
Climate Crisis and Historical Narrative: A Study based on Amitav Ghosh's *The Great Derangement: the Climate Change and the Unthinkable*

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Abstract

This paper on "Climate Crisis and Historical Narrative: A Study based on Amitav Ghosh's The Great Derangement: the Climate Change and the Unthinkable" (2016) attempts to grasp Ghosh's treatment of the complexity and urgency of the subject of climate crisis from the perspective of history and power. The first part of the paper attempts to provide the context for Ghosh's deliberations on why historical frameworks are ineffectual in depicting a history of climate crisis. The second part of the paper moves with Ghosh as he develops his arguments through key topics as capitalism and historical narrative, capitalism and empire, Asia's centrality to the climate crisis, dissemination of thought and technology, and their impact on climate crisis, history of fossil fuels, on the hegemonic presence of European powers, on the canon of distributive justice, on indigenous resistance and so on. This could be the first serious reading of the part of Ghosh's text which concerns history of global warming, featuring the strengths of the arguments through textual evidences and analysis.

Key words: climate crisis - capitalism and empire - fossil fuels - European hegemonic presence- distributive justice- climate crisis and Asia

1. Introduction

In *The Great Derangement: the Climate Change and the Unthinkable* (2016), Ghosh examines the inadequacy of our present culture, at the level of literature, history and politics, to comprehend the scale and violence of climate change. The acute nature of today's climatic situations turns them unusually resistant to the contemporary imagination. We do not have frames in fiction to depict a hundred-year storms and freakish tornadoes. The issue of climate crisis depicted in historical writings has sometimes led to gross simplifications. Ghosh suggests that politics, much like literature, has become a matter of moral reckoning rather than an arena of collective action. But to limit culture and politics to individual moral adventure comes at a great cost. The climate crisis asks us to imagine other forms of human existence - a task to which fiction, Ghosh argues,

is best suited of all forms. The Great Derangement serves as a brilliant writer's summons to confront the most urgent task in human history.

2. Context

Before we may go into the history of the present climate crisis as Amitav Ghosh presents it, it may be important to know the history of the circumstances that led to the study of climate change. For this I would rely on the findings of Richard Black, BBC environment correspondent who has traced key milestones, which for convenience may be grouped under three heads: scientific research and discoveries, political action and population rise.

2.1. Scientific Research and Discoveries

The consensus expressed scientific literature suggests that at no point in the preindustrial era did CO₂ concentrations went above 300 ppm. Hence history of the scientific discoveries concerning climate change may be traced back to the findings and discoveries following Industrial Revolution. It was the British ironmonger, Thomas Newcomen who made a significant contribution to the industrial revolution with his invention of the atmospheric engine in 1712. It became an important method of draining water from deep mines and was therefore a vital component in the Industrial Revolution in Britain. In 1827, Joseph Fourier, a French mathematician and physicist, wondered why Earth's average temperature is approximately 15°C (59°F). He reasoned that some type of balance between the incoming energy and the outgoing energy is maintain through Earth's natural "greenhouse effect". Following this, in 1861, the Irish physicist John Tyndall showed that water vapour and certain other gases create the greenhouse effect. In 1886, Karl Benz unveils the Motorwagen, often regarded as the first true automobile. In 1896, Swedish chemist Svante Arrhenius concluded that industrial-age coal burning will enhance the natural greenhouse effect. He suggested that this might be beneficial for future generations.

In 1900, Knut Angstrom, discovers that even at the tiny concentrations found in the atmosphere, CO₂ strongly absorbs parts of the infrared spectrum. By 1927, Carbon emissions from fossil fuel burning and industry reach one billion tonnes per year. *In 1938*, using records from 147 weather stations around the world *G.S. Callendar, a British Engineer argued that the level of carbon dioxide was climbing and raising global temperature, but most scientists dismissed the "Callendar effect" as implausible. It was almost by chance that a few researchers in the 1950s discovered that global warming truly was possible.* IN 1955 Gilbert Plass, a US researcher, using a new generation equipment including early computers, analysed in detail the infrared absorption of various gases. He concluded that doubling CO₂ concentrations increased temperatures by 3-4°C. In 1957, Revelle co-authored a paper with Hans Suess that suggested that the Earth's oceans would absorb excess carbon dioxide generated by humanity at a much slower rate than previously predicted by geoscientists, thereby suggesting that human gas emissions might create a "greenhouse effect" that would cause global warming over time. Although other articles in the same journal discussed carbon dioxide levels, the Suess-Revelle paper was "the only one of the three to stress the growing quantity of CO₂ contributed by our burning of [fossil fuel](#)", and

