

MARXISM AND ENVIRONMENTAL SCIENCE

THE EXTRACTIVE INDUSTRIES AND THE ANALYSIS OF SOCIAL REPRODUCTION

1. Introduction

The debate on Production Departments, in the history of Marxism, has primarily focused on the question as to whether sectors like the military sector and the sector where money is manufactured, should be differentiated as separate Production Departments, alongside the two large Departments that were differentiated by Marx, i.e. the Department for production of the Means of Production (**MP**), and the Department for production of the Means of Consumption (**MC**) (1). In this essay I propose to re-discuss an aspect of Marx's thinking which has been much less frequently re-discussed, but which is of much significance towards the construction of a Marxist theory on the environment, namely the question of sub-divisions under the main Departments. In his chapter on simple reproduction of *Capital II*, Marx drew an important distinction between two subdivisions of Department II (**MC**), i.e. the subdivision of sectors where daily necessities are manufactured, and the subdivision where articles of luxury are made (2). This differentiation, as it turned out, was helpful towards analysing the flow processes of commodities and money within the capitalist system, and also helped to highlight differences between a situation of simple reproduction, where the social capital produces the same quantity of commodity values over successive periods of time, and a situation of expanded reproduction, where enlargement of production takes place. Unfortunately, Marx's followers, to my knowledge, have never taken Marx's thought process forward to see whether parallel distinctions may also be drawn between subdivisions or sub-compartments of Department I. In the below essay I will argue that a distinction between sub-divisions of Department I is essential, if we are to correctly understand capitalism's relationship with nature, which is a rapacious relationship.

2. Sub-Departments under II: Direct and Indirect *Refluxes* of Capital

Let's to start recall the way Marx analysed Department II, the Department for production of **MC**. Whereas all commodities manufactured by enterprises based in this Department are considered end-products, meaning that they are brought to the market for sale to society's individual consumers and individual households, - Marx drew a basic line of differentiation between two sub-categories of consumer goods, namely *daily necessities* such as food and clothing on the one hand, - and *luxury items*, such as alcoholic drinks and jewelry on the other. This differentiation is necessary, because the class character of the buyers of these two types of commodities is distinct. Daily necessities are required both by members of the working class and by members of the capitalist class. However, whereas workers spend the main portion of their wages on buying necessities, members of the capitalist class reserve only a minor portion of their income for buying this type of consumer goods. A major portion of their income is spent on articles of luxury, - consumer items which workers can hardly access. And since capitalists and workers do obtain separate value parts of the social product, i.e. variable

capital and surplus capital respectively, the differentiation between sub-divisions of Department II is helpful towards analysing the flow process of the value parts v and s in the social product C' of Department II.

Marx focuses in particular on the flow of the money which the entrepreneurs of the two sub-departments of Department II pay to their workers as wages. He makes a distinction between II (a) and II (b). For him, II (a) refers to the subdivision of II where daily necessities are manufactured, and II (b) refers to the subdivision where luxury items are produced. Whereas in the case of II (a), the value part v out of C' flows back directly to the capital owners who have paid their workers their wages, in the case of II (b) the value part v flows back to the capital owners of this subdivision via a *detour*. Let's take these cases one by one. As for the subdivision II (a), - this subdivision as stated manufactures daily necessities, precisely the type of commodities which the workers need for their own survival. Here, the workers' labour power is employed to process raw materials, such as grain and cotton, which manufacturing results in consumable items, bread and clothes, that help to sustain the workers' labouring strength. And since the workers are in need of precisely this type of commodities, they purchase commodities which they themselves have produced, from the very entrepreneurs who have paid them their wage. Thus, the money which flows to the workers of II (a) as payment for the expenditure of their labouring strength flows directly back to the owners of II (a).

Not so in the case of sub-department II (b), where luxury items are produced. Here the owners similarly pay their workers wages towards their subsistence, they pay them the value part v out of the value of the commodities C' of II (b). Like their brethren and sisters who are employed in the parallel subdivision II (a), the workers of II (b) use their income to buy daily necessities, which are not brought onto the market by the owners of II (b), but by the owners of II (a). Hence, in this case, v flows from one subdivision of II towards the second subdivision of II. The owners of the companies of II (a) now are in possession of the variable capital which the workers of II (b) had spent on buying their commodities. According to Marx, these owners will use the money which they have obtained through their sales in order to buy luxury items from the owners of II (b). They will do so to the extent of the value of II (b) v , to the extent of the wages which the workers had spent on their commodities, the daily necessities. In the case of subdivision II (b), then, the money paid to the workers too flows back to the owners of the same subdivision, but in this case the reflux occurs not immediately, i.e. directly from their own workers, but instead via a *detour*, i.e. indirectly (3).

