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# BOOK REVIEW: INHUMAN POWER: ARTIFICIAL INTELLIGENCE AND THE FUTURE OF CAPITALISM

Nick Dyer-Witheford, Atle Mikkola Kjøsen, and James Steinhoff

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*Inhuman Power: Artificial Intelligence and the Future of Capitalism* by Nick Dyer-Witheford, Atle Mikkola Kjøsen, and James Steinhoff is part of the Digital Barricades series that addresses concerns in the nexus of digital media, geopolitics, and political economy. In this wider context, *Inhuman Capital* assesses the relationship of AI and capitalism with a twofold purpose. On an empirical level, the book surveys the current state of AI research and development while, on a theoretical level, it explores in depth the utility of Marxist thought toward an analysis of a capitalist project beyond and without human involvement. Despite their unambiguous ideological leanings, the authors' deliberate situating of the work among literature in the discourse, the attention to underlying political economies, and a detailed overview of AI technologies - and this can be said at the outset of the review - are certain to broaden the prospective readership of *Inhuman Power* beyond academic circles.

The book features five chapters, including an introduction, three substantive chapters, and a conclusion. The "Introduction: AI Capital" locates the project and outlines its main influences, key concepts, and some empirical cases. "Chapter I: Means of Cognition" posits the book's central idea, namely that AI is on its way to being integrated into economic infrastructure, a fixed component of capital, not unlike railroads in the 19th and information technologies in the 20th century. "Chapter 2: Automating the Social Factory" charts a wide range of industrial automation applications, reviews various domain specific studies and, importantly, traces automation beyond the workplace. "Chapter 3: Perfect Machines, Inhuman Labor" considers seriously the prospect of Artificial General Intelligence (AGI) and Artificial Super Intelligence (ASI) against the background of a human surplus species. Finally, the "Conclusion: Communist AI" closes with a coda on the viability

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of extracting transhumanist tenets and reappropriating capitalist machinery toward a revolutionary political project.

In the introductory chapter, Dyer-Witheford, Kjøsen, and Steinhoff take issue with the ways that AI (and more generally automation technology) is discussed among technologists, economists, and crucially leftist commentators. In the authors' view, several recent critiques of automation applications "minimize" the revolutionary potential of AI, emphasizing instead the many remaining humans in the loop of ostensible AI technologies. Here, the authors specifically cite Astra Taylor's "The Automation Charade" (2018), though similar interventions come to mind, for example, Mary Gray and Siddharth Suri's *Ghostwork* (2016) or Lilly Irani's "The Hidden Faces of Automation" (2016). These works focus, in one way or another, on the human labor of cleaning data, monitoring computational processes, and maintaining systems commonly understood as automation in an industry that exerts high pressure on workers and wages. While the authors agree that "automation has an ideological function" that is routinely "weaponized to intimidate workers" (4-5), they nonetheless assert that the minimizing position understates the technical capabilities and socioeconomic implications of AI. Conversely, Dyer-Witheford, Kjøsen, and Steinhoff also identify a tendency to "maximize" the affordances of automation and AI, as is the case in so-called left accelerationist contributions to recent progressive discourse. Whether Nick Srnicek and Alex Williams's *Inventing the Future* (2016), Paul Mason's *Postcapitalism* (2017), or Aaron Bastani's *Fully Automated Luxury Communism* (2019), the maximizing positions optimistically promote the detachment of modern technology from (and its reappropriation beyond) capitalism (7). Rather than merely compromising between these two stances, the authors instead propose an abyssal view to reflect on the inherently unknowable trajectory of AI invoked by the book's title: "AI's near and far future capacities and deployments can, and should, instil political vertigo" (8). Part of this endeavor - and this too is suggested in the title of *Inhuman Power* - is to also crack open the uncanny world of right accelerationist thought, perhaps most prominently formulated in Nick Land's controversial "The Teleological Identity of Capitalism and Artificial Intelligence" (2014).

Against the background of both minimizing and maximizing positions, the first chapter develops a perspective whereby AI should be increasingly considered as becoming part of what Marx termed "the general means of production" or, in the words of the authors, "the means of cognition." In this view, "If AI becomes the new electricity, it will be applied not only as an intensified form of workplace automation, but also as a basis for a deep and extensive infrastructural reorganization of the capitalist economy as such" (31). In terms of conceptual contribution, the framework of AI as infrastructure is cogent, as it allows for some important adjustments in the critical analysis of, for example, online microwork, gig-economy freelancing, and overall engagement with the products of major tech platforms. "While AI development does, for the moment, depend largely on the mining and processing of data drawn from a networked multitude," the authors

suggest, "the aim of such development is to attain a whole new level of automation giving capital unprecedented independence from labour" (32). AI capitalism, then, requires not only the intensified outsourcing, crowdsourcing, taskification, and gamification of production and consumption, but also invariably tracks these activities to train machine learning (ML) systems. Given the requirement for evermore training data, the AI industry is firmly in the hands of a few machine intelligence oligopolists (32-42).

