

MARXISM AND ENVIRONMENTAL THEORY

THE TWIN CONCEPTS OF NEGATIVE USE- AND NEGATIVE EXCHANGE-VALUE

1. Introduction

This essay focuses on the thematic of negative use value and negative exchange value, - two concepts proposed to facilitate an assessment of the negative environmental and health consequences of capitalist production and consumption for critical economic theory. To start I wish to note that I have previously focused almost entirely on the concept of *negative use value*. The need for a precise definition of this concept is obvious. In classical and Marxian economics, the concept of use value referred to the significance of commodities for the fulfilment of human needs. The concept of *negative use value* cannot be adopted as a simple *inversion* of this concept, but has to be conceived in a broader way, i.e. to refer to the negative impact of production methods and of articles of consumption both for human health and for our natural environment (1). Since the concept of negative use value did not exist in Marxist theory as conceived by its founding fathers, orthodox Marxists have great difficulty in accepting it. Yet it can easily be explained how Marxism's limitations have their historical roots: in Marx's time the attention which economists devoted to environmental consequences of capitalist production was generally limited (2).

2. The Marginalist School and Beyond

Now, whereas I have previously applied the concept of negative use value in the context of my theoretical work on the nuclear sector, and have refrained from devoting a theoretical discussion to the concept of negative *exchange* value, - the history of economic science clearly brings out the need for a *differentiation* between the two mentioned concepts. The school of the marginalists, which put forward a subjective theory of value in the later part of the 19th century, gave birth to the concept of '*externalities*', or external economic effects. In Alfred Marshall, the towering figure of the marginalist school, this concept referred to the unintended beneficial economic effects of one entrepreneur's efforts for other entrepreneurs, such as the beneficial effects of publicity and the spread of information on workers' knowledge (3). In the writings of Marshall's student, Pigou, however, the concept of external effects came to refer to the consequences of an industrial company's activities for our natural environment. Whereas the negative environmental impact of one individual company's activities may not be reflected in that company's balance sheet of expenditures and income, the financial costs following from the environmental damages caused by that company may be reflected in the balance sheet of society as a whole (4).

The concept of externalities, it may be noted in passing, was only one direction of thought regarding the environmental consequences of capitalist production, that emerged with the school of the marginalists. Although this remained, it appears, almost wholly unnoticed, the marginalist thinker Jevons in his book on the subjective theory of value, put forward a different line of thinking, be it in the most rudimentary fashion. Here, Jevons mentioned two new concepts for consideration, namely the concept of *disutility*, and the concept of *discommodity*. In opposition to utility, which according to him refers to the production of

pleasure, the concept of disutility refers to the production of pain. This concept then is a precursor of the concept of negative use value, although it is unclear whether Jevons, when speaking of disutility, thought of pain for humans only, or of pain to other living creatures as well. Discommodity in his eyes would refer to anything we desire to get rid of, such as ashes and sewage. Jevons thus was aware of the fact that consumption results in forms of waste (5). This concept of discommodity then was the precursor of the concept of non-commodity waste, being the by-products of capitalist manufacturing and containing damaging properties for human health and/or our natural environment (6).

Now whereas these concepts of Jevons were ignored by later-day environmental economists, the single concept of *externalities* in the second part of the twentieth century has been picked up by a section of environmental economists and employed to highlight the financial costs arising from efforts to counter the negative environmental effects of capitalist production. At first, economists were glad to possess a means, a theoretical device, for evaluation of environmental costs. Yet more recently, a section of ecological economists have opined that the concept of externalities is limited in its scope, since damages to the environment are not as easily translated into economic costs, as the marginalists have implied. Thus, there is the question of *synergy*, due to which the combined impact of gaseous emissions, for instance, is larger than the individual impact of the various individual gaseous emissions. Again, in some cases, environmental degradation only becomes visible after a certain *threshold* has been passed. In yet other cases there are delayed effects, due to which environmental damages take their effect only after a certain *time lag* (7). Clearly, then, environmental damages are not readily translatable into financial costs.

Beyond Orthodox Marxism

The above brief comment on the concept of externalities already brings out why the differentiation between negative use value and negative exchange value is of great importance for critical economic theory. To an extent, the concept of externalities bears similarity to the concept of negative exchange value. However, whereas the concept of externalities stands alone, and wrongly suggests that environmental damages automatically are translated into economic costs, the concept of negative exchange-value as proposed by me is accompanied by the concept of negative use value, which suggests that capitalist production and consumption has distinctly negative health and environmental consequences, which can or may not be translated into, or reflected in, costs incurred by producers and consumers in a capitalist economy. Thus, the *twin concepts* of negative use value and negative exchange value make it possible to differentiate, and to admit that human knowledge is always limited, and that environmental (and health) consequences of our interventions in nature may only become apparent to human actors long after those interventions have actually started. We need twin concepts precisely to bring out the fact, that cost calculations regarding environmental damages are *always* incomplete (8)!

