

This article in the March 2026 issue of *Arena* draws on *Can robots dream of becoming time-poor? what future for labour-times?* forthcoming from Humphrey McQueen with Peter Curtis.

ARTEFACTUAL INTELLIGENCES

Economy of time, to this all economy ultimately reduces itself.
Marx, 1863.¹

'News' is fake when it comes from 'within the context of no context,' as illustrated when ADMASS media blazoned the virgin birth of 'AI' on November 30, 2022, despite the coining of 'Artificial Intelligence' in 1955-6 to siphon Pentagon dollars away from cybernetics, invoked thereafter for information technologies of every kind and degree. The contextual vacuum is filled by a super-saturated solution of bourgeois bullshit, for instance, the academic sub-discipline of 'proto-industrialisation' that never mentions 'proto-capitalism,' as if one could arise without the other.

To attend to capitalism as the over-arching context for robotics and machine-'intelligences,' this article broaches four inter-related matters:

- Marx's conceptualising of socially-necessary labour-times,
- and of relative surplus-value;
- Weber's rational calculation; and
- how technologies allied to state apparatuses have intensified, since the late 1700s, the appropriation of the values we add.

Neither Marx nor Weber is a 'dead dog' when it comes to examining how technologies contribute to accelerating the applications of our labour.

Time is money

Keep your eye on the time-clock
It has its hands on you.

Bruce Roberts, 'Restructuring Blues'.²

All un-written history is indeed the history of class struggle once that struggle is understood to take place every second of every day and night over the control of labour-times, and not treated as a Pantomime in which a proletarian dragon sleeps through the first two acts until provoked into revolutionary roars.

¹ Karl Marx, *Grundrisse* (London: Penguin, 1973), 173.

² Bruce Roberts, *Captive to the Process* (Burnie: Food Preservers Union, 1992), 20.

The core needs of the kind of capital that characterizes capitalism are not new. What is novel are some of the ways of meeting them. Early in the 1600s, centuries after the abacus, John Napier devised log-tables and the slide-rule to assist merchants and money-lenders with charging compound-interest. His creations were applied to manu-facture and machino-facture, one more marker of how commercial capital paved the way for the revolution inside capital that established the capitalist mode from the late 1770s. Meanwhile, the means to measure labour-times gained precision as they went from town-clocks with no minute-hands to the Bundy clock in 1884 until, by April 1913, the *Australian Engineering and Machinery* could extoll mechanical appliances which

consist of a stop-watch and a motion-picture camera. This invention is the most powerful tool ever for the measurement of efficiency, suggesting the whip of taskmasters and owners of earlier times.³

That image misses the difference between chattel-slaves bound to tools and wage-slaves in machino-facture.

Tools are never as neutral as they might seem since chattel-slaves and wage-slaves are forced to use them within relations of power. Agri-businesses in California issued short-handled hoes (*el cortito*) so that foremen on horseback could tell at a glance whether a farm-hand was taking even the briefest of breaks. That spine-twisting implement had less to do with the quality of the hoeing than with the quantity of labour-time applied. Union pressure got it banned in 1976.⁴

The Wall Street Journal parades 'Besozism,' named after Amazon's founder, Jeff Bezos, as an advance on Taylorism and Fordism because of its 'mix of surveillance, measurement, psychological tricks, targets, incentives, sloganeering ... and an ever-growing array of clever and often proprietary technologies.'⁵ Sensors track every move of the 1.46 million wage-slaves, whom Amazon calls 'associates,' down to the milli-second to determine the floating average 'rate' at each workplace, helping to lift the pick-rate per wage-slave from 100 to 300 items per hour. Devices report in real time the comparative in-pu-t of every wage-slave across every 'hellscape' around the planet. Saving a milli-second is nothing. To do so 1,200 times during a 10-hour shift piles up on the bottom line as twenty minutes 'off-the-clock.' What the Bezosmoth insists on as 'the rate' confirms Marx's account of the intensifying of exploitation to extract more relative surplus-value: 'everything that shortens the necessary labour-time required for the reproduction of labour-power, extends the domain of surplus labour.'⁶

