Special Issue Editorial: Extraction by Design—AI, Value, and the Future of Work

I. Introduction

IN AUGUST 2025, Australia's Productivity Commission acknowledged that "large AI models are already being trained on copyrighted materials without consent or compensation" [1, p. 25]. In doing so, they cited evidence already documented by numerous scholars and advocates regarding how traditional expectations about safeguarding the ownership of completed work could no longer be assured. Yet, shocking authors and artists, the commission continued onwards to propose that the legal concept of "fair use" can be interpreted as allowing tech companies to freely use copyrighted material to train artificial intelligence (AI) models even without explicit consent [2]. Even while raising the possibility that this concession for tech companies would come at the expense of copyright owners, the commission acknowledged that the local economies of AI innovation might still feel no benefit whatsoever: "At present, large AI models are trained overseas, not in Australia. It is unclear whether the introduction of a [text and data mining] TDM exception would change this trend" [1, p. 28]. It is easy to see the injustice of giving away the rights of authors and artists to their work and (meagre) livelihoods, especially when doing so doesn't even promise direct payoffs back to Australian workers. But how can we move beyond this initial critical reaction towards also contextualizing such transfers of intellectual property (IP) within a more robust understanding of how work and its products are currently governed in the age of AI?

Two months earlier, book lovers had been disturbed by visions of another eerie spectacle. Again, actors in the public sector initially appeared to interpret existing laws and policies in a way that treated technological adoption preferentially in comparison to other social goods, such as payments for copyright owners and authors. News came to light that an AI company had bought millions of second-hand books, sliced them into pieces, and fed them through "industrial scanners" in the United States, recycling the fragments afterwards [3]. This bulk purchase and destruction coincided with the same company's extraction of seven million volumes from online databases of pirated books, themselves already illegally stored. Journalists juxtaposed the two simultaneous extractive strategies to illuminate that a California courtroom would consider the destructive scanning procedure as "fair use," but not the incorporation of pirated files [3]. These events came to our attention when in late March 2025, the Editor-in-Chief of the journal *Engineering Studies* posted on social media that according to a software tool shared by *The Atlantic*, one of her books and 20 of her articles had already been ingested by this company's LLM training process [4]. By September 2025, a settlement had been reached to pay U.S. $3000 to each author whose pirated books had been used without authorization [5]. The fact of the destructive scanning quietly disappeared from the conversation by fall, since the court ruled it a "transformative" change, and attention instead shifted to the fact that authors of pirated books could lodge claims for payment [6]. Summing up this quiet disaster closer to the moment in which it occurred, a journalist opined: "Your interactions with Claude and similar AI systems now carry the weight of millions of destroyed books" [3].

Nearly as striking as the story itself is how it echoes a central plot point of *Rainbows End* by Vinge [7]. Published in 2006 and set in 2025, the novel involves a corporate interest attempting to digitize the University of California, San Diego library by destroying the books and placing them under the control of a proprietary, corporate-government consortium. But the predictability of destructive methods to control knowledge and remove public ownership points to the broader possibility that opportunities for knowledge theft and power abuse were, at least in part, a foreseeable aspect of AI technology. Part of our motivation to address how AI will reshape knowledge and power in future workplaces comes from our collective interest in Norbert Wiener's socio-technical theories. Wiener, a key figure grounding the perspectives in this Special Issue, used the term "governor" while defining the discipline of cybernetics: a term that he developed from the Greek word for "steersman" or "governor." In what follows, we move forward from the public aesthetics of AI technology described above, towards an updated theory accounting for some of the dynamics of AI and work that have arisen since our workshop, and finally towards what possibilities of foresight and intervention the articles in this Special Issue appear to offer.

