CHAPTER 15: MACHINERY AND MODERN INDUSTRY

"John Stuart Mill says in his 'Principles of Political Economy': 'It is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being.' That is, however, by no means the aim of the capitalist application of machinery. Like every other increase in the productiveness of labour, machinery is intended to cheapen commodities, and, by shortening that portion of the working day, in which the labourer works for himself, to lengthen the other portion that he gives, without an equivalent, to the capitalist. In short, it is a means for producing surplus-value." (229)

Progressive aspect of machinery OR human not taken up

Manufacture ⟶ revolution in mode of prod^n begins w. labour-power

Modern industry ⟶ revolution in mode of prod^n begins w. INSTRUMENTS of LABOUR

"An organised system of machines, to which motion is communicated by the transmitting mechanism from a central automaton, is the most developed form of production by machinery. Here we have, in the place of the isolated machine, a mechanical monster whose body fills whole factories, and whose demon power, at first veiled under the slow and measured motions of his giant limbs, at length breaks out into the fast and furious whirl of his countless working organs." (235)

Motion

WATER-WHEEL ⟶ RURAL

WATT'S STEAM ENGINE ⟶ power (by combustion of coal and water) under human control

Locational mobility

little affected by local circumstances ⟵ MOBILE and manual locomotion

URBAN

MANUFACTURE

Organisation of social labour-process SUBJECTIVE

MODERN INDUSTRY

Productive organism OBJECTIVE

→ "the labourer becomes a mere appendage to an already existing material and technical production"

Co-operation + division of labour + steam + water → Cost capital
PRODUCTIVE FORCES NATURAL FORCES NOTHING

Machinery – as CONSTANT CAPITAL – creates no new value but nonetheless loaded with value

"It is evident that wherever it costs as much labour to produce a machine as is saved by the employment of that machine, there is nothing but a transposition of labour..." (241)

"As long as the labour spent on a machine, and consequently the portion of its value added to the product, remains smaller than the value added by the workman to the product with his tool, there is always a difference of labour saved in favour of the machine." (241)

"The Yankees have invented a stone-breaking machine. The English do not make use of it, because the 'wretch' who does the work gets paid for such a small portion of his labour, that machinery would increase the cost of production to the capitalist. In England women are still occasionally used instead of horses for hauling canal boats, because the labour required to produce horses and machines is an accurately known quantity, while that required to maintain the women of the surplus-population is below all calculation. Hence nowhere do we find a more shameless squandering of human labour-power for the most despicable purposes than in England, the land of machinery." (244)

when labour-power is so cheap...

"machinery, while augmenting the human material that forms the principal object of capital's exploiting power, at the same time raises the degree of exploitation." (245)

from one in a family of four to two all four labour — women and children go to machinery

one hand, costs more, on the other hand, SURPLUS-LABOUR of four created

"In spite of legislation, the number of boys old in Great Britain by their parents to act as live chimney-sweeping machines (although there exist plenty of machines to replace them) exceeds 2,000." (246)

Prolongation of the working day

→ "If machinery be the most powerful means for increasing the productiveness of labour — i.e. for shortening the working-time required in the production of a commodity, it becomes in the hands of capital the most powerful means, in those industries first invaded by it, for lengthening the working-day beyond all bounds set by human nature." (247)

Machinery → natural wear and tear — from use — from the elements

→ moral depreciation

same machines being produced cheaper

better machines enter competition

"The application of machinery to the production of surplus-value implies a contradiction which is immanent in it, since of the two factors of the surplus-value created by a given amount of capital, one, the rate of surplus-value, cannot be increased, except by the fall of the other, the number of workmen. This contradiction comes to light, as soon as by the general employment of machinery in a given industry, the value of the machine-produced commodity

regulates the value of all commodities of the same sort; and it is this contradiction, that in its turn, drives the capitalist, without his being conscious of the fact, to excessive lengthening of the working-day, in order that he may compensate the decrease in the relative number of labourers exploited, by an increase not only of the relative, but of the absolute surplus-labour." (250)