It is to be noted that Marx's above-restated analysis is concentrated entirely on the internal flow processes of commodity capital and money capital within the capitalist system. This analysis is insightful, since it brings out that money capital in some cases re-reaches the capital owners quite immediately, whereas in other cases several transformations, exchange processes have to occur, before the money capital returns to its original owners. Such is the meaning of the distinction which Marx draws between direct and indirect *refluxes*. Yet no matter how insightful, profound, Marx's thought process be, it nevertheless needs to be kept in mind that the given analysis only throws light on aspects of the *internal* flow process of commodity capital and money capital, - in this particular case within one and the same Production Department of the capitalist system. In contrast, Marx devoted only little attention to the differential relationship with nature,

capitalism's natural surroundings, which capitalist entrepreneurs maintain. And in order to bring out those differentiations, we need to focus not on the sub-divisions of Department II, for production of the Means of Consumption (MC), but instead on *Department I*, the Department for production of the Means of Production (MP). Below, I will therefore turn to the analysis of Department I.

3. Sub-Departments under I: Direct and Indirect Flows from Nature

Although the question of subdivisions under Department I is not commonly posed, it in my view is essential if we are to reconstruct and extend Marxian economic theory, so as to fully incorporate the environmental consequences of the capitalist system. Marx was, of course, aware of the fact that the outcome of production in Department I (MP) covers a wide variety of means, such as raw materials at the one end and machinery at the other end of the scale. In order to clarify how exactly value is created and transferred, he for instance differentiated between *raw materials* and *auxiliary means*, the first category of means of production being physically incorporated into the new commodities, whereas the second category is not. He also differentiated between means of production which are part of *fixed* capital, and means of production which are a part of *circulating* capital (4). In case of the first category, which includes equipments and machinery, the use-value of MP remains fixed in the commodity capital through a series of turnovers of capital. In case of the second category, which includes raw materials and auxiliary means, i.e. fuel elements, - the use-value of the commodities MP is transferred to the new commodity during each and every turn-over of capital.

Now, whereas these differentiations no doubt serve a definite analytical function, they do not suffice to highlight a fundamental cleavage which exists between two subdivisions within Department I, being the subdivision where all *extractive* industries are located, and the subdivision which covers all *non-extractive*, processing industries. Here, we may speak of I (a) and I (b). Subdivision I (a) includes several distinct sectors, which share common features, while at the same time appearing to contribute very different commodities, namely the sector for the mining of minerals (metal, copper, bauxite, etc.), and the sector for extraction of fossil fuel elements (coal, oil, natural gas). Both sectors consist, of course, in extractive industries; both bring to the market a commodity which is drawn from nature (5). Yet whereas the first-mentioned category, the minerals, are natural substances which are inorganic in character and have never been a part of living nature, - the second category, that of fossil fuels, consists in commodities which are drawn from the earth as inorganic substances, but in a distant past had been a part of the earth's organic, living wealth. According to environmental science, the fossil fuels are the deposits from prehistoric, tropical forestry (6). And whereas minerals are a 'renewable' resource, i.e. they can be re-used after waste-recycling, fossil fuels are distinguished by the fact that they are *non-renewable* resources.

Nevertheless, all extractive industries together constitute one subdivision of Department I (MP), for their relationship with nature is radically different from the relationship which other industries located in Department I maintain with our natural surroundings. It is undeniable, of course, that each and every industry, including all industries of Department I, is dependent on nature, in the sense that the production of material commodities is always dependent on nature's supply of raw materials. Yet in

most cases that relationship is an *indirect* relationship, in as much as most industries procure raw materials which already have obtained a commodity form. Their entrepreneurs buy their raw materials from other companies. Not so in the case of the extractive industries. Here, raw materials do not enter the circuit of the entrepreneur during the first phase of the circuit, when commodities are bought, but, as stated previously, enter during the extractive phase, when they are appropriated by labour from nature, from the earth (7). The distinguishing characteristic of the extractive industries, which all form part of the subdivision (a) of Department I (**MP**), is that they draw *directly* on nature and market a commodity which has not been processed, has not existed previously.

