven-fingered" hands.

The technologies and the organizations behind generative AI have moved swiftly, developing more powerful and ever-larger language models. The outcomes have steadily improved, after an initial dip when massive numbers of new users flooded publicly available chatbots and decreased their effectiveness temporarily. Interestingly, many of the problems captured in our conversations may no longer be relevant by the time of publication, but they may be of historical interest, and problems will still be evident. The nature of the problems will change, but the complicated, layered, and anxious relationship between people and our technologies remain: that is, the expression of the problems will likely change many times over. But tension between technological artifacts and their application in work contexts will likely remain precisely because work is contested space. Workers will avoid work while managers attempt to maximize productivity: artificial intelligence, traditional or generative, will not solve underlying problems of power and wealth inequality. They may, however temporarily, make these conflicts more perceptible, perhaps even for a period of time make distinctions between powerful and powerless stark. And new stasis will emerge, however briefly. In moments like this it is valuable to remember that the disruption to work has many historical precedents. For instance, the *New York Times* reported that:

Americans in "farm occupations" go back to 1820, when they were reported at less than 2.1 million, or about 72 percent of the American work force of 2.9 million. By 1850, farm people made up 4.9 million, or about 64 percent, of the nation's 7.7 million workers. (AP, 1988)

Similarly, the Bureau of Labor Statistics reported change to factory work in the

later shift from industrial to postindustrial manufacturing:

At the turn of the century, about 38 percent of the labor force worked on farms. By the end of the century, that figure was less than 3 percent. Likewise, the percent who worked in goods-producing industries, such as mining, manufacturing, and construction, decreased from 31 to 19 percent of the workforce. (Fisk, 2001)

38 percent worked on farms at the turn of the 19th to the 20th century, while at the dawn of the 21st, less than 3 percent worked the land. And manufacturing employment halved in that same timeframe. It is not yet clear if AI will be as disruptive to labor trends and working conditions in the 21st century as the shift away from agriculture to factory work and from factory work to service work from the late 19th into the early 20th and on into the 21st century. But many are worried, some even alarmed. One current student in Michael's class likes to talk about the "carnage" at her summer internship where half of her colleagues were let go during her first summer of work with AI being blamed for the layoffs. There are similar pressures being exerted on secondary education and especially humanities programs yet the worries for the shift and the early movers towards lightening the labor costs for literate activity—everyone from technical communicators to science writers to copy editors—is palpable. Evidence for the need to reduce these labor costs is scant. Instead, moves made by those already skeptical of their investments in literacy work: the scribes of the postliterate age, the literate in a culture of secondary orality, remain valuable if not valued and are often the victims of opportunistic expressions of power.

In clearer terms, allow an analogy. There is no less need for effective journalism today; indeed, we see in the absence of the fourth estate the very need we have for journalists as well as the corporate and powerful interests benefitting from the lack of authoritative investigative media in an age of dis- and mis- information. Journalism was emptied of its labor and consolidated. So too technical writers and writing instructors may find themselves displaced, but it isn't because of a lack of need for their skills due to AI. "Never let a good crisis go to waste." Whether attributed to Machiavelli, Churchill, or Rahm Emmanuel, the ability to lay off workers is not the same as not needing those workers' skills, and the froth of AI development may create opportunities for change.

Throughout the exchanges with our interlocutors, Kate, Bridget, and Terry articulate opportunities to do things never before possible and projects that can be pursued because of labor savings and cost shifts. At no point do any of these experts, and also *managers*, recommend reductions in employees but expansion of capabilities.

Intelligent agents save time and make what was once impossible possible. Automated agents make repeating actions easier to manage through routinization. John has described the value of generative AI creating a draft of a "bad news" email for

students not completing written assignments: generative AI allows for quick drafting of factual emails to students without getting mired in emotional response. Rather than enduring the stress created by triple-checking for accuracy and clarity while simultaneously processing the emotions of both parties, the base email can be fact-checked and edited with less stress. Similarly, routine responses to queries from colleagues can be customized to contain appropriate levels of small talk which neither Michael nor John tolerate well. Personal preferences should drive useful applications for AI. Brainstorming activities can yield a wider variety of possible starting places, addressing the fear of the blank screen—horror vacui—that bother some creatives. Copy editing is the bane of others. Dozens of possibilities to drive intelligent agents and the application of AI in writing should be made by those working with the tools. The driving force should be personal choice, emphasizing autonomy, and the amount of assistance will be driven by the demands of those individuals' workplaces. Casual users may rely almost entirely on generative assistants, but this would be unacceptable for experienced practitioners of writing as well as in other fields of professional endeavor, as the recent SAG-AFRA strike demands make clear. The distinction between professionals who write and writing professionals. Specialists in the nuances of the written word, sufficiently experienced to address novel situations outside the ken of artificial agents, will continue to be in demand, although the value of their expertise may continue to be overlooked. And it is that activist positioning that will distinguish effective professional scribes from their counterparts in the age of secondary orality that Ong (1982) anticipated so effectively.