Time-theft is the Janus-face of wage-theft. When Amazon halved the staff in one section but demanded as much output as before, who had legal title of the time saved by the installation of a new device? The answer depends on whether its

³ Airlie R. Belliveau, "Psychology's first forays into film," *Monitor on Psychology*, 43, no. 3 (2012), 24-6

⁴ Ronald B. Taylor, *Chavez and the Farm Workers* (Boston: Beacon Press, 1975).

⁵ *Wall Street Journal* (WSJ), September 11-12, 2021, B4.

⁶ Karl Marx, *Capital*, I (London: Penguin, 1976), 470.

'associates' were being paid wage-rates or at piece-rates. If the former, the labour-time belonged to the Bezosmoth, which had bought a given number of hours. If on piece-rates, the 'associates' might expect to earn the same amount in a shorter period, or a larger income from producing more units in the old hours. Either way, Amazon and its ilk will trim the price they offer for each piece. Wage-slaves are resisting such encroachments by going slow, which the agents of capital counter by stepping-up surveillance.

Socially necessary: Another distinguishing feature of the capitalist mode is the need of each particular capital to match, if not to beat, the market-price of the commodities that their rivals seek in each orbit of sales. To that end, the agents of capital reorganise workplaces to tighten control over the application of our labour in order to reduce the labour-time that is *socially-necessary* to produce each unit. That qualifier extends beyond workplaces to the political, socio-cultural and conceptual strengths of the contending classes.

Despite the compulsion on firms to equal the prevailing universal labour-times, the personifications of particular capitals are prepared to invest in machinery, Marx recognises,

only to the extent that it enables workers to work a larger part of their time for capital, to relate a larger part of their time as time which does not belong to them, to work longer for another⁷

By reducing the physical effort from wage-slaves,

machinery becomes in the hands of capital the objective means, systematically employed for squeezing out more labour in a given time. This occurs in two ways: the speed of the machines is increased, Improved construction of the machinery is necessary, partly to allow greater pressure to be put on the worker ...⁸

David E. Noble documents how engineers design machines in ways which help their owners to increase their take of the relative surplus-value that we add beyond the cost of production equipment, raw materials and semi-finished goods, ancillaries and, above all, our labour-power.⁹

Strike-breakers: No sooner does our class take so much as defensive action than our enemies install more and newer machines to limit the effectiveness of strikes or go-slows, leading Marx to conclude that

⁷ Marx, *Grundrisse*, 701.

⁸ Marx, *Capital*, I, 536.

⁹ David E. Noble, *America by Design* (New York: Knopf, 1977), and *Forces of Production A Social History of Industrial Automation* (New York: Knopf, 1984), Part Two.

[i]t would be possible to write a history of the machines invented since 1830 for the sole purpose of providing capital with weapons against working-class revolt.¹⁰

Contemporaries endorsed his assessment as have academics. In 1837, Andrew Ure rejoiced that the invention of the self-acting mule reaffirmed ‘the great doctrine ... that when capital enlists science in her service, the refractory hand of labour will always be taught docility.’¹¹ Editor of the *Economic History Review*, Sir John Habakkuk, reported, 130 years later, that ‘labour militancy was a powerful inducement to devise and to introduce labour-saving machinery in the nineteenth-century.’¹² Amazon uses an interactive heat-map for over 500 worksites across the U.S. of A. to register the risk of unionisation.¹³

I spy

The Numerati. How they'll get my number and yours.

Stephen Baker, 2008.

