Development of the Productive Forces: An Ecological Analysis

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Marxism has long been subject to criticism from the theorists of Political Ecology, and in recent years, as the concerns of Green thinkers have become harder to ignore, Marxists have begun to respond to this challenge, defending and sometimes amending Marxist theory in response to Green criticisms. This chapter addresses one issue within this debate: the controversy over Marx’s commitment to the growth, or development, of the productive forces. My aim is to dispute the contention of Marx’s Green critics, that his concept of the development of the productive forces leads inevitably to the exacerbation of ecological problems, and, more speculatively, to suggest some advantages of using this concept to investigate ecological problems.¹

Productive forces, ecology and technology

The productive forces consist of labour power and the means of production that labour power utilizes in order to make its products. Since ecological problems are problems arising out of humans’ dealings with nature, it is the natural components of the means of production that concern us. Ted Benton has argued that Marx neglects these natural components, but it seems to me that they can in fact be readily accommodated within Marx’s account of the production process.² The means of production, according to that account, consist of instruments and objects of labour, and Marx is clear that both of these originate from nature and have a persisting natural component. Objects of labour, or raw materials, are either given directly by nature or are natural objects modified by previous labour processes.³ Instruments of labour include: natural objects such as stones used as tools in primitive labour processes; tools and machines manufactured out of natural materials; and even
the earth itself which serves as an instrument of labour in agriculture. And it is not only things which directly ‘conduct’ the worker’s activity on to its object which Marx recognizes as instruments of labour; he also defines as instruments of labour in a wider sense ‘all the objective conditions necessary for carrying on the labour process’, a category which he intends to cover such things as workshops, canals and roads, but which will also without modification include the natural systems, physical, biological and climatic, upon which production depends.

These natural components of the production process (shown schematically below) indicate two aspects of the process that make it liable to ecological problems:

(a) its dependence on naturally given raw materials, and
(b) its dependence on naturally given instruments of production.

But there is more. Of the materials used in the productive process only a part ends up in the product, and only some of these materials’ properties are understood and exploited by the producers. The production process is therefore also liable to ecological problems in virtue of

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**Figure 12.1** Ecological impact of the labour process

*Note:* Solid arrows represent connections noted explicitly in Marx’s account of the labour process: broken arrows represent connections noted elsewhere.