In other words, AI should not replace human beings in workplaces nor reduce remuneration. Automation may have reduced the sheer numbers of workers at a variety of workplaces over time, but as generative agents become commonplace as assistive, AI should be recognized as tools for improving human satisfaction with meaningful work. Furthermore, advances and changes to these artificial agents must be driven by those most directly impacted, as the development and maturation of user-centered and participatory design strategies continues. This is where people's efforts have the potential to yield the best results, not by resisting AI but participating in the creation of meaningful involvement in the development of artificial intelligence. We are not arguing that reductions in workforce aren't happening. Rather, that *how* the reductions are happening, *who* is involved, and what *meaningful* automated work looks like are of greater concern within the estimated lifetime of readers, as these are explicit management decisions with ample room for participatory dialog.

We have yet to fully understand what intelligent agents allow us to do—things we deem impossible or too expensive now. Bridget talks at some length about how her team “onboards” new members, but how she and her organization functions remains tightly constrained by economic limits. Image sales are bound by razor thin profit margins. With assistive artificial intelligent agents, she can multiply both the labor of the least experienced members of her team as well as create ways of measuring the value of that time.

Time and again, Bridget returns the conversation to ethics. Perhaps by design, or perhaps as an unintended consequence, the ethical decision to pay providers appropriately for their content yields the benefits of copyright-ability of the outcomes of generative AI. Following Shneiderman (2022), it builds on the best of human collaborative and collective work, allowing us to articulate a *Human-Centered Artificial Intelligence*. Ethical considerations are present in all three interviews within this book, and are foregrounded in conversations surrounding this moment of AI development, as intended and unintended consequences emerge. Yet often, the conversations are not entirely new. We turn here to another historical moment of significant techno-cultural change to illustrate: pasteurization—before we provide a brief history of AI’s development through the lens of professional writing, extending Bridget’s brief history of her involvement in AI development.

Froth and Blackboxing

Latour’s 1993 *Pasteurization of France* effectively emplaces readers in the context of the spreading acceptance of the process invented to keep milk and other consumable liquids free of pathogens. Completely unremarkable today, Latour narrates the fraught possibilities for the technology. Competing processes, different cultural stakeholders, acceptance of new processes and technologies, fear of the unknown and change all result in what Latour names the cultural froth surrounding the acceptance of the pasteurization process as it spreads across France, then Europe, and eventually globally. In this book, the froth surrounding artificial intelligence has obscured some of the technology’s usefulness and its underlying helpfulness. Certainly, the dangers and concerns surrounding artificial intelligence, particularly the less transparent developmental details of machine learning and misuse of copyright protected source texts need to be considered. Yet many concerns are, like those surrounding pasteurization, genomics, the internet, Wikipedia, irradiation of food for preservation, part of the cultural froth and reactionary response not to real dangers but to the froth of change. Latour also developed the idea of blackboxing technology, most clearly expressed in *Pandora’s Hope* (1999, p. 304) in which technology becomes increasingly invisible and unremarkable—like pasteurization today. We take safe milk (even shelf stable milk, which is far beyond Pasture’s wildest dreams) for granted and wince when we let a container of milk spoil in the refrigerator. Someday soon, artificial intelligence will drive many of the technologies we take for granted and only be noticed when design or technical failure make the artifact appear anew before us, to look at rather than through it, and realize how many layers of technological tradition we take for granted every moment of our complicated, agent-supported, electronically-mediated, fossil-fuel-dependent lifestyles.

Bruno Latour’s concept of blackboxing describes how technologies, once established and widely accepted, become opaque—users take them for granted,

ignoring the complex social, technical, and political processes that created them. When a system works, its inner complexities become invisible; only failure or controversy forces people to reopen the black box and examine its mechanisms.