The notion of infrastructural AI (or in the Marxian vocabulary the general means of production) engages with optimistic characterizations of terms like "democratization" and "open source," ideas frequently misunderstood in mainstream receptions of media and information technologies and, by extension, the maximizing positions that too closely follow the premises and promises of technologists. Indeed, the appeals of AI technologies to distributed networks and open access are instrumental to the interests of a select few dominant providers: "'Open source' is a buzzword for the business press and major IT corporations have shifted from seeing the open-source community as dangerously subversive to viewing it as a source of robust no-cost programming, a potential recruitment ground, and a strategic site for attracting users to their platforms" (54). The framework of AI capitalism therefore enables a critique whereby, for instance, Microsoft's acquisition of the GitHub code repository is not so much a continuation of the firm's former relentless licensing practices, but rather a recognition that long-term growth will require control over the means of cognition. In addition, the emphasis on the general conditions of production highlights weaknesses in the autonomist notion of the social factory, a conceptualization that (over)emphasizes the political possibilities for workers in post-industrial and post-Fordist societies, as the following chapter elaborates.

The second chapter grounds its discussion in a critique of the autonomist ideas of class composition and the social factory, categories that apply Marxist methodologies beyond their conventional contexts, so as to analyze "the organization of the working class to fight for improvements in wages, hours and conditions" and to consider "how capital could be fought not just on the industrial shop-floor, but in schools, households, shops and warehouses around the entire circuit of capital" (70-71). Rather than an increase in worker power, however, the transition from Fordism to post-Fordism saw the deployment of automation in factories and offices, the shifting of production sites into global markets, and the development of high-risk financialization. What is more, the heirs of these 'fixes', "the digital industries [were] the beacon of hope" after the 2008 economic recession (73-74). In the last decade, big tech's substantial investments have generated a vast AI industry that, notwithstanding a continued reliance on globalized and low-wage crowdsourcing brokerages like Amazon Mechanical Turk, posits ubiquitous automation as a teleology. Thus, "All parts of ML's segmented workforce confront a horizon where the very product they create may automate their labor, so that data scientists and data cleaners may both be working themselves out of a job" (79). AI

capitalism is not at all antithetical to gigification, taskification, gamification, and algorithmic management of work, but is in fact predicated on reorganizing the workforce in the entire social factory. To bring this home, the authors refer to Bernard Stiegler's concept of grammatization, "the process through which the flows and continuities which weave our existence are discretized" (97). Stiegler's approach implicates that ML technologies "calculate correlations [...] to automatically anticipate individual and collective behavior, which they also provoke and 'auto-realize'" (98). In other words, discussions about automation, AI, and the Future of Work, the authors seem to suggest, should include accounts of the shifting meanings of work and the potential forms of struggle in these spaces.

The third chapter departs from so-called narrow AI applications that make up the vast majority of the industry and delves into the largely fictional realm of AGI and ASI. The authors correctly note that the meaning of AI has taken a sharp turn toward narrow, predictive, and commercial applications in comparison to earlier projects, such as the 1956 Dartmouth workshop, the 1983 Soar cognitive architecture, and the 1984 Cyc project (111-112). Even today, AGI projects constitute only a small share of the AI industry, with 45 initiatives worldwide. Most prominent among these are "Alphabet-Google's DeepMind, the Elon Musk-backed Open AI, and the Human Brain project, while other notable projects include Vicarious FPC, the Microsoft acquisition Maluuba, Open Cog, Uber AI, and Nnaisense" (113). Conceptually, this chapter establishes AGI as a more applicable category than "human-level machine intelligence" (HLMI), whose essentialist baggage forecloses a deeper exploration of consciousness, cognition, and imagination toward an analysis of an inhuman political economy. In support of their argument, the authors leverage recent contributions in animal studies and advance ML systems against Marx's humanist assumptions. In particular, the example of DeepMind's AlphaGo project, which beat world champion Lee Sedol in 2016 is striking in its challenge of creativity as a distinctly human feature (120-121). Indeed, in the last year DeepMind's AlphaStar performed successfully in the Real-Time Strategy game StarCraft II, which unlike chess and Go presents players with imperfect information. Against the background of these trajectories, the authors suggest that, if it came to pass, AGI might indeed render humanity "as outdated hardware unsuitable for running the inverted world of capital" (144).

To conclude, Dyer-Witheford, Kjøsen, and Steinhoff offer a few remarks on the so-called reconfiguration debate, which reflects on the possibilities of repurposing existing technology and infrastructure toward a communist orientation to AI. This enterprise is at once difficult and necessary, "For [...] only capitalism built into itself a systematic imperative to recruit labor, replace it with machines, accelerate markets, and animate commodities so that their rendezvous with purchasers becomes increasingly self-propelled and auto-guided" (149). Consequently, a blend of UBI style politics and *Fourth Industrial Revolution* (Schwab 2016) inspired eco planning would be insufficient modes in the current crisis. Rather, more promising currents seem derive from more radical ecosocialist,

de-growth, and deceleration movements. Here, it could be argued that the connections of AI capitalism to environmental and ecological concerns - the smart city whose sensors and IoT technologies both produce and monitor energy expenditure (152) comes to mind - remain relatively cursory throughout the book. Another, admittedly minor, criticism has to do with the authors' bid to infuse their discussion with science fiction material, a strategy that might have particularly paid off in the chapter on AGI. However, the use of fiction is limited to a few illustrations and therefore remains on the level of representation. Thus, the most innovative contribution of *Inhuman Power* is its creative application of Marx's thought to AI capitalism and, conversely, the exploration of Marxism itself against the background of infrastructural AI.