II. Energy, Intelligence, and Supply Chains

The vision of words removed from pages, and pages removed from bindings, highlights the extractive processes underpinning everyday digital services. By extraction, we refer to the deliberate removal of value, whether economic, social, or creative, from humans and the natural environment, often without consent or compensation, and often for the purposes of accumulation and commodification by others [8], [9], [10]. Although it may be common knowledge to IEEE audiences, not every user of cloud-based software, or even electricity itself, can think past the sleek interfaces of digital

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tools to consider the costs in mining fuels, moving them, and both powering and cooling the increasing number of data centers enabling today's software [11], [12] [12], [13]. Mining books—not even for their stated words but instead for the logic of the relationships between them—evokes and parallels the more tangible forms of mining for fuels and minerals. Yet, what is noteworthy for this Special Issue goes beyond the question of "ecological footprint" to instead encompass transfers of ownership regarding labor and its products; modes of dematerializing extraction that separate knowledge, creativity, and even meaning from its human sources, consolidating it into proprietary products; and emergent forms of harm that, like previous kinds of damage attributable to "energy," avoid visibility because of their distance from end-users.

Thinking of AI technologies by means of the relationship between mining (as a practice) and energy (as a concept) reminds us of how regrettable environmental legacies can hide behind a clean and innocent-sounding key term set forth as a social good. In an age in which social understandings of technology are highly mediated by bedazzling narratives sprinkled with occasional moments of horror, we are reminded of how contemporary scholars are currently diffracting these sparkling concepts, such as energy, into their more jagged components, such forced labor, transnational shipping, and the microplastic fragments and chemical traces that find their way out of vehicle tires [14], [15], [16]. The comparison with energy also draws attention to the mental and emotional effort made by consumers and producers of mining-intensive products, who must deliberately avoid fully experiencing and acting upon the knowledge of their harms to frame these products as worth having. Norgaard et al. explore this "social organization of denial" in the case of climate change inaction in Norway, where her interlocutors knew about climate change as an abstract insight, but made use of an extensive "cultural toolkit" that kept this knowledge separate from their political, social, and private lives [17, p. 12]. One role of key terms such as "intelligence" can be to establish and preserve these cultural "toolkits" by which we exclude awareness of the full range of social, political, and ecological transformations at stake in a process of industrial change.

In late 2025, the concept of energy illuminates a strategy for comprehending the Future of Work in the Age of AI, because it brings with it not only a heavy extractive legacy, but also the opportunity for transformative interdisciplinary thinking in the spirit of the mid-20th-century Macy Conferences on Cybernetics [18], [19]. As a concept, energy carries legacies of 19th- to 20th-century modernist visions of labor control [20] and of fossil-fueled thermodynamic machines [21]. The concept not only conveys an immaterial, ubiquitous, and even precious force or substance [22], but also alludes to processes of extraction and enclosure, for example, of capacities and substances that political ecologist Jason Moore calls "cheap labor" and "cheap nature"—capacities and substances that, like the used books sliced up in California, are actively remade into raw materials taken as industrial inputs [23]. However, "energy" can be rethought to explore its expanded set of meanings, including its seemingly magical and tantalizingly aesthetic dimensions, as well as the logics of prestige, privilege, and inequality that it reveals in practice within specific case studies in society [22]. The very multiplicity of socio-political and academic relationships with energy offers the possibility of epistemic and political transformation [24]. Likewise, for AI and its implications, scholars are following the examples of the Macy Conferences to bring together multiple intellectual disciplines related to what the Future of Work can and should be. Through interdisciplinary intellectual effort, both "energy" and "work" can be conceptually broadened and transformatively reimagined in ways that may allow us to move beyond intellectual and political limitations to produce more robust strategies for comprehending and governing industrial change on our own terms.

III. Contemporary Logics of Workplace AI

AI's ongoing arrival into many different kinds of workplaces is currently placing serious strain upon the emotional and political dynamics of work, as well as the basic infrastructure of collective social and political life beyond the workplace. Evidence is repeatedly emerging to suggest that logics of extraction and efficiency underpin the turn to AI in organizational settings.

First, we flag power concentration, at the level of companies and countries, as a major emerging concern. Large AI and technology giants are raising hundreds of billions of dollars, transforming local economies and supply chains, and altering the competitive environment and business feasibility of smaller firms. The most powerful AI companies hold dominant sway in the development, implementation, and even governance of AI, with growing political power as well. They hold increasing authority over relevant technical expertise; dedicate massive resources to the expensive infrastructure needed to build large AI tools; and shape everything from narratives to industry standards bodies [25], [26]. We expect these power dynamics to increasingly shape international arms races, prospects for fair competition and entrepreneurship, development trajectories for low income countries, and regulatory relationships between industries and government (e.g., regulatory capture)—issues that scholars have warned about since the early days of AI policy [27], [28], [29].