AI, as a black-boxed technology, operates through hidden layers of algorithms, training data, and corporate interests that shape its outputs. While AI appears seamless, its decision-making is not neutral—it reflects biases, labor conditions, and power structures embedded in its design. Opening AI's black box requires interrogating its data sources, exploring ethical implications, and articulating economic consequences, making transparent who benefits, who is excluded, and how control is distributed. As AI reshapes work and identity, dismantling its opacity requires explanation & narration, stakeholder & resource identification, as well as democratic oversight to ensure it serves society rather than entrenched power. Clay Spinuzzi's *Network* (2008) offers an expanded explanation of blackboxing (pp. 50-54 and throughout); we include a summary here for clarity.

History, Equity: Early Provocations

The conversation with Bridget provides an opportunity to revisit the history of AI: at least through the lens of professional writing and literacy. Although the term “Artificial Intelligence” was not coined until the mid-20th century, the seeds of AI can be found in literature, including Samuel Butler's 1872 novel, *Erewhon*.

In *Erewhon*, Butler explored the concept of sentient machines long before the formal inception of AI. His novel featured a civilization where machines were considered dangerous and were confined to “the museum.” This early science fiction work hinted at the moral and societal dilemmas that AI would later confront. In 1955, John McCarthy drew together a community of inventors and programmers that formed the founding community of artificial intelligence. McCarthy developed the Logic Theorist, an early AI program capable of proving mathematical theorems. This was a significant milestone, demonstrating that machines could replicate human problem-solving skills. McCarthy's work on the Logic Theorist showcased the potential for AI to handle complex tasks through symbolic reasoning. The formal history of AI began in 1956 at the Dartmouth Workshop (Solomonoff, 2023), where McCarthy brought together experts to explore the possibilities of creating intelligent machines. McCarthy's work extended and formalized the discussion of AI, building upon the ideas and concepts presented in early science fiction. Not long after McCarthy's coinage, Carl Whithaus articulates the early history of computer aided instruction, prior to the Burns' oft-cited “first” dissertation in computers and writing research. Whithaus (2004) points to Computer-Aided Instruction (CAI) and Human-Computer Interaction (HCI) as precursors to artificial intelligence, defining the important oscillation of attention between computers as computation devices and as media for communication.

The history of artificial intelligence technologies and technical communication and computers and writing research is closely intertwined. This brief

overview of the history of the field is biased to issues of machine intelligence; for a thoughtful history of technical communication, see Bernadette Longo's *Spurious Coin* (2000). If we start as far back as Plato and Socrates, it is the technology of writing itself that is viewed with suspicion, producing the "appearance if not the reality of wisdom" in students (Plato, 274-279b). Rather than repeat this age-old criticism, the history of written texts is one of a shift from, in Ong's famous articulation, oral to literate culture (1982). For Ong, the shift to multi-modal literacies ushers in a new age, one of secondary orality, in which scribes retain ancient knowledge—literacy and the code for writing rhetorical incantations. Gregory L. Ulmer declared, under the spell of Jacques Derrida, that we were in an age of *electracy* (1994). Whatever the preferred moniker, it is valuable to remember that the emergence of generative AI is not unprecedented or unexpected or, really, much of a surprise for those of us who witnessed the early age of the internet and the world-wide web. Each technology disrupted the previous technological order, but we have been witnessing a slowly unwinding change to the modern literate order at least since Ong's secondary orality in the mid-20th century and the advent of mass broadcast culture in the form of radio, film, and television.

Further, technology-driven history is technologically deterministic. Artificial intelligence applications are not driving the historical changes. Rather, people and organizations with invested interests (money) are pushing technological change. Focusing on technologies as agents of change obscures technology's human origins. Technological determinism occludes power, making it difficult to unravel the dynamics that make people feel subjected to technology rather than allowing the recognition of oppression. Techno-oppression is simply oppression: the same process of humans subjugating other humans. By recognizing how technologies are developed and unmasking the all-too-human processes of diminution of individual agency: these critical engagements with technology can at least reveal the human origins of technologies that sometimes feel inevitable and irresistible.