This distinguishing mark is so important, so crucial, that it is fully justified to identify a separate subdivision I (a), when speaking of the extractive industries. Above, when discussing the individual circuit of capital, I have already brought out the distinction between the capital circuit of the mining/extractive industries, and the capital circuit of other industries. Whereas the circuit of the manufacturing industries can generally be depicted via the formula $M - C \dots P \dots C' (-W) - M' (-W)$, - the circuit of the extractive industries should rather be depicted via the formula $M - C \dots P (*N) \dots C' (-W) - M' (-W)$. Here we need to emphasize that the extractive industries constitute the basis for the operation of all other industries, since all modern manufacturing industries require both raw materials snatched from the earth, and fuel elements which since the Industrial Revolution have overwhelmingly been fossil fuel elements, also drawn from the earth (8). In other words, all industries which procure raw materials and fuel elements in commodified form, as **C (MP)**, *indirectly* draw on the wealth of nature, whereas the extractive industries which derive raw materials and fuel elements from nature in a non-commodified form, do so *directly*.

4. Conclusion

Above I have conceptualised the subdivisions of Department I, by drawing a broad parallel with the subdivisions of Department II, which Marx had differentiated when discussing the process of simple reproduction in *Capital II*. Marx, as stated, had brought out that the differentiation between a subdivision of Department II, where daily necessities are produced (Department II (a)), and a subdivision where luxury items are manufactured (Department II (b)), is helpful, for it serves amongst others to clarify the point that some reflexes of money capital within the capitalist system are of a direct kind, whereas other reflexes are indirect. In the case of Department I, there is an equally strong, if not much stronger, reason to differentiate two subdivisions. Here, however, the distinguishing marks do not relate to internal flows within the Department of Production itself, but to the flow of material means, minerals and fossil fuel elements, from our natural surroundings towards the different sectors of the capitalist system. For whereas in case of the processing industries, including the processing industries which are located in Department I (b), i.e. the non-extractive industries manufacturing means of production, these inflows occur *indirectly*, - in the case of the extractive industries, belonging to subdivision (a) of Department I, the inflows take place very *directly*, in the course of capital's circuit itself.

Lastly, the analysis regarding subdivisions of I has a bearing on the analysis of expanded reproduction, i.e. on the analysis of the evolution of the Departments and their subdivisions in course of the historical accumulation process. Marx had pointed out, that the shift from simple to expanded reproduction is accompanied by a shift in allocation of the surplus away from purchases of luxury goods by the capitalists (9). Without elaborating on this point here, it is immediately evident that such a shift impacts on the relationships between sub-department II (b) and other subdivisions of the capitalist system. In a separate essay, we will have to consider, reflect on, the implications of expanded reproduction for the place of the extractive industries within the process of capital's reproduction (10). However, even without discussing other implications, it is evident that the reconstruction of Marx's reproduction scheme, and the positing of the extractive industries as a separate sub-division of I, dramatically changes our view of capitalism. Whereas Marx's scheme gave the appearance of a *closed* capitalist system, of a system purely dependent on internal flows of (commodity and money) capital, - with the differentiation between I (a) and I (b) that semblance entirely disappears.

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References:

(1) for the definition of the sector for production of money as Third Department, see Rosa Luxemburg, *The Accumulation of Capital* (Monthly Review Press, New York, 1964), p.100; for the conceptualisation of the military sector as Third Department, see Ernest Mandel, *Der Spaetkapitalismus. Versuch einer Marxistischen Erklarung* (Suhrkamp Verlag, Frankfurt am Main, Germany, 1974, Chapter Nine), p.255;

(2) Karl Marx, *Capital. A Critique of Political Economy. Volume Two* (Progress Publishers, Moscow, USSR, 1967), p.406-415;

(3) *ibid*, p.407/408;

(4) *ibid*, Chapter VIII, Fixed and Circulating Capital, p.160;

(5) other industries which need to be discussed, except for the metal mining companies and companies mining fossil fuels, are the wood logging industry and fishing companies;

(6) Clive Ponting, *A Green History of the World. The Environment and the Collapse of Great Civilisations* (Penguin Books, London, United Kingdom, 1991), p.282;

(7) for Marx's own brief commentary on the mining sector, see Karl Marx (1967), *op. cit.*, p.199; Marx strikingly states: 'No raw material at all is used there, because the subject of labour, such as copper, is a product of nature, which must first be appropriated by labour.';

(8) for details regarding the intensified use of coal by industries from the time of the Industrial Revolution of the late 18th century onwards, see Clive Ponting (1991), *op.cit.*, Chapter 13, The Second Great Transition, p.267;

(9) Karl Marx (1967), *op.cit.*, p.493.

(10) see my essay on the extractive industries and Marx's scheme on expanded reproduction (forthcoming).