Second and closely linked, AI-related issues are facing growing politicization [30], [31]. While AI policy in many countries has been strikingly bipartisan, recent moves threaten the likelihood of cooperation. For instance, the refusal of the United States and United Kingdom to join the Paris AI Action Summit agreement, with its focus on sustainability, the rebranding of several "AI safety" institutes to "security" or "innovation" institutes, and regulatory actions promoting innovation or even opposing certain political narratives suggest that actors are increasingly willing to steer AI development and regulation in a risky and partisan fashion [32], [33], [34]. This ethos often manifests in terms of strong pressure for AI adoption, even when safeguards are not in place, or when that adoption goes against recommendations from experts [35]. Healthcare systems, educational institutions, local to national governments, and more are rapidly moving to adopt (especially generative) AI systems, even when evidence suggests that privacy violations, overreliance, bias, and other issues are

present, and that promised efficiency savings are overblown [36], [37]. With ongoing competitive pressures and shareholder incentives in play, various institutions, from small companies to large governments, are experimenting with and adopting AI. These experiments run parallel to research showing the overwhelming majority of pilot projects using AI fail [38], demonstrating a disconnect between what social scientists know about AI implementation versus how it is currently practiced and governed.

Pressures for AI adoption and these dynamics of politicization play out in concrete and concerning ways within individual organizations and for individuals themselves. Concerns about intellectual property, art, and creativity are rampant and justified, with fears of artistic commodification, labor disruption, and even wholesale "enshittification" of institutions like social media and the Internet [39], [40], [41]. With synthetic content like deepfakes increasingly present, practitioners at all levels are asking: what art and cultural productions are worth valuing—at levels sufficient to provide for the maintenance and employment of related communities of practice—and what purportedly "new" academic argumentation is worth trusting [42]?

Likewise, in education and workplace settings, urgent "top-down" efforts to adopt AI and enhance AI literacy are arriving simultaneously with "front-line" concerns about overreliance and shortcut-taking [43], [44], [45], [46]. Students are told they must build AI skills or become irrelevant to the workforce [47]. The supposed urgency of AI integration enters into an ironic resonance with scenarios mentioned at the start of this editorial—in which GPT technologies may be materially composed of stolen intellectual property—raising a massive disruption to the meaningfulness of academic work, both for students and for educators. Omnipresent social messaging about the expected future necessity of AI at work risks contributing to an ongoing social reframing of secondary, tertiary, and humanistic forms of education as more useless than ever, unless they contribute to pragmatic, economistic goals. Educators are struggling to persuade students and themselves to use AI responsibly and debating between multiple unsavory options: either returning to less effective pedagogical and assessment approaches, or instead accepting that the "credentialing" function of education has come unstuck from its "cultivation" function (namely the cultivation of cognitive and administrative skills for complex mental labor).

Thinking these things together—shortcut-taking students, demoralized teachers, arguments to realign curricula towards emergent work skills, and millions of shredded books—we become able to see AI use as a society-wide decision to extract and exploit our own cultural and literary inheritances through the intermediary of software. Agency, creativity, learning, and tacit knowledge are increasingly made to operate through machines; and pathways for individual refusal appear increasingly rare. When such an extractive approach is dominant, the meaningfulness of grades and degrees, as well as everyone's intrinsic motivation to build and share verifiable and original knowledge, may continue to decline. Academic creativity depends on robust social and institutional environments. As with more tangible forms of extraction, degradation of these environments may be invisible in the moment that it occurs, but can add up over time to the intellectual equivalent of a "biodiversity crisis" in research and teaching.