to call attention to the fact that it might cause global warming over time. In 1958, using equipment he had developed himself, Charles David (Dave) Keeling began systematic measurements of atmospheric CO₂ at Mauna Loa in Hawaii and in Antarctica. Within four years, the project provided the first unequivocal proof that CO₂ concentrations were on the rise. By 1959, CO₂ concentrations had reached 316 ppm. In 1975, US scientist Wallace Broecker became the first to put the term "global warming" into the public domain in the title of a scientific paper. In 1989, Carbon emissions from fossil fuel burning and industry reached six billion tonnes per year. In 1998, strong El Nino conditions combined with global warming to produce the warmest year on record. The average global temperature reached 0.52C above the mean for the period 1961-90 (a commonly used baseline). In 1999 publication of the controversial "hockey stick" graph indicating that modern-day temperature rise in the northern hemisphere showed it was unusual compared with the last 1,000 years. The work was later subjected to two enquiries instigated by the US Congress. **In 2006**, the Stern Review concluded that climate change could damage global GDP by up to 20% if left unchecked but curbing it would cost about 1% of global GDP. In 2006, it was calculated that Carbon emissions from fossil fuel burning and industry reach eight billion tonnes per year. In 2008, half a century after beginning observations at Mauna Loa, the Keeling project arrived at a conclusion that CO₂ concentrations had risen from 315 parts per million (ppm) in 1958 to 380 ppm in 2008. In 2011, a new analysis of the Earth's temperature record by scientists concerned over the "Climate Gate" allegations proved that the planet's land surface really has warmed over the last century. Data showed that concentrations of greenhouse gases were rising faster than in the previous years. In 2012 the Arctic sea ice reached a minimum extent of 3.41 million sq km (1.32 million sq mi), a record for the lowest summer cover since satellite measurements began in 1979. In 2013 the Mauna Loa Observatory on Hawaii reported that the daily mean concentration of CO₂ in the atmosphere has surpassed 400 parts per million (ppm) for the first time since measurements began in 1958.

Since 2000, the world has pumped almost 100 billion tons of carbon into the atmosphere and this is about a quarter of all CO₂ emissions since 1750. At current rates, CO₂ levels will certainly double by mid-century. Climate scientists warn that any increase in average global temperatures beyond 2 degrees Celsius above preindustrial levels will lead to dangerous climate change, causing large-scale desertification, inundation of coastal cities, crop failure, widespread extinctions of flora and fauna, proliferation of disease, mass migration to higher and cooler ground, and possible social collapse. Furthermore, against the Enlightenment assumptions, scientists now understand that the earth's climate system has not evolved in a smooth linear fashion. Paleoclimatology has uncovered evidence of sudden shifts in the earth's climate regimes. Ice ages have stopped and started not in a matter of centuries, but decades. Sea levels have risen and fallen more rapidly than was once believed.

2.2. Political Action

It was in 1965 that US President's Advisory Committee panel warned that the greenhouse effect is a matter of "real concern". The first UN environment conference which was held in Stockholm in 1972 was particularly significant though climate change was not registered on the

agenda. The discussion was centred on issues such as chemical pollution, atomic bomb testing and whaling. The United Nations Environment Programme (Unep) was formed as a result. Then in 1987, Montreal Protocol agreed to restrict chemicals that damage the ozone layer. In 1988, Intergovernmental Panel on Climate Change (IPCC) was formed to collate and assess evidence on climate change. In 1989, in a speech to the UN, UK Prime Minister Margaret Thatcher observed that "We are seeing a vast increase in the amount of carbon dioxide reaching the atmosphere.. The result is that change in future is likely to be more fundamental and more widespread than anything we have known hitherto." She called for a global treaty on climate change. In 1990, IPCC produced First Assessment Report. The report concluded that temperatures had risen by 0.3-0.6C over the previous century. It also admitted that humanity's emissions were adding to the atmosphere's natural complement of greenhouse gases, and as a result of that the addition would be expected to result in warming. At the Earth Summit held in Rio de Janeiro, governments came to a consensus on the United Framework Convention on Climate Change. Its key objective was "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". Developed countries agreed to return their emissions to 1990 levels. IPCC Second Assessment Report for the period of 1992-95, concluded that the balance of evidence pointed to "a discernible human influence" on the Earth's climate. This has been called the first definitive statement that humans are responsible for climate change. Kyoto Protocol was agreed in 1997. Developed nations pledged to reduce emissions by an average of 5% by end of the period 2008-12, with wide variations on targets for individual countries. However, US Senate immediately declared it will not ratify the treaty. In 2001, President George W Bush removes the US from the Kyoto process. The IPCC Third Assessment Report of 2001, collected "new and stronger evidence" that humanity's emissions of greenhouse gases were the main cause of the warming seen in the second half of the 20th Century. In 2005 the Kyoto Protocol becomes international law for those countries still inside it. In 2005, UK Prime Minister Tony Blair selected climate change as a priority for his tenure as chair of the G8 and president of the EU. The IPCC's Fourth Assessment Report in 2007 concluded that it is more than 90% likely that humanity's emissions of greenhouse gases are responsible for modern-day climate change. The IPCC and former US vice-president Al Gore received the Nobel Peace Prize in 2007 "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change". At UN negotiations in Bali in 2007, governments agreed that the two-year "Bali roadmap" would be aimed at hammering out a new global treaty by the end of 2009. In 2008, two months before taking office as the US president Barack Obama pledged to "engage vigorously" with the rest of the world on climate change. It was reported in 2009 that China had overtaken the US as the world's biggest greenhouse gas emitter - although the US remained well ahead on a per-capita basis. In 2009, Computer hackers download a huge tranche of emails from a server at the University of East Anglia's Climatic Research Unit and release some on the internet, leading to the "ClimateGate" affair. In 2009, 192 governments convened for the UN climate summit in Copenhagen with expectations of a new global agreement. However, they left with a controversial political declaration, the Copenhagen Accord. In 2010, developed countries begin contributing to a \$30bn, three-year deal on "Fast Start Finance" to help countries to "green"