Surveillance is built into machinery from Madison Avenue to mine-sites.¹⁴ *BusinessWeek* switched from supplying its journalists with hard copies of *The Wall Street Journal* to on-line editions so that managers could track how long their staff spent on which articles, drawing conclusions about productivity, happiness at work, and relations with colleagues.¹⁵

By 2015, Rio’s ‘efficient’ deployment of labour at its Pilbara mines included the ‘SmartCap,’ which, an executive explains, is a monitoring device embedded in a standard baseball cap that equipment- and truck-operators of equipment wear. It monitors their brain activity on an ongoing basis and can alert both driver and the central-control room whenever there is a lapse in brain activity ...to integrate it into our fatigue management approach.¹⁶

¹⁰ Marx, *Capital*, I, 562-4.

¹¹ Andrew Ure, *The Philosophy of Manufacturers* [1835] (London: Frank Cass, 1967), 368.

¹² Sir John Habakkuk, *American and British Technology in the Nineteenth Century The Search for Labour-saving Inventions* (Cambridge: Cambridge University Press, 1962), 50-1 and 142-4.

¹³ *New York Times*, March 21, 2021, 1 and 6.

¹⁴ William I. Robinson, *The Global Police State* (London: Pluto Press, 2020).

¹⁵ Stephen Baker, *The Numerati, How they'll get my number and yours* (London: Jonathan Cape, 2008), 18-9.

¹⁶ Interview with Greg Lilleyman, *Engineering Australia*, 2015, 32-8.

Rio protects its equipment but does not reduce the source of 'fatigue' by granting more and longer rest-breaks, easing its ten-day schedules for fly-in/fly-out workers, or by reducing ten-to-twelve shifts down to eight.

Not our friend

... what presents itself to us under the cloak of bourgeois legality is nothing but the expression of class violence raised to an obligatory norm by the ruling class.

Rosa Luxemburg, 1906.¹⁷

What much of the Left takes to be a conflict between private and public spheres evades the collaboration of corporate and state. The state organises capital and disorganises labour, often as not by organising our class behind the anti-labour party (ALP), the ACTU and the un-Fair Work Commission.

Owners of productive properties dare not depend on devices alone to keep us under control but need repressive state-apparatuses, as Adam Smith records:

The Masters never cease to call aloud for the assistance of the civil magistrate, and the rigorous execution of those laws which have been enacted with so much severity against the combinations of servants, labourers, and journeymen.¹⁸

Although Max Weber recognises that the subordination of 'free' labour draws on ethics and habit, he is not embarrassed to point to the ultimate sanction in the state:

The industrialist takes into account the fact that people exist who are hungry, and that those other people in the spiked helmets will prevent them using physical force simply to take the means where they find them which could serve to allay their hunger ...¹⁹

Bourgeois democracies, such as in Australia since convictism, are covert class dictatorships in contrast to most other polities which almost always have been overt dictatorships, usually military.

The controllers of machines and repression also need ideological support. Smith justifies taxes to school 'the inferior ranks' since the state

¹⁷ Quoted in Paul Frolich, *Rosa Luxemburg* (London: Victor Gollancz, 1940), 86.

¹⁸ Adam Smith, *The Wealth of Nations, I-III* (Harmondsworth: Penguin, 1970), 170.

¹⁹ Max Weber, *Critique of Stammler* (New York: Free Press, 1977), 102; Weber agreed with Trotsky that 'Every state is founded on force,' before adding that 'a state is a human institution which (successfully) claims the *monopoly of the legitimate use of physical force* within a given territory.' "Politics as a Vocation," H.H. Gerth and C. Wright Mills (eds), *From Max Weber, Essays in Sociology* (London: Routledge & Kegan Paul, 1948), 78.

derives no inconsiderable advantage from their instruction. The more they are instructed the less liable they are to the delusions of enthusiasm and superstition, which, among ignorant nations, frequently occasion the most dreadful disorders.²⁰

After the 1867 Reform Act extended the franchise to many working-men, the illiberal Liberal cabinet member Robert Lowe told the Commons that ‘it will be absolutely necessary ... to prevail on our future masters to learn their letters.’