Within these contexts and environments, AI holds ever-more far-reaching implications for work as it increases precarity and thereby seriously threatens the stability and meaningful social status that also arrive via stable employment [48], [49], [50]. Many employers appear eager to adopt AI and displace staff (or reduce future hiring), even when these decisions are not strategically prudent, much less compassionate or sustainable socially [51]. Scholars can hardly agree on which industries or regions will be disrupted, whether individuals will recover or fall behind, and there is little evidence that the social safety net is adapting. Individuals are learning in real time if dependence on AI tools will erode their cognitive skills, which may only be clear when it is too late [45], [52], [53]. Individuals in creative and service industries are left to wonder if their contributions are even worthwhile when AI can produce outputs that seem sufficiently good to many (often employers) at a fraction of the time and cost. Recent trends in society then—rent seeking[1], power concentration, politicization, political corruption, instrumentalism of education, cheating, abjection about the future, precarity, and the making-artificial of many socially central endeavors (news, art, novels, acting, advertising, modeling, and social media conversations)—may create a negative feedback cycle unless humans intervene and center values other than efficiency and extraction.

IV. Overview of the Special Issue

The articles presented in this Special Issue approach the interaction between AI and futures of work both within and outside of formal employment relationships. By doing so, they allow for an expansive view of the many different roles played by forms of AI technology within work-related futures. The central piece of this Special Issue is the collaboratively authored Proceedings from a 2023 workshop on the 21st-century legacy of "father of cybernetics," Norbert Wiener, which focused on the Future of Work theme [A1]. Love et al. [A1] use a unique methodology to bring together a group of over 20 collaborators from diverse disciplinary and professional backgrounds and mobilize those individuals' academic expertise and industrial experience to contemplate AI's emerging consequences for the Future of Work. The collectively generated insights from the workshop are contextualized within and framed by the specific knowledge tradition of Wiener's cybernetic social vision and recognition of the disruptive potential of the emerging automation technologies

[1]In general, rent-seeking means efforts by firms to capture economic or political advantage and entrench a company's dominance without creating net benefits, such as through self-preferential lobbying on intellectual property regulation, control of data and computing infrastructure, and creation of barriers to entry for competitors [54], [55], [56]. In the context of today's intersection between AI and the Future of Work, this manifests in several ways: hundreds of millions of U.S. dollars' worth of new lobbying; decisions by leading AI companies to sell their tools to the government at extraordinarily low prices, which would lead to a future of market control over large groups of users; and the U.S. federal government's effort (currently blocked, but which could still re-emerge) to pre-emptively ban U.S. states from passing their own AI regulation for 10 years [57], [58], [59], [60].

of his own mid-20th-century moment. Following its lead, other papers presented here share a critique of commodification and technosolutionism, but they do not come from the same knowledge tradition. By their diversity in scope and method, they demonstrate that there are many different ways of knowing this topic and of realizing this critique.

Both Love et al.'s central conference report and also Wiens and Kodituwakku's contribution [A5] bring together geographically-diverse voices to consider how to manage technologically-enabled harms already taking place within complex socio-political webs. To some extent these two papers also contribute to planning for how technologies should be implemented and governed, but the latter emphasis is most actively taken up by the other three: Wiese et al. [A3] and McCullough et al. [A4] draw on data from North American contexts to explore what skills future professionals will need to contribute to shaping AI's implementation and governance. Chades et al. [A2] present a collective Australian voice to argue for the increased presence of humanistic and social scientific expertise in AI development, specifically the sharing-together and fusion of traditionally-separate bodies of knowledge.

What is the future of public feminist discourse, and what forms of work are needed to ensure that this future will be robust? The advent of platform capitalism has provoked multiple knowledge traditions, including but not limited to feminism, to reconsider their disciplinary commitments to "truth" in speech and research amidst conditions that now include bot-mediated online defamation campaigns, and artificially generated characters available for online interaction [A5, pp. 2–3], [42]. The current context of online advocacy includes contending with forms of harassment conducted under the flag of "free speech," where "free" is made to mean untethered from responsibilities such as care, honesty, and respect for established facts. They argue that both the language and the technologies of platform-based communication, as well as the economies of platform ownership and sponsorship, have created a situation they term "machine learning misogyny," thereby pointing out a technological "externality" that AI systems appear poised to exacerbate. This paper points out that AI companies can and do harm the work of feminist knowledge production and mutual aid, but that technologies should be reoriented towards enabling an expansive agenda for "consent, care, and coalition." As Wiens and Kodituwakku advance, if we want to steward existing opportunities to preserve and facilitate speech that instead valorize the "well-being of users most at risk of harm" [A5, p. 9], it is important to consider how content moderation can and should be conducted online during the age of AI—not only because content moderation is a form of work, but also because digital lives are a public sphere that significantly affects social integration in ways including but not limited to employment and public opinion. By considering the worldly consequences of AI tools within surveillance capitalism and amidst anti-progressive politics, these authors address questions of power, speculating on practices that could potentially redistribute it.

