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Introduction: Special Issue *Artificial intelligence through the lenses of Marxism and critical thinking*

Introducción: Dossier Temático *La inteligencia artificial desde la perspectiva del marxismo y el pensamiento crítico*

Introdução: Dossiê Temático *Inteligência artificial sob as lentes do marxismo e do pensamento crítico*

James Steinhoff

University College Dublin

Jonas Valente

Oxford Internet Institute

Rodrigo Moreno Marques

Universidade Federal de Minas Gerais

Editors of the special issue

Marx's analysis of capitalism gives central place to machines. Machines are one of capital's primary means of increasing the productivity of exploited labour in order to extract as much surplus value as possible and thus serve as "weapons against working-class revolt" by degrading, devaluing and controlling labour (Marx 1990, 563). Marx held that continual competition between individual capitals compels those firms towards the introduction of machinery and replacement of human labour, tending over time, towards an increasing "organic composition of capital" (Marx 1990, 762). While the dynamics of the organic composition of capital are more complex than can be adequately portrayed here, they do not imply a linear transfer of work from human to machine, as the introduction of machines has been shown to often generate a need for new categories of labour (Gray and Suri 2019). That being said, Marx held that there is a fundamental identity between capital and machines. He clearly calls machines the "material foundation of the capitalist mode of production" as well as "capital's material mode of existence" and (Marx 1990, 554). Thus, for Marxist analysis machines and capital may be understood as the antithesis of the human being. Machines are "dead labour" (Marx 1990, 342) while capital is an "alien power" (Marx 1990, 716). It seems that Marx found the new steam-powered automatic machines of his time especially troubling, if one is to judge from his poetic language on the topic. He describes dead labour "in the automaton and the machinery moved by it" as stepping forth and "acting apparently in independence of [living] labour, it subordinates labour instead of being subordinate to it, it is the iron man confronting the man of flesh and blood" (Marx 1994, p. 30).

Yet it would be inaccurate to say that this pessimistic appraisal is the sole Marxist perspective on technology. According to Marx's dialectical thought, machines can assume a positive role insofar as their evolution is a component of the revolutionizing of the productive forces and the socialization of labour. The most extreme reading of this perspective on Marx's work is drawn from the "Fragment on Machines" in the Grundrisse, where Marx appears to speculate on a highly automated future capitalism in which "the means of labour has not only taken the economic form of fixed capital, but has also been suspended in its immediate form ... and the entire production process appears as not subsumed under the direct skillfulness of the worker, but rather as the technological application of science (Marx 1993, 699). This scenario, Marx contends, expresses precisely the contradiction at the heart of capital. As capital strives to "reduce labour time to a minimum" it simultaneously "posits labour time ... as sole measure and source of wealth" (Marx 1993, 706). By introducing so many machines, capital eventually cuts itself off from exploited labour, the source of surplus value, and thus "works towards its own dissolution as the form dominating production" (Marx 1993, 700). While the precise import of this passage is highly debated (Fuchs 2016; Heinrich, 2013, Marques, 2022) it, in any case, indicates that the analysis of machines from a Marxist perspective is not simple – indeed several more dimensions could be elucidated, including the oft-repeated charge of Marx as technological determinist (Mackenzie 1984).

It is worth noting that, as Marx explains, technology can assume different social forms, not only the specifically capitalist social form which currently prevails. This fundamental understanding led him to point out that workers should avoid revolting against machines. The real enemy to be fought, he explains, is the social form of technology which bends it to exploitation. In Marx's words, "It took both time and experience before the workers learnt to distinguish between machinery and its employment by capital, and therefore to transfer their attacks from the material instruments of production to the form of society which utilizes those instruments" (1990, 554). Contrary to charges of determinism, Marx explicitly advocates for class struggle against the subsumption of labour under the capitalist social form of technology.

This special issue of Eptic is focused specifically on the technology of artificial intelligence (AI). For all his technological acuity, Marx could not have foreseen the rise of the contemporary

approach to AI called machine learning (ML). And while there is a long tradition of Marxist research on technology, there is, of yet, relatively little on AI specifically. Marxist research on AI goes back to the 1980s, and the first era of the AI industry. Machine learning had not achieved demonstrable success yet and instead the industry based its hopes on “expert systems” or programs in which the captured knowledge of experts could be implemented and made available on demand (Myers 1986). From this early era, three broad threads of Marxist research on AI were already visible. The first thread saw in AI the extension of previous automation technologies and Taylorist practices of labour deskilling (Cooley 1980; Morris-Suzuki 1984; Berman 1992; Ramtin 1991). The second thread saw AI as perhaps more hype than substance; as an ideological weapon for capital to intimidate workers. As Athanasiou (1985) put it, AI was best understood as “cleverly disguised politics”. The third thread focused instead on the potential of the advanced data processing capacities of AI for the implementation of socialist economic planning (Cockshott 1988).

We can see these same themes in more recent Marxist research on AI – as well as new ones. The first thread remains a prominent line of thought. Dyer-Witthford et al. (2019) and Steinhoff (2021) offer book-length studies which investigate AI as, primarily, an automation technology with novel capacities for capturing the skills and knowledge of labour. The second thread also retains interest. Authors such as Benanav (2020) and Smith (2020) argue that AI’s capacities for the replacement of labour are overblown, serving mostly to distract from a stagnating capitalist economy. Third, Cockshott (2017) continues to pursue the use of AI from socialist planning. Somewhat related is research which advocates the use of AI to produce a “postwork” socialist society (Srnicek and Williams 2015; Bastani 2019).

Beyond these three threads, there is a relatively small but growing diversity of Marxist research on AI (several collections now exist: Moore and Woodcock 2021; Fehrlé, Lieber and Ramirez 2024). The contributions collected here fall within the three threads but also without.

We hope the inspiring and thought provoking articles published in this special issue can shed light on the dialectics of artificial intelligence. Enjoy your reading!

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