Such compulsion remains two-fisted – politically ‘up the right channels,’ but also in classroom discipline to become another cog in machine-immiserisation. As much as Dr Ure praised Richard Arkwright in 1837 for his perfection of factory regulations, he regretted that

[e]ven at the present day, when the system is perfectly organised, and its labour lightened to the utmost, it is found nearly impossible to convert persons past the age of puberty, whether drawn from rural or from handicraft occupations, into useful factory hands. After struggling for a while to conquer their listless or restless habits, they either renounce the employment spontaneously, or are dismissed by the overlookers for inattention.²¹

To avoid that fate, Marx observes, the worker ‘learns to control himself.’²²

After becoming Amazon CEO, Andy Jassy announced, in June 2025, a strategy to integrate robots and cobots with ‘generative AI for every side of its operations,’ with the aim of saving thirty cents on each item shipped by not hiring 160,000 more ‘associates’ before 2028, with plans to employ 600,000 fewer extra staff by the end of 2034, despite expecting to increase shipments by fifty percent. Over the next six months, Jassy sacked 30,000 from the corporate and technology divisions.²³

From Amazon’s self-promotion as one of the biggest job-creators in the United States, the company is being unmasked as the net job-destroyer it has always been, first to its suppliers, onto competitors at Walmart, and then to their suppliers. Alec MacGillis, in his ironically titled *Fulfilment*, chronicles how the Amazon continues to wreak havoc on cities and towns across the U.S. of A.²⁴ Hubs at Craigieburn, North Melbourne and close to the Western Sydney airport will help it to do the same here, as it is doing to the local book trade.²⁵

Relative surplus-value

²⁰ Adam Smith, *Wealth of Nations*, Books IV-V [1776] (London, Penguin, 1999), 374-5.

²¹ Ure, *op. cit.*, 15-16.

²² Marx, *Capital*, I, 1033.

²³ *WSJ*, October 23, 2025, A1 and 20; October 28, 2025, B1 and 4; cf. February 6-7, 2021, B1 and 71.

²⁴ Alec MacGillis, *Fulfilment Winning and Losing in One-Click America* (Melbourne: Scribe, 2021).

²⁵ Nathan Hollier, “Amazon in Australia, An update on this publishing disrupter,” *Australian Book Review*, November 2025, 31-2.

As the reader will have recognised in dismay, the analysis of the real inner connections of capitalist production is a very intricate thing and a work of great detail; it is one of the tasks of science to reduce the visual and merely apparent movement to the actual inner movement.

Marx, *Capital* III.²⁶

Marx's critical analysis of the political economy of real existing capitalism is no more complicated than are its workings. Its 'driving force and motive power' are to extract ever more surplus-value from our capacities to add value by the labour that we are disciplined to apply in making commodities.

Under the rule of capital, surplus-value takes two interconnected forms, the *absolute* and the *relative*. Machines allow for increases in the former by reducing the effort required from us and so extend the hours we can put in day-after-day. Many times more significant for the rise to dominance of the capitalist mode, and to its on-going expansion, is how machines contribute to *relative* surplus-value by intensifying the application of our capacities during however many hours of labour-time we sell to their owners. Intensification also comes from intangibles such as workplace co-operation, divisions-of-labour, and cost-accounting.

Before electronic data processors, the wages-bill to calculate common-costs outweighed any benefit. Until the late 1940s, the Ford Motor Company got by on 'lump' accounting, that is, by dividing aggregated expenditure by the number of autos produced during the year to arrive at the production costs of each vehicle. Henry Ford II hired Robert J. McNamara to adapt methods developed at the Office of Statistical Control for assessing the bombing of Nazi Germany to delve into the common costs at each step in the production of each component. Rational calculation is enforced in workplaces and at points of sale to counter the disequilibria that run through the expansion of capital.