That word *irresistible* has two interwoven meanings when it comes to technology and seem particularly apt when discussing artificial intelligence technologies, generative and otherwise. Humans seem drawn to them; they are fascinating. We are dazzled. And in this way they are simultaneously seductive, and in Richard A. Lanham's (1993) phrasing, we look through these technologies and see the world anew. This powerful lens-making and altering ability of emergent technologies make them powerful in that humans seem unable to resist their allure as powerful tools, and in doing such we anthropomorphize them, welcoming them into our lifeworlds. In Freire's phrasing, we adopt new technologies and integrate them into our routines (Freire & Macedo, 2000). And that irresistibility, that enthrallment, with emergent technologies leads to the second meaning of irresistible. Second, it seems both inevitable and unavoidable that this configuration of affordances in this particular configuration is a natural expansion of existing technology into the future—giving agency to

artifacts where effective design is the expression of obscured power. Effective design appears both natural and an extension of the status quo into the future; each version is the same, only better. Such inescapability carries with it a feeling of inevitability. Its face is the irresistible march of progress. And it is the attendant sense of technological inevitability that short-circuits agency. Resistance and, more productively, engagement is most certainly not futile. Indeed, engagement and productive confrontation are the only means of meaningfully rearticulating technological change. As Feenberg has written in so many places, none as clear and powerful as in *Transforming Technology* (2002):

[T]he real issue is not technology or progress per se but the variety of possible technologies and paths of progress among which we must choose. Determinists claim that there are no such alternatives, that technological advance always and everywhere leads to the same result. This view is increasingly contested by students of technology. But if alternatives do exist, the choice between them will have political implications. (v)

What does this have to do with the field of technical communication or the computers and writing community, the scholars investigating literacy in the age of artificial intelligence? Everything and nothing. Technical communication and, as Kate describes their development, subsequent titles, categories, and career descriptions are attendant professionals tending to the creation, development, and deployment of technologies both locally and globally. Effective design masks the made-ness, the human-ness of technological artifacts and critical engagement and deconstruction allows eyes to see beyond the sleek façade of successful technologies.

Engagement is a first step towards calls for social justice at the heart of recent developments in the literature of the field of technical communication (Jones, 2016). Technological engagement is one facet of the quest for equity. Another facet is articulating the resources consumed in maintaining artificial intelligence technologies. In the Introduction, we articulated examples of emergent participatory opportunities for realizing social justice through critical application of AI, and in the Conclusion we examine photography as an example of black-boxing over multiple technological shifts. Here, we summarize a history of AI development in relation to the intertwined disciplines of rhetoric, writing, and technical communication. The right to resist finds footing in the everyday work of those who shape, document, and challenge technological systems—technical communicators, rhetoricians, and writing researchers. These fields help surface the human decisions embedded in technological artifacts and call attention to the power structures they encode. We appreciate the principled stance of refusal articulated by Jennifer Sano-Franchini et al., in *Refusing GenAI in Writing Studies* (2024), but question its long-term viability. Technologies are rarely born

democratically, as history reminds us. Generative AI is already in our classrooms. Refusing it entirely risks abandoning students to corporate narratives. Instead, we should teach students to see through the user-friendly veneer to the politics beneath (Kemp, 1987; Selfe & Selfe, 1994).

Automation redistributes, not eliminates, labor—and often in ways that disempower workers. This is a question of power, not just technology. Refusal alone cannot address technopower.

We deeply value the work of Sano-Franchini et al., and the ARG AI Discord (Messina et al., n.d.), and agree with much of their critique. But refusal risks foreclosing necessary inquiry. Intellectual solidarity includes dissent. We believe in equipping students to interrogate and repurpose these tools—not to reject them outright. We turn to how histories of rhetoric and writing—especially those concerned with technology—offer tools for tracing AI’s development and imagining its future.

Probability: Available Means of Persuasion

This section opened with reference to Plato and, depending on your perspective, his teacher or his *character* Socrates. Either moniker reveals a stance, and either an attempt to engage a critical view or invite (neo-)Platonists. Either is a choice meant to address an audience and to articulate the available means of persuasion. Referencing this Aristotelian definition raises the probable nature of inducing agreement and the indeterminacy of meaning. Since language is symbolic, there is slippage between thought, symbol, word, and meaning. Enter Kenneth Burke (1969).

Another powerful tool that has arisen simultaneously with generative artificial intelligence is corpus analysis. In its most powerful applications, a corpus (Poole, 2016) can point to more effective means of persuasion. Bradley Dilger’s CROW undergraduate repository has more than passing resemblance to the kind of ensemble we describe here, although designed to address different research questions. See the CROW website for more⁹ and in particular Michelle McMullin et al. (2021) on iterative persona.

