



***How the World Works: The Story of Human Labor from Prehistory to the Modern Day* by Paul Cockshott. Monthly Review Press, 2019.**

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INTENDED TO BE AN INTRODUCTION to the materialist theory of history, *How the world works: from prehistory to the modern day* by Paul Cockshott is a controversial book. Its message: humans labor to guarantee their survival and the equipment at disposal plays the decisive role in the way society reproduces economically. “Technology and population constrain everything else” (Cockshott 2019, 12). Cockshott’s book is an attempt to put natural sciences back into the heart of the Marxist analysis of the history of human societies, and to defend materialist determinism.

Since Marx’s ([1859] 1977) days there has always been an attack against materialist determinism. I agree with Cockshott’s explanation as to why the technologically determinist view of society became “something of an embarrassment” (ibid., 11). During the twentieth century in the West, there was a separation between social and natural sciences. As a result, many Western Marxists have little training in physics, chemistry, or biology. Against this problematic development, the book argues that the historical development of human socioeconomic systems can only be understood based on the crude laws of “hard” sciences.

However, I feel that this important correction cannot be properly developed in a work directed to beginners. It deals with an immense volume of material that deserves profound reflection. Advanced readers might become both disappointed and instigated, because the density is too high and should have been dispersed along more pages.

The book is divided into unbalanced seven chapters. Chapter 1 (Introduction) explains well that any social formation must perform various tasks to survive. Humans are just another specific case of the more abstract

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notion of animal society. Cockshott explains the differences between abstract/social labor and concrete/individual labor in an original way. Since labor here always means labor in the energetic/physiological sense, he establishes a clever parallel between the colonies of termites and humans. In both cases there is a total social workload that is distributed among the individual members. Termites are eusocial insects. Labor division follows a natural dynamic. Like with ants and honeybees, they have caste differences such as the queen and reproductive males, soldiers and workers, etc. In polymorphic animals, such as termites, these 'social' differences are embedded in the bodies of the individuals (one is giant, the other tiny, another one can fly, etc.). Each living organism is naturally prepared to perform narrow tasks. Humans have only one structural significant difference: that of between male and female. Cockshott implicitly indicates that this difference is at the root of the first division of labor between humans as Engels ([1884] 2010) argued.

Chapter 2 (Pre-Class Economy) revolves around the first great technological step that explains the end of egalitarian economies, the Neolithic Revolution. The challenge here is to explain the transition to a division between a laboring and a non-laboring class. Cockshott points to two aspects in the transition from nomadic life to agricultural civilization. First, the substitution of hunting and gathering by agriculture and animal husbandry signifies that humans descend to a lower trophic level. The main technological innovation responsible for this is fire, which amplifies the possibilities of nutrition by enlarging the digestible material under control of society. This is good news, because it is easier to live in a settlement than to move around constantly looking for means of subsistence. Second, the bad news: this transition is associated with the possible rise of a ruling class.

Cockshott's argument clearly indicates that there is no obvious positiveness or negativity in the Neolithic Revolution. Empirical data shows that the life of an agricultural population was harder than the life of hunters, because people had to work longer after productivity had *risen*. Moreover, although Cockshott did not mention it, archeological investigation (see Harari 2015, chapter 5: "History's Biggest Fraud") indicates that the general level of health of the average human *diminished* after the Neolithic Revolution. The main reason for that seems to be that the forces of natural selection act with greater ferocity when humans struggle in the wilderness in small groups. This relevant step of humankind means that the average diet and conditions of life of the individual can *decrease* while

the population *grows*. This reveals an ambiguous outcome. Massive civilizations rest on human exploitation but at the same time they can protect the disabled and sick better than the nomad tribe. Food surplus does not automatically generate an exploiting class, but once the possibility is there, “misfortunes” like “war, patriarchy, and religion” seem to be responsible for dividing humans into social classes. Hence “we have a problem with explaining the rise of class stratification as a direct result of rising productivity” (Cockshott, 2019, 44).

After leaving the deep mysteries of the transition from *Urkommunismus* to the epoch of class struggle, Cockshott deals with the Slave Economy in Chapter 3. There are two main characteristics common to all Slave Economies. First, they have well developed mercantile relations. Second, they have an external source of workforce. Both characteristics are entirely dependent on the technology of transportation of goods and workers. Here we notice a tremendous effort of synthesis and generalization that, although necessary, is also polemical. Vastly different societies dispersed in time and space (Asian, Ancient Rome, merchant colonies) are classified in the same category. In Cockshott’s definition, Slave Economies are structured around certain common features to suck labor from imprisoned people. So it becomes almost identical to capitalism itself or to any other class society, even if the ‘imprisoning system’ is different.