Excessive lengthening of the working-day → from labour-power comes profit ← Surplus working population

"The economic paradox, that the most powerful instrument for shortening labour-time, becomes the most unfailing means for placing every moment of the labourer's time and that of his family, at the disposal of the capitalist for the purpose of expanding the value of his capital." (250)

INTENSIFICATION of labour → a phenomenon once the normal working-day is fixed in law

Capital compensates by exhausting the labourer

"In the factory we have a lifeless mechanism independent of the workman, who becomes its mere living appendage. [...] At the same time that factory work exhausts the nervous system to the uttermost, it does away with the many-sided play of the muscles, and confiscates every atom of freedom, both in bodily and intellectual activity. The lightening of the labour, even, becomes a sort of torture, since the machine does not free the labourer from work, but deprives the work of all interest. Every kind of capitalist production in so far as it is not only a labour-process, but also a process of creating surplus-value, has this in common, that it is not the workman that employs the instruments of labour, but the instruments of labour that employ the workman. But it is only in the factory

system that this inversion for the first time acquires technical and palpable reality. By means of its conversion into an automaton, the instrument of labour confronts the labourer, during the labour process, in the shape of capital, of dead labour, that dominates, and pumps dry, living labour power." (261)

"Economy of the social means of production, matured and forced as in a hothouse by the factory system, is turned, in the hands of capital, into systematic robbery of what is necessary for the life of the workman while he is at work, robbery of space, light, air, and of protection to his person against the dangerous and unhealthy accompaniments of the production process, not to mention the robbery of appliances for the comfort of the workman. Is Fourier wrong when he calls factories 'tempered jails'?" (262-268)

"The instrument of labour, when it takes the form of a machine, immediately becomes a competitor of the workman himself." (266)

"The English cotton machinery produced an acute effect in India. The Governor General reported 1834-35: 'The misery hardly finds a parallel in the history of commerce. The bones of the cotton-weavers are bleaching the plains of India.'" (265)

"The instrument of labour strikes down the labourer." (265)

"But machinery not only acts as a competitor who gets the better of the workman, and is constantly on the point of making him superfluous. It is also a power inimical to him, and as such capital proclaims it from the roof tops and as such makes use of it. It is the most powerful weapon for repressing strikes, those periodical revolts of the working-class against the autocracy of capital." (267)

Bourgeois political economists → THEORY of COMPENSATION

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Those displaced by machinery sets free equivalent amount of capital to employ equivalent amount of labourers

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Actual reality: labourers thrown out and onto labour-market – worth so little as to find trade, but if can find work, it is at an inferior kind

"As to raw material, there is not the least doubt that the rapid stretch of cotton spinning, not only pushed on with tropical luxuriance the growth of cotton in the United States, and with it the African slave trade, but also made the breeding of slaves the chief business of the border slave-states. When, in 1790, the first census of slaves was taken in the United States, their number was 697,000; in 1861 it had nearly reached four millions." (270)

POPULATION MANIPULATION

"Ireland, having during the last twenty years reduced its population by nearly one half, is at this moment undergoing the process of still further reducing the number of its inhabitants, so as exactly to suit the requirements of its landlords and of the English woollen manufacturers." (271)

Immediate result of MACHINERY → to augment SURPLUS-VALUE + MASS of products (in which surplus-value embodied)

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↑ wealth ↓ relatively no. of working class people to produce this

↓

↑ new and luxurious wants + means of satisfying such wants

↑ produces LUXURIES

Globalisation

New and varied products → also resulted in new relations with the WORLD - created by MODERN INDUSTRY

↑ demand for labour in the carrying trades

Canals, docks, tunnels, bridges

New branches of production - from either machinery or general industrial changes

↑ productiveness of modern industry → extensive/intensive exploitation of labour-power

⇒ UNPRODUCTIVE EMPLOYMENT of more and more WC people

Reproduction of the ancient domestic slaves - SERVANT CLASS

'modern domestic slaves'

Again, its progressive aspect not taken up...

