The Political Economy of Communication
9(2), 90–93

https://www.polecom.org

Surplus Intelligence?

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Review Essay: Benedetta Brevini (2022) *Is AI Good for the Planet?* London: Pluto Press (209 pages).

Nick Dyer-Witheford, Alte Mikkola Kjøsen and James Steinhoff (2019) *Inhuman Power: Artificial Intelligence and the Future of Capitalism*. London: Polity (128 pages).

After Eric Hobsbawm's short 20th century 1914–1991, the lineaments of global capitalism took shape—transnational corporations with multiple supply chains and subcontracted workforces, world-spanning financial institutions, instruments and flows alongside supranational and international neoliberal policy regimes. These developments initially depended on information-communication infrastructures arising from inter-networked computing and the early internet. They built upon the 19th and 20th-century advancements of telegraph/telephony, mass media and transport technologies. Similarly, the early internet presaged and enabled the subsequent growth of social media platforms, multifunctional smartphones and other portable devices. Extraordinary volumes of text, image, video, audio and assorted data could be created and communicated in real-time. These are partial manifestations of a larger and deeper manifold—artificial intelligence. At the time of writing, the AI acronym and its surrounding nomenclature—algorithms, machine learning, robotics, humanoids, post-human—pervades corporate culture, mass media, websites, journalism, academic disciplines, branches of literature and artistic expression. How, then, should AI be defined? What are its component features?

Benedetta Brevini's answer to the first question is straightforward. AI concerns "the ability of machines to mimic and perform human cognitive functions" such as "reasoning, learning, problem solving, decision-making" and, perhaps, "creativity" (35). On the second question, Brevini depicts AI as a triangulation of data, algorithms and computing power. Advances in each area further increase machine learning capacity. Computers respond to, and act upon, already-installed data rather than human programming. Algorithmic pattern recognition, within neural networks, becomes ever more sophisticated.

AI's widening applicability and deepening intellectual power requires a differentiated conceptual definition of the term. Accordingly, Dyer-Witheford, Kjøsen and Steinhoff propose the following categorisation. Narrow AI [1] generally refers to algorithmic processing and its various applications—civilian and military drones, self-driving cars, labour pool management and individuated online advertising. This equates with Brevini's understanding of the same term (36).

Her cited examples include facial recognition software, translation services and programmed medical equipment.

Within narrow AI, Dyer-Witheford et al. distinguish between symbolic AI—arising from computer-based expert systems research—machine learning—involving statistical pattern recognition mostly run on neural networks—and situated and embodied dynamical (SED) frameworks—which construct robots with perception, cognition and mobility. Beyond narrow AI, artificial general intelligence (AGI) represents a horizon of research and design whereby autonomous automated systems think across different knowledge domains and professional environments. In short, "AGI could possess intelligence equally general to that of a human being without mimicking human cognition" (Dyer-Witheford et al., 2019: 112). Consideration of this prospect depends upon prior understandings of the AI-capitalism interface. Big Tech is the obvious starting point. Alphabet/Google, Meta/Facebook, Microsoft, Apple, Alibaba and Tencent perceive AI as a dynamic neural medium for transmuting online content and user attention into financial profit. Their acquisition of AI start-ups worldwide futureproof the process. Once the latest expertise becomes intellectual property, competition reduces further. For Brevini, the net result is data capitalism, a formulation that aligns with Shoshana Zuboff's surveillance capitalism and Nick Srnicek's platform capitalism.

Clearly, AI development facilitates data extraction, collection and analysis. Social media platforms transact with corporates, advertisers, market research and others to monetise the data generated. Google, the initial and paradigm case, employs AI algorithms to suck in a massive array of microdata about online activity, consumer behaviour and everyday life routines. For many, there is little escape from the phenomenological creep of keyboards, screens, smartphones, wearable devices, smart cities, household sensors and the Internet of Things. Thus, consumers and citizens effectively sustain a feedback loop of data generation, commercial targeting and algorithmic surveillance. In this regard, Google's pioneering strategy became the general business model for big tech and other major enterprises. As Brevini remarks "telecom companies, cable companies and virtually every commercial sector—from retail to banking, from insurance to tourism, from hospitality and health to education—rush to make use of AI-powered services, in the hope of maximising revenue." In sum, "data capitalism became the new standard for doing business" (46).

