

Understanding Climate Change Through Metabolic Rift

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Abstract: Metabolic Rift was one of the key ideas that was developed by Marx in the 19th century. Left untouched for decades by the academia, it suddenly now holds immense relevance and importance for the academic left and center, and to some degree the general international community, due to the increasing environmental catastrophe that is unveiling itself in front of our eyes. Marx argued that the Metabolic Rift between nature and humans would be a natural and logical outcome of capitalism, with the use of advance technology to extract a greater surplus value, the driving force of capitalism. This paper aims to answer some of the most pressing questions that arise out of this. Firstly, how does an economic system so drastically affect the environment to an extent from which the environment is unlikely to recover, at least in a few million years? Secondly, technology as we know it today has degraded the environment to such a degree, and has threatened the very existence of life on Earth. However, it remains impossible for us to abandon the use of technology as it has become essential for our way of life (healthcare, transport, education, communication). Technology has become so integrated in our lives and has become so essential for our survival in so many ways that humans have, to a very large extent, become cyborgs. If that is true, breaking away from technology would not be the way to move forward, hence how do we deal with the issue at hand, because the continuing use of technology in the current way would destroy the environment, but we cannot abandon to use technology at the same time. How, then, an ethical use of technology be worked out so that there is harmony between nature and technology and thus, how do we break the binary of the nature-human without relinquishing the use of technology?

Keywords—*Metabolic Rift; capitalism; technology;*

I. INTRODUCTION

The natural environment, in the past 160 years, has been deteriorating at levels never witnessed before in history¹. The arctic ice shelves are melting at a rate of 13.3 percent per decade (Arctic sea ice minimum | NASA Global Climate Change, 2017), the ozone layer had reached 10 million square miles (2016 Antarctic Ozone Hole Reaches Moderate Size, 2017) natural disasters such as floods, hurricanes and earthquakes are more frequent and ever more disastrous than before and entire animal species are becoming extinct. Humans have, for millennia, been involved in activities that modify nature to the benefit and use for themselves. Forests have been cleared for agriculture, dams have been built, the course of certain rivers have been altered and numerous animal species have been domesticated, all to the advantage of humans themselves. The alterations and modifications, however, were done in a way that were harmonious with nature and notions of overpowering or subduing nature did not exist in any of the cultures across time and space. Instead, what existed in many

¹ If the world is 46 hours old, humans have been present on Earth for 1 hour, industrial revolution happened an hour ago and we have already destroyed 50 % of the forests.

ancient cultures and civilizations were offerings of different kinds, in the forms of sacrifices and gifts, to the forces of nature such as rivers, winds, sun etc. which is a testament to the kind of relationship of mutual respect found between humans and nature (Planet Egypt, 2014). Hence, that is to say, the binary of human and nature did not exist for the pre-modern human, and humans considered themselves part of nature instead of something outside it. The paper will attempt to understand the problem of climate change through the concept of metabolic rift and will establish why it is so essential to understand climate change from such a perspective. Hence, the paper will then attempt to outline the key issues relating to climate change and propose streams of thought which could potentially provide us with a solution to climate change.

There is a general consensus among the scientific community that climate change is a real phenomenon that is unfolding in front of our eyes and that the phenomenon can rightly be attributed to anthropogenic activities, as much of the data suggest. The discourse of climate change had been attributed for a very long time to the technological and in relation with that, to the political and social spheres of human activity. However, there is another dimension to this problem that has been seldom² appreciated for the overwhelming role it plays in the issue of climate change. Capitalism, with the advent of the industrial revolution in the late 18th century, proved to be a dominant framework under which politics, society and science worked and were marked with a fundamental shift in their characteristics, which ultimately resulted in the disruption and interference of global ecological systems.

In the nineteenth century, the term ‘metabolic rift’ was coined by Karl Marx to predict the systematic degradation of the ecology under capitalism. The term was introduced by Marx in the *Grundrisse* but it was only later that the idea was built upon by the later generations of Marxists. The idea of the ‘metabolic rift’ developed by Marx in the nineteenth century was at a time when climate change as a phenomenon was not recognized by the international scientific community nor was there sufficient³ data present to indicate or predict any drastic changes in the climate in the near future.

Marxian sociology, in contrast to traditional sociology, had a very different approach to economics as it tended to include ecology into the conversation. Marx considered man as a part of nature, as he (man) lived off from nature and the body of the man was essentially nature itself. And if man was to survive, he had to maintain a continuous

² In my view, this is because the triumph of capitalism over communism in the late 20th century blinded many, like Fancis Fukuyama, from the self-destructive capabilities of capitalism.