Generative AI works, literally, by articulating every possible word that might make sense and then selecting the most probable word that through prompting the user finds acceptable, and running that probability analysis recursively until it has strung together enough words to meet the requested prompt’s parameters. This description utilizes technical and machinic language purposely as many descriptors use humanizing and anthropomorphizing language to describe processes of choice and composition. Generative AI technologies do not compose or create: they collect possibilities and locate probabilistic analyses of language output. According to Nupoor Ranade and Douglas Eyman:

9. <https://writecrow.org/>

The architecture of generative AI ... comprises three main steps, encoder input or prompt, a transformer model, and a decoder. First, a text prompt is input into a text encoder that is trained to map the prompt to a representation space. Next, an algorithm called a model maps the text encoding to a corresponding pattern that it was trained on to capture the semantic information of the prompt Finally, a decoder generates text based on the sequence of words that appeared in the training data for a similar purpose and context (2024, 2)

Ranade and Eyman similarly use mechanical descriptors to emphasize the clockwork actions of the database analysis and data swapping. The machine is not writing. But the computing machine is performing technical aspects of rhetorical activities: the prompt receives a response that articulates the most likely means of persuasion. Millions of times per second.

Revising the prompt to provide not one but multiple available means of responding reveals just how Aristotelean and rhetorical generative AI is programmed to be. Upon prompting, the system generates numerous possible responses and selects the most likely: word by word, the database gestures towards the available means of persuasion. Ask for numerous possible responses and the AI system will deliver multiple possible utterances of decreasing likelihood, a measure ascertained from its algorithmic analysis. If asked, it reveals its rhetorical core by delivering probabilistic responses and exhaustively, flawlessly articulating available means of persuasion. These responses are only as good as the database of texts it has to compare to new possible utterances, new potential texts. As Daniel Little aptly asserts in “Talking About Tech Comm: Stochastic Publics with Jamie Littlefield,” while describing critiques of LLMs and ChatGPT in particular, “ChatGPT is probably somewhere in between fact and bullshit. It’s *flawed*, but powerful. It’s probabilistic, but it’s also useful” (2025).

Here it is valuable to mention how intellectual property owners fought back against the use of their IP in the model, reducing how large the LLMs could become (Mangan, 2024). Schoppert (2023a, 2023b) has published extensive lists of pirated ISBNs included in LLMs and made these available for publishers to see, bringing suits as appropriate, and ChatGPT experienced an immediate decrease in accuracy once these titles were (however partially) removed from the database. In effect, it removed potential means of persuasion (see also Cooper et al., 2025).

Ranade and Eyman begin their introduction with Burns’ 1983 note on AI in Composition, mentioning his invention programs TOPOI, BURKE, and TAGI, bemoaning the state of computing power and expense of memory—both RAM and disk storage. Burns’ “note” concludes with a quote from Hofstadler about the direction of AI research that emphasizes the *simulated* features of human consciousness and reemphasizing the artificial nature of AI. Further, Burns’ attention to the rhetorical nature of “writing must mix knowledge products with linguistics

processes.” Burns underscores the humanistic focus of AI research in writing as far back as 1983, concluding:

I, for one, believe composition teachers can use the emerging research in artificial intelligence to define the best features of a writer’s consciousness and to design quality computer-assisted instruction—and other writing instruction—accordingly. (Burns, 1983)

Here, as elsewhere, the emphasis is placed on pedagogy and writing for academic purposes. Meanwhile, technical communication research was working to distinguish itself as outside secondary education, articulated as workplace writing, as Lee Odell and Dixie Goswami’s *Writing in Nonacademic Settings* would be published in 1985.

Articulating Machine Learning: 1970s and 1980s

During the 1970s, AI research expanded into the development of expert systems. These systems employed knowledge bases and inference engines to mimic human expertise in specific domains. Dendral, created by Edward Feigenbaum and Joshua Lederberg (National Library of Medicine, n.d.), was one of the earliest expert systems, designed to analyze chemical mass spectrometry data. Expert systems represented a crucial step in applying AI to practical problems. Late in the 1970s, Burns’ oft cited dissertation appears and, although CAI is used in the title, his argument can be readily understood as a precursor to contemporary artificial intelligence. Burns’ 1979 attention to pedagogical applications defines the approach computers and writing scholars develop to literacy teaching using computational resources for writing.