For Dyer-Witheford et al., AI is more than an instrumentality for capitalists and commercially driven institutions. It is also a ubiquitous infrastructure like electricity, which constitutes and reproduces the general conditions of production, circulation and exchange. AI coordinates workplace automation, supply chain/transport logistics, crowd work exploitation, financial trading, cued consumerism, government administration and military-industrial complexes. From these developments, Dyer-Witheford et al. posit a fundamental transformation. AI infrastructures are replacing human cognition and perception such that "capital, instead of the humans within it, may think and perceive" (67). If the great replacement succeeds, AGI will have incorporated and repurposed the myriad applications of narrow AI. To the extent that this scenario occurs, intelligent machines and machinic labour will drive productivity and the valorisation of capital. Human autonomy will be surplus to requirements as AI capitalism unfolds.

The critical force of *Inhuman Power: Artificial Intelligence and the Future of Capitalism* rests upon the double relation between Marxian political economy and AI. The former cuts through the hype and opacity of the latter to reveal the technological infrastructures of capital. Conversely, the accomplishments of narrow AI and the prospective direction of AGI expose the anthropomorphic limits of Marxian political economy. Human labour is not necessarily central to surplus value

extraction and capital accumulation. In the meantime, opportunities for collective resistance centre around digital commons initiatives and the socio-ecological principles of decelerated living.

Inhuman Power: Artificial Intelligence and the Future of Capitalism constructs a visage of orchestrative power, and resistance, which is compelling and comprehensive. Yet, there is, I think, another dimension to AI capitalism. My reflections here are influenced by the constant mediation of disordered nature—flooded cities and farms, forest fires, sandstorms, droughts, heatwaves, icecap depletion, dying reefs and forced human migration. These exteriors of massive multi-generational carbon emissions set the stage for Brevini's central question—is AI good for the planet? The negative ledger is certainly long. The computational power needed to process data and train algorithms increases energy consumption. Cloud and server farms continually demand electricity and water for cooling systems. AI-enabled consumerism activates a doom loop of ecological depletion—unnecessary products, product obsolescence and waste. Concurrently, the growing and addictive usage of social media platforms draws ever more energy as the collection of data to promote future consumption generates further data which is stored in electricity-draining clouds and servers. Most of the energy sources involved contribute to carbon emissions and global warming. From a 2019 International Energy Agency report, Brevini reveals that 64% of the global electricity mix comes from fossil fuels (70). Yet, the ecological culpability of Big Tech and AI capitalism generally is far greater than this figure suggests. Brevini provides a telling case study here which is worth recounting:

> In 2018, Google started an oil and gas division department with the aim of attracting the fossil fuel industry. The company promised that its machine-learning tools combined with its cloud service could help these companies use their data more efficiently, and therefore extract oil and gas from existing reserves faster and more powerfully (88).

The synergies of AI, data generation, fossil fuel extraction and global warming act upon life itself, including human life. How can this predicament be theorised? The research of Brevini, Graham Murdock, Richard Maxwell, Toby Miller, Sy Taffel, Amanda Gould and others presents a media-materiality perspective which interconnects deep-time geology, carbon extraction, digital minerals/metals with information-communication infrastructures, datafication and capitalism. With this schema in mind, I return to our initial formulation. We inhabit an AI-driven global capitalism, the ecological and biospheric predations of which are creating a volatile, uncontrollable earth system for humanity. Without collective resistance arising from a climate justice movement, human intellect and praxis will waste away.

Endnotes

[1] Brevini's use of this term cites Martinez et al. (2019, January), *Artificial intelligence: Short history, present developments and future outlook: Final report*. MIT, Lincoln Laboratory. https://www.ll.mit.edu/sites/default/files/publication/doc/2021-03/Artificial%20Intelligence%20Short%20History%2C%20Present%20Developments%2C%20and%20Future%20Outlook%20-%20Final%20Report%20-%202021-03-16_0.pdf

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