In Chapter 4 Cockshott tries to justify the effort of theoretical generalization by explaining his option to talk about Peasant Economy and not feudalism. For him, feudalism is Peasant Economy for the territorial and cultural delimitations of Europe. So, Peasant Economy is the correct concept and we find it in different epochs and locations outside Europe. The most important argument here is that this kind of economy cannot be described as a system without economic rationality. Against the usual claim that non-capitalist societies rests on extra-economic coercion, Cockshott argues with help of historical evidence that the same sort of disbalance between the indebted and the creditor are to be found in the obligations established between lord and servant.

In the technological determinism approach proposed by Cockshott, all differences between modes of production tend to be reduced to quantitative differences only. Qualitative transformations are conceived indirectly as the result of cumulative quantitative changes. Here, again, the Peasant Economy becomes similar to capitalism. The main difference seems to be the size of the economy, the scale of production. If quantity is the only parameter to differentiate socioeconomic systems, then, in fact, technology

is the ultimate determinant of everything. That is why Cockshott treats “[...] a mode of production as being irreducibly determined by technology, so that the capitalist mode of production is machine industry, and the feudal mode of production is peasant agriculture.” (footnote 55, 354).

I notice at least one problem with this reductionist perspective. It seems that there is an intrinsic and a-historical economic rationality in the behavior of the agents. It is as if humans could not be ideologically dominated and make irrational choices from the standpoint of productivity. Is there a universal protocol of human action guiding economic decisions, like what Mises proposes when he summons praxeology? The challenge of theoretical generalization to compress logic into history is that we need to deal with two fields of laws, as Oskar Lange lectured: those valid for all types of economy and those valid only to specific historical social formations. Unfortunately, the book does not enter these details.

Chapter 5 on the Capitalist Economy is the largest one. Let us focus on only one aspect. What are the technical conditions that make capital govern the entire economy? In other words, what is the first spark that ignites capitalism as an “auto-catalytic system?”

The traditional Marxist answer for the beginning of capitalism lies at the possibility of systematic reproduction of the worker deprived from means of production and without a specific master. When the worker has no equipment and is not a slave, he needs to continuously sell his/her commodity, labor power, at the labor market. So, it is not some technical device which is directly responsible for the emergence of capitalism as a mode of production, but the social fact that there is a population who can only survive if it can continuously transform its labor power into money. Industry is the adequate method of production for capitalism, but it is not the primary generator of capitalist relations. The potential of capital has always been there, behind the logic of the interest rate. The Industrial Revolution is what allowed it to move freely.

Cockshott looks in another direction, implying that the machine industry creates capitalism and not the other way around. He argues that the capitalist technological innovations depend on science that is generated *outside* mercantile relations. So, here, scientific revolution and the rise of capitalism are not so closely related as in the traditional Marxist historiography. There is a contradictory relationship between capitalism and science, but there is no room to explore this feature in the book.

Finally, how do Socialist Economies work? In chapter 6 Cockshott presents his views based on real existing experiences. Again, due to the

fundamentals of technology as the ultimate factor, these societies do not diverge so much from capitalism. Since industry is a common feature, the similarities between the opposing political systems are striking. Hence, there is a competent initial discussion on the parallel between socialism and state-owned capitalism. Cockshott remembers Lenin's notion that electricity was one strong pillar of the soviet project and puts every hope in the development of technical novelties to trigger social change.

In the last chapter 7 (Future Economics) Cockshott presents the ITER (International Thermonuclear Experimental Reactor) experiment. This could be the starting point for a new type of energy generator that would put a gigantic amount of energy under control of humanity. He emphasizes that these and other technologies are so huge that no private capital could ever support them. That is why social planning is necessary to allow further development of the productive forces.

The book reveals too little of a project with huge potential. I believe that Cockshott could explore more his relative advantage as a Marxist with solid formation on hard sciences. There is no need to rely so closely on the standard literature of Political Economy, because this leads to tricky debates, such as that about the continuity and rupture between Marx and Adam Smith or that about the validity of the law of value in non-capitalist economies. I think the structure of the work could have developed around two great transformations only: the Neolithic and the Industrial Revolutions. The traditional scheme of successive forms of economy (primitive/hunters/gatherers → despotic → modern society) restricts the potentialities of the technologically determinist approach because it reinforces a standard for classification that could have been modified here according to Cockshott's own definition of mode of production.

The weakest feature to my view is the invisibility of the political organization of the working class. There is too much hope in technique as if the improvement of technology were a conscious effort with the purpose to amplify our control over nature. Unfortunately, I think modern science has always been dominated by capital, as everything else. That is why there is no clear trend as to whether we are progressing or regressing in terms of technology since the 1970s, as the book indicates. What we have is a notorious use of all accumulated scientific knowledge that does not match the interests of the working class. In any case, readers will not find it difficult to understand that non-primitive communism is not only a political flag of the working class, but also a necessity for the wellbeing of the whole human species on planet Earth.

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