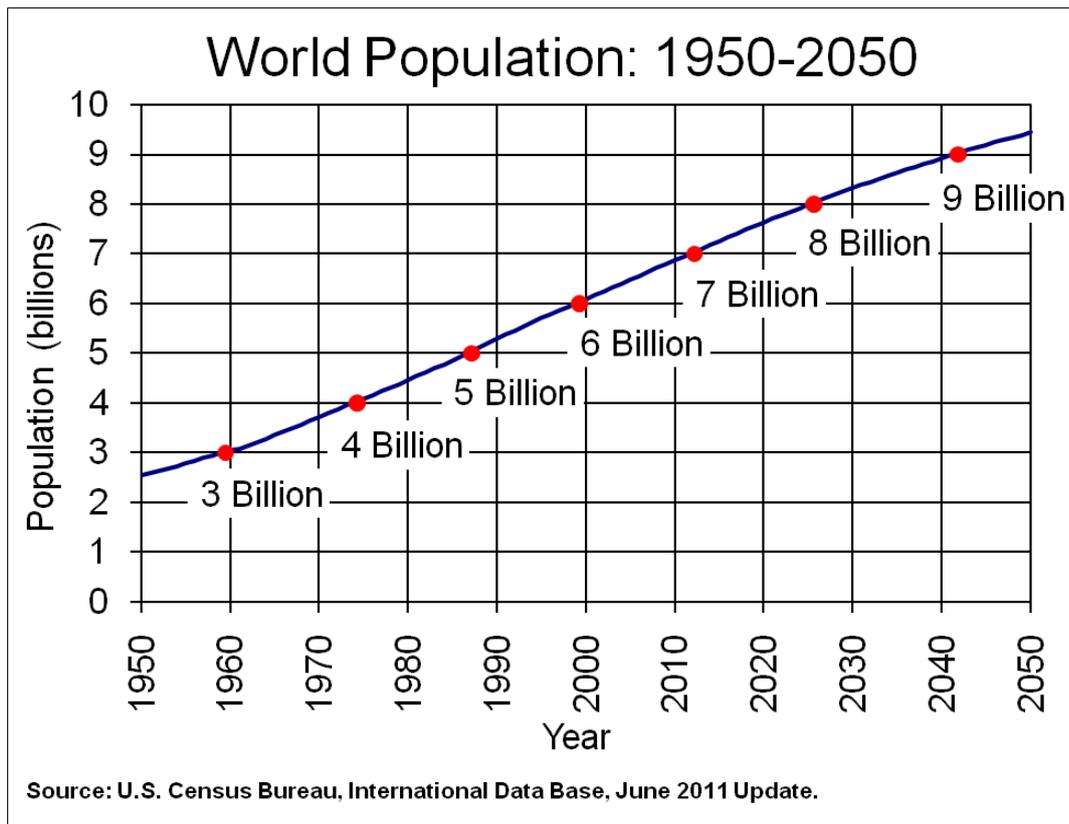
their economies and adapt to climate impacts. In the same year there were a series of reviews into "ClimateGate" and the IPCC intervened to ask for more openness, clearing the scientists of malpractice. Also the UN summit in Mexico ended with agreements on a number of issues. The first part of the IPCC's fifth assessment report in 2013 confirmed that scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950. The species which caused the climate crisis will be the one most affected by it.