Surveillance is a concern not only for feminists, but also for unionized apprentices in the skilled trades. Sampling from a labor union for skilled handwork in Texas, McCullough et al. inquire into how union members expect AI to play a role within the future of their work, and how they perceive the possibility of "smart hand tools" in particular. Smart tools collect data through embedded sensors and then create output that informs the user about their use of the tool and how it can be improved. Respondents expressed some curiosity about what they could learn from a smart tool and considered that it would possibly have a role in improving workplace safety. Rather than voicing concerns about smart tools "taking" their particular jobs, which they perceived as safe from automation, respondents commented on the unpredictable afterlives of the data that smart tools could collect, especially for management's ability to monitor and surveil their employees [A4].

Writing from Australia's national science agency, Chades et al. [A2] point out that even though diverse disciplines are actively contributing to the formation of expertise related to responsible AI development, "humanities and social and economic sciences (HSES)" expertise is not commonly included in sufficiently meaningful ways as part of collaborative AI development processes. They present a vision of an alternative possible future in which AI developers and HSES experts co-create "new understandings of problems and issues" [A2, p. 1]. Not doing so risks the credibility and legitimacy of AI-enabled industries, necessarily limits the range of benefits they can offer, and furthermore will delay the arrival of HSES insights until after problems have already emerged. To conclude this commentary, the authors point out changes that research institutions could make to support the formation of such collaborations as they advocate [A2].

But this comment about inter and transdisciplinary research raises the question of what is currently underway in other workplaces without an explicit "knowledge production" mandate. How are new professions in AI ethics and governance taking shape today? What skills do employers request in job postings in relation to AI ethics and governance? Wiese et al. bring employer perspectives and practices into view, using a computational analysis of the written content of millions of job postings from 2018 to 2023, and ultimately arguing that the "missing skills" are often socio-ethical and governance-related [A3]. Their argument illuminates how two sets of AI work skills are already being requested in the labor marketplace. Through a literature review and analysis of recent policy initiatives, these authors point out that desired skills and competencies go beyond the expected domains of "computer science, software engineering, and data science," and instead relate to establishing and maintaining AI systems in organizations in ways that will allow for good outcomes [A3, p. 2]. The authors find that Computer and Information Research Scientists are the most likely job category to include AI ethics skills as a sub-requirement, and Financial Specialists are the most likely job category to include AI governance skills as a sub-requirement [A3, p. 8]. But the authors caution that the presence of named skills in job postings has uncertain ability to illuminate the "deeper normative challenges" of practicing one's expertise within one of these emerging roles [A3, p. 10].

V. Facing the Future (of Work and Beyond Work)

Authors' contributions to this Special Issue help articulate and characterize how AI technologies are fundamentally altering the landscape of our present-day social, political, and economic systems. Implications extend to multiple domains, including how we envision legitimate and effective approaches to interdisciplinarity within the tech design space [A2]; what relationships we want to see between hiring practices, educational programs, regulatory systems, and individual agency within the AI ethics and governance topic areas [A3]; and the kinds of risks that online technologies manifest for coordinated, anonymous attacks against specific ideas and people [A5].

Human decisions about bringing new technologies into practice are adding unpredictability to work, especially through decisions made amidst hype and hope, at higher levels of organizational strategy, and then later revised [51]. Even for those whose employment remains in place, the 2020s are bringing immaterial forms of automation to work, rather than physical robotics, thereby diversifying the kinds of mental and emotional demands workplaces make upon the human workers who must engage with the arrival of this wave of AI [A1]. As we collectively argued within the 21CW2023 "Proceedings" section on "Qualitative and Quantitative Losses," emerging interactions between recent technological advances and the future of work also lead us to question our reliance on quantitative metrics of assessment [A1, p. 6]. Instead, they urge us to instead recenter more qualitative measures of value and success.