The 1980s witnessed the emergence of neural networks and the connectionist approach. Researchers like Geoffrey Hinton and Yann LeCun (Bengio et al., 2021) laid the groundwork for deep learning, a paradigm that emulated the way the human brain processes information. McCarthy’s influence extended to this era as his earlier work on AI inspired the pursuit of more human-like learning in machines. Simultaneously, the field of composition blooms into a viable subdiscipline of English with renewed attention to rhetoric in the late 20th century and the emergence of the postmodern as James Berlin’s work indicates. Gail Hawisher and Cynthia Selfe begin publication of *Computers and Composition* in 1985 (now *Computers and Composition: An International Journal* published by Elsevier). This history, without the focus on artificial intelligence included here, is available through Hawisher et al. (1996). Twenty-first century histories are emerging, with the inclusion of web-based journals—in particular *Kairos*—and the awkwardly if accurately named requirement for “born-digital” text. Histories for web journals are available, including the *in media res* version of *Kairos*’ own history. See Cheryl Ball and Eyman (*The Kairos Book*, forthcoming, in perpetuity).

Artificial Intelligence at the Dawn of the World Wide Web: 1990 to 2010

AI historians like to assert that the 1990s and early 2000s marked the resurgence of AI, in part due to advancements in machine learning and the availability of massive datasets and the emergence of big data research. But everyday users will remember establishment of the first generation of the World Wide Web and then Web 2.0 when URLs in television commercials and movie screens first started appearing. This period saw the development of practical AI applications, including computer vision, speech recognition, and recommendation systems that drove early versions of Amazon's recommendation engine, which suggested other titles in books, music, and movies (Smith & Linden, 2017). Visions of intelligent machines began to take shape as AI applications became integrated into daily life.

Deep learning saw rapid progress in the 2010s. The advent of deep neural networks allowed machines to tackle complex tasks, from image and speech recognition to natural language processing (Ha & Tang, 2022). These advances have led to breakthroughs in autonomous vehicles, healthcare, and more, further fulfilling the goals of early AI pioneers. For techno-rhetoricians, it was the syntactic web that held the most promise (Robie et al., 2002) for the syntax ushered in the possibility of rhetorical mark-up, or persuasive digits. In the early 2000s, the internet shifted heavily towards Wikipedia's gift economy and it seemed that donated labor might negate the need for artificial intelligence, or at least nullify any demands for generative AI even before predictive AI hit its stride (Shirky, 2009).

Emergent Issues: 2010-2020

In the 20-teens, predictive AI was a quieter revolution driving developments in e-commerce and increasingly efficient online development, displacing the human labor with digital, or at least the appearance of slick technological magic that elided in the hidden back-room digital sweatshops represented by digital Turks (Pittman & Sheehan, 2016). Again, digital ethics (Reyman & Sparby, 2019) becomes a concern not only because of unpaid or poorly paid labor displaced to poor places but the emphasis on digital haves and have-nots, an increasing gulf between those in the privileged world and those laboring as *Postindustrial Peasants* (Leicht & Fitzgerald, 2007).

The post-industrial peasant is a worker in an economy transformed by automation and AI, where traditional employment declines, and economic survival requires adaptability. Unlike the industrial-era worker, who relied on a stable wage, today's laborer assembles a portfolio lifestyle—a mix of gig work, freelancing, cooperative ventures, and bartering, much like historical peasants who farmed, crafted, and traded to sustain themselves. Wealth is no longer solely income but about autonomy, resilience, and access to shared resources.

This shift carries risks. Consumer debt replaces wage growth, masking the erosion of middle-class prosperity, leaving many with the illusion of security but little ownership. Venture capital-backed platforms dominate the gig economy, extracting value from workers while offering little protection or stability. While digital technology enables peer-to-peer cooperation and new economic relationships, benefits are unevenly distributed.

The challenge is to counteract precarity by fostering community-based alternatives—platforms owned by workers and users rather than corporations. Without such models, the post-industrial peasant is left in digital serfdom, dependent on algorithms that dictate wages, work, and access to resources. Any sustainable future balances efficiency with economic security to ensure prosperity beyond technological dependence.

As automation and AI redefine work, Universal Basic Income (UBI) emerges as a potential safety net for the post-industrial peasant, a worker navigating economic instability through fragmented income streams. UBI, an unconditional cash stipend for all, could mitigate the precarity of gig-based and freelance economies, offering a baseline of economic security amid declining full-time employment.