The need for a differentiation between negative use-value and negative exchange value also follows logically from the actual historical experience of world capitalism. For in the first phase after the Industrial Revolution of the late 18th century, industrial entrepreneurs by and large could ignore the environmental costs accruing from their industrial processes. Each and every industry that arose did affect the environment, each industry at the same time while bringing a commodity with additional value on the market, also released waste products into the environment, without the company taking responsibility for the consequences of its dumping practices. The average outcome of manufacturing processes, in value terms could be

expressed as a combination of *triple* positive value, since commodities embody constant, variable and surplus capital, - with *one* kind of negative value, being negative use value. However, in the course of the twentieth century, and in particular towards the end of this century century, industrial companies are increasingly being forced to take responsibility for the economic costs deriving from their industrial interventions. Hence, by now industrial processes frequently result in a different combination of outcomes – *triple* positive value as mentioned, in combination with *double* negative value outcomes, in the form of negative use- and negative exchange values.

The historical transition from one without, towards one with allocation of financial responsibility for environmental damages may be highlighted through the use of two formulas. To express value creation, Marx, as well known used the formula $c + v + s$, the formula referring to the triple value content of new capitalist commodities. In this formula, there was no reference to environmental or health damages of capitalist production. Through the formula $c + v + s - \mathbf{wu}$ we can express the situation which prevailed in the first phase after the Industrial Revolution, where production frequently led to air pollution or contamination of water resources, without such having any consequences for entrepreneurs. While helping to generate a product with added value, manufacturing technologies also bore negative use values. But financial consequences were largely absent. Today's realities need to be stated via a differential formula, the formula $c + v + s - \mathbf{wu/we}$. What this formula expresses, is that the outcome of capitalist manufacturing, aside from commodities with triple value, is a combination of two kinds of negative value, i.e. negative use- and negative exchange value. This is true wherever production is regulated through a government policy that force companies to bear the costs for environmental damages.

In short – both for logical and for historical reasons, we need to insist on the need to project the damaging outcome of capitalist production and consumption in double terms. We need to theorise those effects in terms of the concept of *negative use value*, which concept refers both to the damaging effects of industrial production technologies, and to the damaging effects from the use of capitalist end-products, i.e. consumable items. But we also need to theorise the damaging effects of capitalist manufacturing in terms of *negative exchange values*, the costs which companies are required to bear in consequences of their damaging interventions. Only by using these twin concepts will it be possible to at least partly translate environmental damages into economic costs, at the same time while continuing our research and investigation into lesser or unknown environmental implications of capitalist interventions. Thus, the conceptualisation in the given twin terms allows us to gradually develop environmental assessments, - even as society gradually develops policies to force companies to bear costs for those environmental and health damages regarding which sufficient knowledge is available. From a policy-perspective, only a twin conceptualisation can bring convincing results.

Conclusion

In the history of economic thought, the marginalist School which became popular at European universities towards the end of the 19th century, is known primarily for having formulated a *subjectivist* theory of value – in opposition to the labour theory of value of the classical theory and of Marxism. Both Adam Smith, David Ricardo and Karl Marx had held that the value contained in market commodities reflects the labour that has gone into their creation. Marx in particular had provided a scientific framework for understanding the workers' toil, through his formula for the value content of all commodities, the formula $c + v$

+ **s**, which formula expresses the idea that workers contribute both the variable and the surplus value part of the new product. The marginalists completely rejected this approach. They held that the value of commodities is purely determined by the significance which individual consumers attach to them. This significance being a matter of personal assessment, theirs indeed was a subjectivist theory of value. Not coincidentally, some of the members of the marginalist school, such as Jevons, were outspokenly opposed to collective bargaining, to negotiations for wage increases by representatives of the working class (9).

The subjectivist theory of value of the marginalist school, although it as stated contained an innovative element in the form of the concept of externalities, in recent decades has come under attack from a section of environmental economists, the ecological economists. They have argued not only that the concept of externalities is defective, since it does not allow us to clearly differentiate between the environmentally damaging consequences of capitalist production, and the financial costs that need to be made to clean up the environment or prevent negative environmental effects from taking place. Ecological economists have also argued that the subjectivist theory of value of the marginalists, which is the cornerstone of their theoretical structure of thought, itself needs to be questioned. For by posing that the value of commodities is entirely determined by the significance which individual consumers attach to those commodities, they do not pay respect to nature: the subjectivist theory of value does not offer any scope for the incorporation into theory of nature's contribution to the value of commodity. It is far removed from the thinking of those environmentalists who argue that (living) nature has intrinsic value, quite independent from its instrumental significance for human beings.

Through the twin concept of negative use value and negative exchange value, as discussed in this essay, we can then both criticise the defective concept of externalities of the marginalists, and work towards restoration of an objective theory of value, - in succession to that originally put forward by classical and by Marxist theory. For the formula $c + v + s - \mathbf{wu}/\mathbf{we}$ offers recognition to human labour, via the differentiation between **c**, **v** and **s**, and through the analysis of the content of the surplus **s** ; it also offers a recognition that nature, the sanctity of our natural environment, must be respected, - via the twin concepts of **wu** and **we**. For, to repeat, through the formula economic theory admits that capitalist production affects our environment negatively. Moreover, economic theory admits so quite independent from the fact as to whether companies or the state are ready to pay for the repairs required by these effects. Lastly -this conceptualisation is one that contains an implicit critique of the original labour theory of value as formulated by Marx, but nevertheless strongly re-affirms the need for an objective labour theory of value – quite radically opposed to the theory of value of the marginalists. Only through the twin concepts of negative use- and exchange value can we move beyond both the marginalists and beyond Marxist orthodoxy.

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- (9) see Ernesto Screpanti and Stefano Zamagni (1995), op.cit., p.157;
- (10) Frank Dietz (1994), op.cit., p.40.