Weber's '*Geist*'

... this will be a paradox only to those who have an over-simple view of Weber's thought, owing to the combined effect of the rarity of translations, the one-sidedness of the early French and American interpretations, and the perfunctory anathemas pronounced by 'Marxist' orthodoxy.

Pierre Bourdieu, 1980.²⁷

Erasing the inverted commas around 'Spirit' ('*Geist*') from first translation (1930) of Max Weber's *The Protestant Ethic and the 'Spirit' of Capitalism* encouraged the mode's

²⁶ Karl Marx, *Capital*, III (London: Penguin, 1981), 428.

²⁷ Pierre Bourdieu, *The Logic of Practice* (Cambridge: Polity Press, 1999), 16.

apologists to hope that its author was another ‘dealer in magic and spells’ and not a this-worldly social theorist. Reductionism floats heavenwards when Idealists detach thinking from being and plunges into the netherworld when materialists boil human activity down to a sludge of the palpable. Marx scorned the vacuity of the former and the flatness of the latter. Mediating between ideas and social relations, he unearthed the ‘secret history’ of the Roman republic in ‘its landed property.’²⁸ Is there a different ‘secret of our own social product?’, a ‘social hieroglyphic’?²⁹ Did, perchance, a spirit hover over its cradle before the spectre of communism arose to threaten its survival?

Weber had no doubt that a secret existed, proving ever more pervasive once the habit of rational calculation threaded a Protestant work-ethic through the needle of profit-taking. Capital arises neither from theology nor double-entry book-keeping but finds its wellspring in mastery over ‘freed’ labour:

... all these peculiarities of Western capitalism ultimately derive their present significance in the last analysis from their connection with the capitalist labor organisation ... Exact calculation – the foundation for everything else – is only possible on the basis of free labour.³⁰

When Weber writes of ‘[t]he rational capitalistic organisation of (formally) free labour,’ his brackets capture how this freedom means that labour has been freed from owning the means of production, so that its embodiments had been set free to be compelled to sell timed units of labour-power - or to steal, beg or starve. Furthermore, the brackets visualize his metaphor of an ‘iron cage,’ underlining that this ‘doubly freed’ labour is subject to the discipline of the time-piece, the pocket-book and the police.

Weber extended his association of force with ‘free’ labour in his 1907 criticism of Rudolph Stammler’s ‘Surmounting of the materialist conception of history’ by inviting his readers to

[c]onsider the parts of a machine. They function according to ‘humanly instituted rules.’ Draught horses or slaves harnessed together – or, finally, the ‘free’ wage-labourers in a factory – function according to ‘humanly instituted rules’ in precisely the same ‘logical’ sense. In the last case, it is calculated ‘*psychological pressure*,’ properly applied, which harnesses the worker to total mechanism. This ‘pressure’ is occasioned by the ‘idea’ of the empty pocketbook and the hungry family, and so on which would follow the disruption of the regular ‘order of work’ and its consequence, the closing of the factory. Perhaps it is also occasioned by all sorts of other ideas – ethical ideas, for example. Finally, it may be a consequence of mere ‘habit.’³¹

²⁸ Marx, *Capital*, I, 176, n. 35.

²⁹ Marx, *Capital*, I, 167.

³⁰ Max Weber, *The Protestant Ethic and the ‘Spirit’ of Capitalism, and Other Writings* (London: Penguin, 2000), 15-17.

³¹ Weber, *Critique of Stammler*, 100-1.

Weber endorses Marx's non-Lutheran doctrine that, like faith without works, capital is dead until it disciplines 'free' labour:

As every employer knows, the lack of '*conscienziosita*' of the labourers of such countries, for instance Italy as compared with Germany, has been, and to a certain extent still is, one of the *principal* obstacles to their capitalistic development. Capitalism cannot make use of the labour of those who practice the doctrine of undisciplined '*liberum arbitrium*' ...