³ However, there were some emerging evidences of soil exhaustion in some parts of Europe during the early eighteenth century, due to the use of nitrates, which might have suggested the start of environmental degradation to some degree.

dialogue with nature. Hence, for Marx, this dialogue was the metabolic balance that was so essential for the mutual survival of man and nature (as we know it). The dialogue between man and nature was mediated through the production process (social metabolism) through which man exploited⁴ nature. This rate of exploitation was constrained by man's technological advancement and also countered by the forces of nature and hence, man was able to exploit nature only to a certain degree, giving nature time to replenish itself due to the surplus extraction by man. In any case, the economic systems of pre-modern times were never modeled on expansion and growth, and the drive for profits was never a stimulus for man. It was this delicate balance between human and nature that for Marx was so crucial for man's own survival, and the disruption of which he called metabolic rift. In Marx's own words, metabolic rift was the "irreparable rift in the interdependent process of social metabolism".

With the advent of capitalism, there was a sudden demand felt for the introduction of new technology. This demand for technology was driven by the sudden desire of accumulation of wealth and the maximization of profit that is so inherent in capitalism. For it was only in the capitalist dictionary that phenomenon's such as growth, expansion and profit maximization are found and it was these phenomenon's that spearheaded the new world order of global capitalism through integrated world markets. Hence, in response to the stimuli provided by capitalism, there evolved a very specific kind of technology that was created without any regard for the environment and for the sole purpose of surplus extraction and exploitation. Perhaps it was at this moment that the binaries of human and nature started to take form and this binary conceivably gave birth to human aspiration of mastery over nature. Thus as Foster puts it, "with the expansion of capitalism on a global scale, human economic processes began to rival the ecological cycle of the planet, opening up for the first time the real possibility of planet wide ecological disaster." (*John Bellamy Foster - The Crisis of Capital: Economy, Ecology and Empire*, 2010)

It was due to this revolutionary perspective of the integration of economics with ecology that Marxian sociology has become so relevant for the present times. For without understanding the overarching system of global capitalism, it would have been impossible to understand the mechanisms of climate change simply through technological, political and societal viewpoints. These points of inquiry, without addressing capitalism as a system, proved to be insufficient explaining climate change. Hence, metabolic rift presents a lens which gives us an opportunity to examine the overlying systems and underlying structures of climate change in its entirety and complexity.

Capitalism, it seems in line with our current argument, is the root cause of the climatic catastrophe taking place in front of our eyes, and it would only be logical to overthrow capitalism in order to mend the metabolic rift. However, matters are not so simple if we understand the different aspects of the problem. Since the advent of capitalism to the present day, technology has evolved in a very peculiar way. The driving force behind the development of technology in the capitalist age, from the viewpoint of the capitalist, was

to maximize profits by controlling current markets but also creating new markets and demands. However, for the consumer, conspicuous consumption of goods and services meant the complete transformation of their lifestyles⁵.

The integration of technology with not only the human body but also with human lives, has resulted in us being cyborgs. Technology, specially personalized technology such as smartphones, laptops etc. which were first introduced into the market as a luxury have now become a necessity for human life. From businesses to security, healthcare, travel, power-production and transport, technology is now an essential part of us, without which we would not be able to function at all. Humans initially shaped technology and defined and determined its purpose and the manner of its working, but increasingly it has been quite true for the inverse as well, with technology shaping much of human life. Hence, humans have become cyborgs in the true sense of the word.

Let us examine one of the aspects of human life and how it has become dependent on technology. In 2009, the world's urban population surpassed the rural population, and thus marking a fundamental shift in global demographics (UN, 2009). Among other things, this demographic shift meant an increase demand of power for the continuous functioning of basic healthcare system, transport, industries etc. However, much of the energy sector still depends on a very large extent on nuclear processes. This poses a continuous threat to the environment as was proven by the Chernobyl incident and then again by the recent leakage of Japanese nuclear power plants in 2013 (McCurry, 2013).

Hence, the problem that we are now confronted with is paradoxical. The continuing use of technology under the current system of capitalism would continue to destroy the ecology and bring us closer to a point of no return. The total abandonment of the use of technology is not a viable solution due to the fact that we humans are now basically cyborgs, and without technology we would not be able to function. How can one then address the question of climate change keeping in mind the co-evolution of the modern human with technology and their dependence on technology?

Many researchers tend to look for the answer and come up with solutions from a communist perspective. This approach, according to me, is due to the fact that these researchers have used the concept of metabolic rift as a lens to understand climate change. Metabolic rift, which is a serious critique of capitalism from a Marxian ecological perspective, forces people to be constrained within the capitalist-communist binary, due to communism being presented as an anti-thesis to capitalism. There can be no graver mistake than this. Metabolic rift provides a holistic approach towards climate change, incorporating with in all aspects of the problem. However, it does not hold the capacity to provide to us with a solution. To look or constrain ourselves within communism would mean that we are interested in the distributive mechanisms and apparatuses of surplus value. However, the issue of climate change does not find its origin at the distributive points of surplus value, but instead at the

⁵ Dowry is an excellent example of how capitalism has transformed human relations at least in the subcontinental context. It has now become customary for the groom to ask for excessive dowry such as fridges, cars, air conditioners from the bride, which was not the case a few decades ago when hyper consumption had not taken root.