Historically, peasants survived through a mix of labor, barter, and subsistence activities, relying on community structures for resilience. Today's post-industrial peasants—task-rabbits, digital freelancers, Airbnb hosts—similarly patch together incomes, but lack traditional support systems. UBI could act as a modern commons, providing a buffer against algorithmic wage volatility and platform monopolies.

Yet, without structural reforms, UBI risks becoming a subsidy for precarious labor, propping up exploitative digital economies rather than empowering workers. If AI-driven efficiency leads to job scarcity but productivity gains remain concentrated among tech elites, UBI may function as a poverty management tool rather than a pathway to shared prosperity. Challenges remain in pairing UBI with worker-owned platforms, cooperative models, and digital commons, ensuring that economic independence isn't reduced to mere consumption but fosters autonomy, skill-building, and collective agency. Where livelihood is redefined beyond employment, and self-worth emerges from creative contribution, shared prosperity, and communal resilience rather than market validation. As career-driven identity fades, new forms of meaning take root—through craft, collaboration, and mutual aid—allowing individuals to engage in purposeful work.

As AI evolves, the ethical implications of its widespread use become increasingly apparent. The need for responsible AI development underscores the importance of considering the impact of AI on society. Early visions for AI have, in part, given rise to discussions surrounding AI ethics, regulation, and transparency. The UNESCO interests in AI ethics attests to widespread concerns (see below for extended discussion of UNESCO and AI).

AI powers virtual assistants, autonomous vehicles, healthcare diagnostics, and financial algorithms. Symbolic reasoning and neural networks continue to shape the field. Machine learning, natural language processing, and reinforcement learning are at the forefront of AI research, enabling machines to learn from vast amounts of data and adapt to new tasks. The history of AI reflects influence of early science fiction and pioneering AI researchers contributing to the development of intelligent machines that continue to shape our world, prompting discussions about ethics, responsibility, and the societal implications of AI. ArsTechnica, among others, assert connections between fictional sources and subsequent development (Foresman, 2016).

Current Issues in Artificial Intelligence: 2020-and Beyond

The intersection of artificial intelligence (AI) and ethics has undergone profound transformation from the late 20th century through 2025, reflecting both the significant impact of AI on society and the pressing need to address its ethical dimensions. Dustin W. Edwards (2021) maps the infrastructural implications of networked technology which, together with artificial intelligence, inform the present concerns with the environmental, social, and technological faces of technological development.

In the early 2020s, ethical AI ascended to prominence for governments, organizations, and the tech industry at large. The European Union pioneered the globe's inaugural comprehensive AI regulation, a groundbreaking initiative emphasizing ethics and transparency formally proposed in 2021 and enacted in 2024 (Artificial Intelligence Act, 2024). Major tech conglomerates, including Google and Microsoft, made unequivocal commitments to AI principles, affording top priority to fairness, accountability, and transparency. AI ethics research continues developing with explicit focus on algorithmic fairness, the elucidation of decision-making processes, and the mitigation of inherent biases. Hart-Davidson (2018) trailblazes with concerns with robotic writing and technorhetoric, among others.

The ethical challenges posed by AI extended their reach to encompass military applications, with a notable emphasis on autonomous weapons (Ridolfo & Hart-Davidson, 2023). The creation and deployment of lethal AI systems ushers in concerns about accountability, compounded by the potential for AI to independently make life-and-death determinations, circumventing human intervention. This ignited global discussion concerning the need for international accords to regulate and govern autonomous weaponry, thereby preventing the unchecked proliferation of these technologies and the ethical dilemmas they entail. AI's potential for facilitating environmental and social well-being assumed greater prominence. AI was harnessed to model climate change, coordinate disaster response efforts, and underpin sustainability initiatives. The ethical considerations surrounding these applications were multifaceted, particularly

regarding the judicious and responsible use of AI for addressing pressing environmental challenges. These considerations mandated a harmonization with global sustainability goals, fostering an ethical imperative to align AI-driven solutions with the broader mission of environmental preservation. Nothing makes this clearer than lethal innovations on the battlefield in Ukraine as this is written (Burgess, 2024).