The agents of capital must destroy the 'spirit' of independence in their wage-slaves so that we perform each task as if it were, Weber continues, 'an absolute end in itself, a calling. But such an attitude is by no means a product of nature.'³²

Weber is the last to suggest that a 'calling' is a predestined gift of grace for he knew that it 'can only be the product of a long and arduous process of education.' Workers have to be trained to internalize clock-time before their employers can count

on the posting of a paper printed in a certain way ('work regulations') producing a specific result with greater or lesser certainty ... Just as the hunter calculates that his dog will react in a certain way to his whistle and after a shot will perform in a certain way, ...

Should the impress of habit and indoctrination with the work-ethic fail, 'the worker who cannot or will not adapt himself to them will be thrown into the streets without a job.'³³

Capitalism is scored by the disciplining of 'free' labour into what Weber calls a 'shell as hard as steel,' a carapace which limits the free-will of capitalist and wage-slave, albeit in contrary ways. Marx points to how any fall in the rate of return on investment is 'wholly independent of the will of the capitalist,' just as Weber accepts that the disequilibria of accumulation on expanding scales over-rides its personifications:

The belief in 'freedom of his will' is of precious little value to the manufacturer in the competitive struggle, or to the broker on the stock exchange. He has the choice between economic destruction and the pursuit of very specific maxims of economic conduct.³⁴

Marx colours that contrast by picturing the personification of capital caught in 'a Faustian conflict between the passion for accumulation, and the desire for enjoyment.'³⁵

For these gifts

³² Weber, 'Introduction,' [1920], *The Protestant Ethic ...*, 362.

³³ Weber, *Critique of Stammler*, 102.

³⁴ Max Weber, *Roscher and Knies: The Logical Problems of Historical Economics* (New York: Free Press, 1975), 193.

³⁵ Marx, *Capital*, I, 741.

Thus every Part was full of Vice,
 Yet the whole Mass a Paradise;
 Mandeville, *Fable of the Bees*.³⁶

John Stuart Mill's questioning of whether 'all the mechanical inventions yet made have lightened the day's toil of any human being' provoked Marx's riposte that mopping sweat from a labourer's brow has never been

the aim of the application of machinery under capitalism. Like every other instrument for increasing the productivity of labour, machinery is intended to cheapen commodities and, by shortening the part of the working day in which the worker works for himself, to lengthen the other part, the part he gives to the capitalist for nothing.

To portray machines as the bringers of civilisation strikes Marx as 'twaddle,' since their effects are decided by the interests of whichever class controls them.³⁷

Professor Joel Mokyr entertains few of the doubts that Mill held about machines' being good for workers: 'The steam engine,' Mokyr croons, 'had the power to relieve wage-slaves from the drudgery of hard, repetitive physical labour ...'³⁸ Can he be unaware that, although steam had the mechanical power to lessen drudgery, only our collective struggles have gone any distance towards combatting capital's deployment of technologies to cripple our lives? Left to their own devices, the agents of capital seize on any reduction in the physical effort needed during reproduction processes to prolong our working-day while intensifying the application of our capacities. Lessening the physical effort required from operatives cast more women and children into the maw. Girls were put in charge of more than one worsted power-loom. A Factory Inspector reported in 1866 that '[t]he boy is a mere substitute for steam power.'³⁹

Nor does Mokyr appear to grasp that the application of water- or steam-power lifted rates of exploitation to make, in his words, 'the people who introduced it more prosperous.' Indeed, as Marx puts it, 'there is no doubt that machinery has greatly increased the number of distinguished idlers,' those 'glutinous drones' indulged by Parson Malthus to absorb the commodities for which there could be no

³⁶ Bernard Mandeville, *The Fable of the Bees* (Harmondsworth: Penguin, 1970), 67.

³⁷ Marx, *Capital*, I, 492, cf. 575, n. 48.

³⁸ Joel Mokyr, *The Enlightened Economy Britain and the Industrial Revolution 1700-1850* (London: Penguin, 2011), 125.