Together, these papers argue for increased emphasis on *context*. AI is not just one thing: its many faces may include a sensor-equipped hand tool for skilled work [A4]; an ambiguous but promising toolset that employers would like to see used but lack the employees to put into practice [A3]; a bot-equipped content moderation system that is deployed to suppress or co-opt feminist advocacy [A5]; and a threat of managerial surveillance over the number of hours that a hand tool was used at work [A4]. We remember that beyond its technical specificities, AI is also embedded into narratives in wider cultural spheres, never completely determined by the intentions and representations of its corporate developers. By comparing the category of AI to the concept of "energy," we are reminded that while using the "AI" term in conversation, companies and organizations are implying, but not directly naming, the substantial inheritances of work and knowledge that have been built into the tools and technology, thereby occasionally disappearing them from sight and perception. As we empirically study how technologies shape work futures, we must not forget this work and the knowledge that software extracts, repackages, and privatizes.

Likewise, research, thinking, and planning about "human-centered AI" must not excessively isolate the single imagined "user" as the ultimate horizon of the proliferating influences, qualities, and relationships made different by automation. These papers demonstrate that the frame of reference for studying the social "context" of AI must not be reduced to "one human + one tool." Instead, we are reminded that workplaces themselves are sites of sociality, both having their own social life and embeddedness in wider patterns of social interaction and resource circulation.

Not only the availability of "work" and work futures, but also their qualitative texture [A1], casts a direct influence over whether the younger generation feels hope for the future, and whether local and global economies have a viable and sustainable economic and development trajectory. In each arena of potential AI deployment, there are multiple sites of possible benefit and potential harm. While advocating for this broadening of perspective to emphasize the site-specific nature of technological processes, we are also engaging with Wiener's course of thinking about responsibility beyond the mere scene of the automation itself.

Already in the 1940s, Wiener knew that technological and industrial change could hold the possibility of destabilizing entire traditions of professional practice, possibly without providing other durable modes of subsistence and prosperity in their place. As the early sections of the "Proceedings" piece outline, Wiener viewed mid-20th-century technological developments, particularly in the field of automation, through the lens of urgency and imminent crisis [A1]. He advanced these ideas in a variety of venues beyond his published work. In a 1948 lecture on "Cybernetics" that he delivered in March 1948 to the Institute of Radio Engineers (a forerunner to the IEEE) in New York, for example, he characterizes automation as "catastrophic," and casts its threats as on par with those posed by nuclear weaponry: "we are facing problems from this new industrial revolution of the robot quite as serious as those we are facing from the atom bomb" [61, p. 10]. This equation of danger across industrial and military contexts enables us to read some of Wiener's more pointed statements about nuclear weapons as equally applicable to the Future of Work domain. The opening lines of a one-page 1948 manuscript titled "World Politics in the Atomic Age," for example, invite us to consider how the *quantitative* increases in capacity that have emerged in both the automated factory (higher production capabilities) and the world of atomic bombs (higher destruction capabilities) in fact constitute *qualitative* transformations: "It has been said," Wiener writes, "that since the atom bomb is only another weapon, and since the effect o[f] weapons on world politics is well-known, the atomic bomb is no great innovation, and will have merely a quantitative and not a qualitative effect. However, *great quantitative changes amount to qualitative changes*" (emphasis added) [62]. This formulation, we posit, constitutes a second theme that links the papers in this Special Issue.

As a third emergent theme from this issue, the collected papers remind us that prediction mechanisms (the technical heart of many of the software types brought together under the rubric of "AI") are not themselves "responsible" or "ethical"—contrary to what may be implied from many emergent discourses on "responsible AI." Responsibility cannot be assumed or guaranteed as a property of technology, because the future implications of software-in-use remain underdetermined at the moment of its manufacture. Therefore, many human decisions to deliberately assign and attribute responsibility in the context of emerging technologies still lie ahead of us. It is inspiring to see possibilities for the "symbiotic agency" of workers with their tools [A4, p. 9], but as noted above, the economic, moral, and social scope of vision must be wider in scale, to accommodate how novel benefits at one scale can tie to novel harms at another. We are now living

with platforms, bots, deepfakes, and automated dashboards, and it is uncertain how work and life futures will adapt to their presence. We hope that what people expect from each other, their governments, and employers will be sufficiently thoughtful—and that the power to communicate and enforce these expectations will be sufficiently distributed—that human-to-human interaction will remain respected and supported as a core generator of creative futures.