UNESCO's ethics statement on artificial intelligence (2022) underscores the importance of ethical AI development and use. It emphasizes principles that prioritize human rights, justice, and fairness in AI systems. The statement calls for AI that respects the dignity and freedom of individuals, ensuring non-discrimination and inclusivity. It advocates for transparent and accountable AI, where users understand how decisions are made, and developers are responsible for the technology's consequences. Human-in-the-loop design remains central to this goal. Furthermore, the document highlights the necessity of considering AI's societal and environmental impact, calling for sustainable and environmentally friendly AI applications. UNESCO's statement promotes international cooperation and the development of AI in line with global ethical values. It encourages research and education to enhance AI ethics, equipping individuals with the knowledge and skills to navigate AI-related ethical challenges. UNESCO's statement serves as a crucial guide for ensuring that AI benefits humanity and adheres to ethical standards. The UNESCO standards provide a roadmap for creating ethical AI that incorporates human values.

AI's relentless impact on the workforce engendered deliberations on the ethics of automation and the attendant specter of job displacement. Ethical considerations spanned retraining and upskilling the workforce, ensuring a just and equitable transition to an AI-augmented job market, and the imperative of addressing and mitigating social inequalities that AI might inadvertently exacerbate (Howcroft & Taylor, 2023). However, both Bridget's and Kate's testimony emphasize how AI streamlines existing processes and allows for attention on new and emergent challenges. Processes and goals once thought out of reach and too expensive (in human labor hours) become routinized and integrated into the working world of these professionals through AI-enhanced automation. What would once have taken teams of people weeks to complete now takes a small team hours—but these emergent practices would have been deemed much too resource intensive just a few short years ago. These tasks would have been left undone, further differentiating exemplar organizations from their competition and increasing per-employee productivity.

Ethical concerns remain dynamic, inextricably intertwined with the trajectory of AI's advancement. The global community has unequivocally acknowledged the imperative of establishing and upholding ethical guidelines, regulations, and best practices, all geared towards assuring the conscientious and beneficial use of AI as demonstrated by the UN's statement on the ethical development of artificial intelligence. AI ethics and energy consumption are likely to remain at the

forefront of discussions and initiatives as developers and users together grapple with challenges posed by AI.

Automation, driven by the advancing realm of artificial intelligence, is a dual-edged sword; it can address the work that is unachievable due to the prohibitively high cost of labor while also fostering new opportunities that wouldn't exist without it.

Complex, repetitive tasks that once necessitated human intervention are now efficiently handled by machines. This shift has proven especially beneficial in industries where the cost of labor was a significant barrier to achieving certain work objectives. Automation offers a practical solution, significantly reducing expenses, while enhancing productivity and precision. This transition, though accompanied by concerns about job displacement, has the potential to usher in new work prospects, primarily focused on maintaining, monitoring, and enhancing automated systems. Furthermore, the synergy between automation and artificial intelligence has enabled the execution of intricate data analysis, forecasting, and problem-solving tasks that were previously beyond reach. It has allowed for the development of systems capable of processing immense datasets, offering insights, and facilitating the emergence of groundbreaking applications in a variety of fields such as healthcare, finance, and environmental sustainability.

Ultimately, the true value of AI lies in its ability to focus on repetitive and data-driven tasks, thereby allowing humans to concentrate on what we do best—using our creativity and problem-solving skills. In this partnership, AI becomes a valuable tool that enhances human potential, streamlines processes, and elevates our ability to tackle complex challenges. Considering the emergent legal and ethical contexts of AI use, it is worth highlighting here that ContentLib made intentional, structural choices about how to compensate stock photographers, as well as how to license stock content, in order to create infrastructure that enabled a more ethical approach to generating images. Stock photography—the commodification of technically sound images—has not been a steady single-source income stream for photographers since approximately the mid-1970s. Yet, ContentLib affords a model of image generation that contrasts many of the legal and agentive critiques of generative AI models as inherently extractive and exploitative. Though corporate rather than community-owned, it demonstrates the potential for more ethical participatory implementations of generative AI in the current moment.

From Stock Images to Security

Bridget's words focus on numerous big-picture issues and the values underlying her professional development intertwined with AI's emergence. By offering a brief history, summary of themes, and focused description of ethical and social issues raised here in the interstitial analysis, we highlight important elements. In the next

chapter, Kate Agena's interview, we introduce the tools and procedures she and her team at McAfee have developed to support and streamline work processes. Kate's focus on current AI applications contrast with Bridget's long-range expert vision, and illustrate what is already being done in leading organizations.