³⁹ Quoted Marx, *Capital*, I, 517-26, 614, n. 24.

effectual demand from the wage-slaves whose labours had supplied them.⁴⁰ Ever the cheery optimist, Mokyr concludes that '[c]onsumers, facing lower prices and eventually better goods and services, may have secured the greatest benefits.' Here, our Mr Cheeryble neglects to distinguish necessities for workers from superfluties among our exploiters. We get by on wages: they pile up wealth. The result is an increase in their comparative worth more than our absolute impoverishment. In 2025, 3,000 billionaires held a collective wealth of \$18.3 trillion, up by 81 percent since 2020 Australia harbours some 160-170 billionaires, twice as many as in 2015, who were never the One Percent; today, they are one in every 170,000, each making off with an average of seven dollars per second.

Self-monopolising capitals

If it were necessary to give the briefest possible definition of imperialism we should have to say that imperialism is the monopoly stage of capitalism.

Lenin, 1916.⁴¹

From around 1900, qualitative changes in the centralisation of money-capital, the concentration of production-capital and conglomerations of labour burst the bonds of 'free trade,' propelling the reproduction and exchange into the stage of self-monopolising competition; 'self' distinguishes this stage from Mercantilism with Crown Charters for exclusive trading privileges. Neither Bukharin nor Lenin related the change to universal labour-times, a failure repeated when Baran and Sweezy ignored not only the labour-process in their *Monopoly Capital* (1966) but also the self-valorisation process, as Harry Braveman would the latter.⁴² Following in their wake, proponents of 'Globalisation,' 'Neo-Liberalism' and 'financialisation' could do no more than describe effects from recent phases in the self-monopolising stage, just as 'techno-feudalism,' 'data-serfs' and 'Cloud fascism' have as much in common with its present phase as 'beetroot, music and lawyer's fees' have with each other.⁴³

Weber published *The Protestant Ethic* during a resurgence in anti-materialist mechanistic thinking, typified by the Vitalism of Henri Bergson's *Creative Evolution* (1907),⁴⁴ partly a reaction against what D. H. Lawrence detested as 'the same purpose stinking in it all, the mechanizing, the perfect mechanizing of human life,' beyond

⁴⁰ Marx, *Capital*, I, 543; Karl Marx, "The Poverty of Philosophy," *M-ECW*, vol. 6 (London: Lawrence & Wishart, 1976), 207-10.

⁴¹ V.I. Lenin, *Imperialism, the Highest Stage of Capitalism, A Popular Outline* (Peking: Foreign Languages Press, 1975), 105, cf. 106.

⁴² Paul M. Sweezy, "Foreword," Harry Braveman, *Labor and Monopoly Capital* (New York: Monthly Review Press, 1974), ix.

⁴³ Karl Marx, *Capital*, III (London: Penguin, 1981), 953.

⁴⁴ R.C. Grogin, *The Bergsonian Controversy in France 1900-14* (Calgary: The University of Calgary Press, 1988).

production and trade.⁴⁵ The theme of the 1911 Deutsche *Werkbund* Congress was 'The Spiritualisation of German Production.'⁴⁶

Weber toured the United States in 1904 at the high-point of Taylorism, whose founder esteemed his development of an automatic lathe in 1905 as a greater contribution to efficiency than time-and-motion study because that mechanical innovation took more control out of the hands of skilled-operatives, cut the cost of their labour and increased the production time they could apply without interruption, as highlighted by Daniel Nelson.⁴⁷

In 1895, Weber had conveyed the overwork and un-Germanic culture of Polish farm-labourers in Eastern Germany by referring to them as *Robotgartner*, a term derived from the Old Russian, '*rabota*,' meaning 'slave, and in Modern Russian 'to work.'⁴⁸ In 1920, Czech playwrights, Josef and Karel Capek, gave 'robot' currency from their *R.U.R.*, which stood for Rossum's Universal Robots.