"What a splendid result of the capitalist exploitation of machinery!" (273)

After its introduction and development, MACHINERY in long run ↑ no. of slaves of labour

→ "the factory system based on machinery grinds down more workpeople than on its first introduction it throws on the streets." (273)

MODERN INDUSTRY ⇒ EMIGRATION & COLONISATION of foreign lands

New international division of labour

"The enormous power, inherent in the factory system, is expanding by jumps, and the dependence of that system on the markets of the world, necessarily begets feverish production, followed by over-filling of the markets, whereupon contraction of the markets brings on crippling of production. The life of modern industry becomes a series of periods of moderate activity, prosperity, over-production, crisis and stagnation." (274-275)

Periodic crises

"The exploitation of cheap and immature labour-power is carried out in a more shameless manner in modern Manufacture than in the factory proper." (278)

→ Women and children

"One of the most shameful, the most dirty, and the worst paid kinds of labour, and one on which women and young girls are by preference employed, is the sorting of rags. It is well known that Great Britain, apart from its own immense store of rags, is the emporium for the rag trade of the whole world." (279)

→ rag-sorters = Medium for the transfer of SMALL-POX and other infectious diseases (and the first victims)

Relationship between capitalism, health, contradictory

"The cheapening of labour-power, by sheer abuse of the labour of women and children, by sheer robbery of every normal condition requisite for working and living, and by the sheer brutality of overwork and night-work, meets at last with natural obstacles that cannot be overstepped." (282)

→ introduction of MACHINERY – Capital cannot abolish LIMITS

markets were constantly being extended, and continue daily to be extended..." (282)

ENGLAND → "has long ago reproduced, and even overdone, all the horrors of the factory system, without participating in any of the elements of social progress it contains." (285)

Robert Owen → with every child at a given age
Combine productive labour
and gymnastics
→ ↑ productiveness and fully developed human beings

Contrast

DIVISION OF LABOUR IN MORE MONSTROUS SHAPE

"in the factory proper, by converting the workman into a living appendage of the ~~machinery~~ machine, and everywhere outside the factory, partly by the sporadic use of machinery and machine workers, partly by re-establishing the division of labour on a fresh basis by the general introduction of the labour of women and children, and of cheap unskilled labour." (290)

Contradictory effects of Modern Industry

Industrial reserve army
- kept in misery;
Incessant human sacrifices,
squandering of labour-power;
"the devastation caused by a social anarchy which turns every economic progress in a social calamity." (292)

Through its catastrophes, imposes variation of work, fitness of labourer for varied work, greatest possible development of varied aptitudes

RIGHTS

"So long as factory legislation is confined to regulating the labour in factories, manufactories, etc., it is regarded as a mere interference with the exploiting rights of capital." (293)

"The fact that the collective working group being composed of individuals of both sexes and all ages, must necessarily, under suitable conditions, become a source of human development, although in its spontaneously developed, brutal, capitalistic form, where the labourer exists for the process of production, and not the process of production for the labourer, that fact is a pestiferous source of corruption and slavery." (294)

"By maturing the material conditions, and the combination on a social scale of the processes of production, it matures the contradictions and antagonisms of the capitalist form of production, and thereby produces, along with the elements for the formation of a new society, the forces for exploding the old one." (296)

Most revolutionary element of modern industry within the SPHERE OF AGRICULTURE

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Urbanisation and disturbance of circulation of matter being human and soil

↓

↓ health of urban labourer and ↓ intellectual life of rural labourer

↓

Power of resistance of urban labourer ↑
Power of resistance of rural labourer ↓ - Interesting

↓

"In modern agriculture, as in the urban industries, the increased productiveness and quantity of the labour set in motion are bought at the cost of laying waste and consuming by disease labour-power itself. Moreover, all progress in capitalistic agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil; all progress is increasing the fertility of the soil for a given time, is a progress towards ruining the lasting sources of that fertility. [...] Capitalist production, therefore, develops technology, and the

'internal WORLD-HISTORICITY

combining together the various processes into a social whole, only by sapping the original sources of all wealth - the soil and the labourer." (298)

(Short-term gain or long-term catastrophe