Lastly, these papers highlight the ongoing risk of extraction and appropriation through technology. AI enters terrains of work and private life that are already unequal, and as such, is always potentially able to exacerbate inequalities. Threats of technological extraction persist, even when technological change is framed through labels that make use of "pretty words" such as diversity and inclusion [63], [64]. Even the most noble goals for workplace transformation can be captured and rendered in problematic ways, due to the unexpected liveliness of software in contexts of use: When considered in context, transparency may play out as information asymmetry between different workplace groups. Freedom of speech might play out as targeted suppression of ideas. Participation in design research might play out as knowledge extraction for intangible forms of automation. These ideals must be carefully articulated, conceptually broadened, and seen from a plurality of disciplinary perspectives, rather than simply claimed and assumed. Ideals such as transparency, participation, and responsibility must be brought back into the context of the situations they are meant to describe. From whose perspective are these ideals articulated, and who stands to benefit from their achievement? How could these ideals be articulated from a more radically inclusive perspective, so that AI technologies could be prevented from entrenching existing harms, and instead put to work smoothing these trenches over?

The inclusion of multiple academic disciplines, each of which carries its own traditional strategies for relating to aspirational futures, is absolutely important for maintaining an adequate lens upon the dynamics of extraction, ownership, value, and responsibility surrounding AI in the workplace. The ideas, approaches, and perspectives on display in the papers gathered together for this Special Issue encompass a wide range of disciplines. We hope that by presenting this work in the "side by side" format of a single issue, readers will be inspired to read beyond the fields with which they are most familiar. Although difficult, such conceptual broadening is needed for adequate planning for work and life futures.

This willingness to engage in a type of disciplinary "agility," after all, is a core premise of the overall cybernetics enterprise. The Macy Conferences convened researchers from across technical and social scientific disciplines as well as humanistic fields; and Wiener especially promoted the notion that these disparate disciplines were working towards a common purpose in their exploration of communication. Indeed, cybernetics proposes an "essential similarity of pattern in certain mathematical processes and certain nervous-mental processes" [65, p. 2]. Within his broader oeuvre, Wiener expands this mathematical/biological analogy to also include more sociological, anthropological, and cultural contexts. We see this Special Issue as a continuation of that project, and we hope that readers will embrace the opportunity offered here to explore how unfamiliar disciplines frame and articulate the most pressing concerns related to the Future of Work.

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APPENDIX: RELATED ARTICLES

[A1] H. A. Love et al., "The future of work in the age of automation: Proceedings of a workshop on Norbert Wiener's 21st century legacy," *IEEE Trans. Technol. Soc.*, early access, Dec. 1, 2024, doi: 10.1109/TTS.2024.3476041.

[A2] I. Chades et al., "Four compelling reasons to urgently integrate AI development with humanities, social and economics sciences," *IEEE Trans. Technol. Soc.*, early access, Apr. 10, 2025, doi: 10.1109/TTS.2025.3556879.

[A3] L. Wiese, S. S. Rathinam, M. Oschinski, B. DeWitt, and D. S. Schiff, "AI ethics and governance in the job market: Trends, skills, and sectoral demand," *IEEE Trans. Technol. Soc.*, early access, May 20, 2025, doi: 10.1109/TTS.2025.3567143.

[A4] *AI is Not Gonna Take Our Jobs: Union Members Perspectives on AI and the Future of Work*.

[A5] B. I. Wiens and A. Kodituwakku, "The future of digital feminism: Surviving surveillance, misinformation, and machine learning misogyny," *IEEE Trans. Technol. Soc.*, early access, Oct. 7, 2025, doi: 10.1109/TTS.2025.3615509.

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