As Weber recognises, 'the optimum profitability of the individual worker is calculated like that of any material means of production' results in the thing-a-fication of our capacities. Wage-slaves are treated as if interchangeable machine-parts. Smith's championing of workshop divisions-of-labour as the Turnpike to economic progress did not blind him to its dehumanizing consequences.⁴⁹ Marx's dual meaning of alienation to alienate (sell) our capacities so that we become estranged from our products, both degraded by being standardized. 'To be a productive worker,' Marx warns, 'is therefore not a piece of luck, but a misfortune.'⁵⁰

During the First Great Slaughter, standardisation went beyond interchangeable parts for weapons onto IQ Tests for recruits and the treatment of their wounds.⁵¹ The stricter calculation of labour-times and the standardisation of products associated with mass production undermined consumer sovereignty by homogenising the range of products on offer. Ford's promise of a T-model in any colour 'as long as it is black,' took a different hue with the establishment of the British Colour Council in 1930 'to determine and coordinate colour for the colour-

⁴⁵ D. H. Lawrence, *Twilight in Italy* (Harmondsworth: Penguin, 1960), 175.

⁴⁶ Joan Campbell, *The German Werkbund: The Politics of Reform in the Applied Arts* (Princeton: Princeton University Press, 1978), 57-69, 83, 161 and 177.

⁴⁷ Daniel Nelson, *Managers and Workers* (Madison: University of Wisconsin Press, 1975) and *Frederik W. Taylor and the Rise of Scientific Management* (Madison: University of Wisconsin Press, 1980).

⁴⁸ Max Weber, "Developmental tendencies in the situation of East Elbian rural labourers," *Economy and Society*, 8, no. 2 (1979), 177-205.

⁴⁹ Smith, *The Wealth of Nations*, Books IV-V, 368-9.

⁵⁰ Marx, *Capital*, I, 644.

⁵¹ Perrin Selcer, "Standardizing Wounds: Alexis Carrel and the Scientific Management of Life in the First World War," *The British Journal for the History of Science*, 41, No. 1 (2008), 73-107.

makers and colour-users in the textile and allied trades.’⁵² By setting three or four colours for each season, those businesses reduced waste from unsold garments in bi-annual fashions. Clothing-workers were tossed between the Active and the ‘floating’ battalion in the Reserve Armies of Labour. The organic composition of capital in the Rag Trade weighed towards production goods and bouts of poorly-paid labour, rather than investments in the fixed-constant component, much like almost every undertaking before the 1830s.

Today, knowledge is standardised in the ‘Summaries’ churned out by rival Chatter-Boxers, against Wikipedia’s invitation to explore the riches that its volunteers offer. Standardised tests for primary-school are child-abuse. Generative AI in Medical Research is celebrated for collating test-results at a speed where the exceptions that test the rules are lost beneath summaries.

Envoi

No doubt about it. What the personifications of particular capitals want is for us to work 3600/24/7 for no pay. We can do neither and still reproduce our capacities for them to exploit. The class struggle turns, therefore, not on what they want, but what they need, indeed, on what they cannot do without if they are to remain parasites. In practice, the question becomes: with what can they get away? The answer is that our wages and conditions are decided by the comparative strengths of the contending classes at workplaces, in state apparatuses and throughout society.

One strand in our strength depends on how – and how well - we conceptualise the stages in the capitalist mode. The keener our comprehension of its structured dynamics, the more effective will be our efforts to overturn its rule. Those tasks need to be undertaken in keeping with Marx’s motto: *De omnibus dubitandum*, and in the spirit of the final sentence in Engels’ *The Dialectics of Nature*: (‘All this has to be thoroughly revised.’)⁵³

⁵² British Colour Council, *Dictionary of Colour Standards* (London: British Colour Council, 1934).

⁵³ Frederick Engels, “The Dialectics of Nature,” *Marx-Engels Collected Works*, vol. 25 (New York: International Publishers, 1987), 587.