⁴ I use the term exploited in its Marxian sense as nature did produce a surplus which was then appropriated by humans as has been the case for millennials.

production of surplus value where the exploitation of nature actually occurs. Hence, our current understanding of communism would be an insufficient approach to tackle climate change.

However, who remain adamant in restricting themselves within the binary of capitalism-communism, argue that worker co-operatives and similar company models would counter the profit-making mindset and the drive for accumulation found within capitalist co-operations. Hence, if these drives are not present, exploitation of nature would not take place, at least not at the current scale. However, this line of argument reflects the incorrect understanding of communism and its recent history. In the Soviet Union, capitalism as a system was replaced with communism, however, there still persisted a relentless desire for growth and profit-making which was extremely evident from Stalin's rapid industrialization. In the modern era as well, workers co-operatives are not motivated by sustainability but by growth and expansion. Hence, in order to address climate change, it is fundamental that we liberate ourselves from the binary of capitalism-communism and open up the possibility for ourselves to look outside this binary for a solution.

Secondly, the binary of human and nature must be broken and we must return to our previous state of coexistence within nature and as a part of nature rather than something distinct from it, even if that means walking back on our path of 'progress'. This breaking of binary is very important as it will stop us from implementing unviable solutions for climate change. The concept of geo-engineering is based on this very belief that humans are a separate and superior entity than nature, and thus we can control nature. The belief of human superiority over nature has strengthened this binary to such an extent that even after 160 years of exploiting nature we still choose to alter nature through geo-engineering to suit our location specific needs rather than taking the obvious path of cutting down carbon emissions and stopping deforestation. Other than the belief of superiority over nature, this kind of approach reflects the overarching power of capitalism, which has blinded us to its self-destructive tendencies.

Thirdly, we must address the faculty of desire in human body which has been so exploited by capitalism. Conspicuous and mass consumption has only been made possible by attacking the faculty of desire so that there is a demand for commodities that is not even required by the consumer. For example, with the introduction of a new iPhone every year, there is also created a demand for that iPhone through the mass media by manipulating the faculty of desire. The new iPhone, or for that matter of fact any phone, is only slightly different than its last model. However, this newly created demand puts into motion the whole chain of production from the procurement of the raw materials to the production of the phone. If we only focus on the procurement sector, most of the raw materials such as cobalt are found Congolese mines. Putting aside the fact that these mines are operated under child slavery (Gibson, 2014), the very extraction of these minerals have severe environmental consequences. Hence, desire, which might seem to us as an unrelated aspect to climate change, has long term and consequences for the environment. Thus controlling desire means the controlling of mass media which acts as a tool for capitalism in creating unrealistic demands for commodities.

However, we have still not directly addressed how the use of technology should be in a manner that is respectful of

the environment around us. There is a common understanding that technology is inherently not very environmental friendly. This notion persists due to the fact that much of technology has evolved around capitalist motives as has been discussed earlier. However, if we are to implement the proposals presented above, namely the dissolution of binaries, the constraint of desire and the overthrowing of capitalism, much of the problem of the ethical use of technology resolves itself for us. For technology would not then be an environmentally destructive force, as it will adhere to the human need for technology to exist as a part of nature, since we have destroyed the binaries. However, one must voice the concerns put forward by the contemporary philosopher Zizek. According to Zizek, human integration with technology opens up fascinating new possibilities for humans. Dialysis, prosthetic body parts and the LVAD (Left Ventricular Assist Device) are just some of the many examples of the benefits of the integration of human and technology. However, there must remain a minimum level of separation between the human mind and technology so that the mind is conscious of what it is controlling and to what extent is the technology controlling the mind (Zizek, 2017). For if that line between human and technology was to become blur as it already has, humans would lose their sense of freedom even without realizing it, opening up the possibility of the emergence of a new class, which not only controls information and manipulate human desire as in the case of Mckanzaie Wark's vectorialist class, but basically controls technology, and through it, the human body itself. This would not only entail a new cycle of oppression and subordination of one class by another, it may also lead to the possibility of exploitation of nature.

The problem of climate change is much more serious than what even the climate scientists perceived previously. Hence, there is an immediate need for us to take action and mend the rift between human and nature. However, at the same time, it is also crucial for us to think seriously and from every aspect possible and including all facets before any action is taken. For we have brought our planet to the point where we might not be provided by the luxury of a second chance. Hence, non-serious and short-sighted solutions such as geo-engineering to the problem of climate change might result in an ecological catastrophe on a global scale from which we might not be able to ever recover and the world might cease to exist as we know it today.

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