The UN's Intergovernmental Panel on Climate Change entreats developed countries like the United States to cut emissions 25 percent to 40 percent below 1990 levels by 2020 and thereafter make precipitous cuts to 90 percent below 1990 levels by 2050. This would require global targets of 10 percent reductions in emissions per annum, starting now. However, those sorts of emissions reductions have only occurred during economic depressions. For instance, Russia's near total economic collapse in the early 1990s saw a 37 percent decrease in CO₂ emissions from 1990 to 1995. The political implications of all this may need a more comprehensive discussion whether these short-term, realistic climate politics are reformist politics or conceive them as part of a longer-term anti-capitalist project of totally economic re-organization,

2.3. Population Rise

The world population was one billion in 1800. In the span of a hundred and thirty years human population got raised to two billion in 1930. By 1960, after barely thirty years the population rise reached three billion. Human population count reached four billion in 1975. The pace of next milestone was much quicker when the population count reached five billion in 1987, six billion in 1999 and seven billion in 2011.

In the population statistics of the past half century the world's population has more than doubled, from 3 billion people to now more than 7 billion.



The largest single threat to the ecology and biodiversity of the planet in the decades to come will be global climate disruption due to the build-up of human-generated greenhouse gases in the atmosphere. People around the world are beginning to address the problem by reducing their carbon footprint through less consumption and better technology. But unsustainable human population growth can overwhelm those efforts, leading us to conclude that we not only need smaller footprints, but fewer feet.

Paul Murtaugh's study of the relationship between population growth and global warming warned that: "In discussions about climate change, we tend to focus on the carbon emissions of an individual over his or her lifetime. Those are important issues and it's essential that they should be considered. But an added challenge facing us is continuing population growth and increasing global consumption of resources. . . . Future growth amplifies the consequences of people's reproductive choices today, the same way that compound interest amplifies a bank balance." He asked if the individual environmental footprint over a twenty year period shrinks by 20% but there are 30% more people what has been gained? Nothing, you lose, or the Earth loses by 10%. The size of the carbon legacy is closely tied to consumption patterns. Under current conditions, a child born in the United States will be responsible for almost seven times the carbon emissions of a child born in China and 168 times the impact of a child born in Bangladesh.

3. Ghosh's Reading of the History of Climate Crisis

In Part II of *The Great Derangement*, Ghosh begins the discussion with the key sentence: "In accounts of history of the present climate crisis, capitalism is very often the pivot on which the narrative turns"(117). Some of the pioneering thinkers who observed certain conflict between capitalism and non-human nature were Karl Marx and Friedrich Engels. Examining the small-scale local problem of relations between town and country, expressed simultaneously as urban pollution and rural soil depletion, Marx emphasized in *Capital* that the disruption of the soil cycle in industrialized capitalist agriculture constituted nothing less than "a rift" in the metabolic relation between human beings and nature. He wrote:

Capitalist production collects the population together in great centres, and causes the urban population to achieve an ever-greater preponderance. This has two results. On the one hand it concentrates the historical motive force of society; on the other hand, it disturbs the metabolic interaction between man and the earth, i.e. it prevents the return to the soil of its constituent elements consumed by man in the form of food and clothing; hence it hinders the operation of the eternal natural condition for the lasting fertility of the soil.... But by destroying the circumstances surrounding this metabolism...it compels its systematic restoration as a regulative law of social production, and in a form adequate to the full development of the human race.... All progress in capitalist agriculture is a progress in the art, not only of robbing the worker, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is progress towards ruining the more long-lasting sources of that fertility.... Capitalist production, therefore, only develops the technique and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth—the soil and the worker. [Marx 637–38.]

And as with "soil robbing," so too concentrations of atmospheric CO₂: the natural systems are out of sync; their elements are being rearranged and redistributed, ending up as garbage and pollution. Christian Parenti, the author of *Tropic of Chaos: Climate Change and the New Geography of Violence* (2011) says, "Civilization is in crisis, though the effects are not yet fully felt. The metabolism of the world economy is fundamentally out of synch with that of nature. And that is a mortal threat to both". The guiding idea is what Parenti calls the "the catastrophic convergence." By this he means something more geographically and historically targeted than a coming climate-triggered global war and aggression. Paranti in his book speaks not only about the loss of island nations, biodiversity and glaciers but also about new era of conflict, chaos and violence.

It is true that capitalism is incapable of accommodating itself to the limits of the natural world. Although it has not overcome the fundamental conflict between its infinite growth potential and

the finite parameters of the planet's pollution sinks, it has, in the past, addressed *specific* environmental crises. It is quite delusional to believe that the existing economic system must be totally transformed before we can deal with the impending climate crisis. If climate crisis is allowed to augment the many progressive visions born of the Enlightenment will be swallowed up catastrophic climatic events. Naomi Klein the author of *This Changes Everything* (2015) is right in identifying the current dominant model of capitalism as one of the principal drivers of climate change. She identifies a conflict between the reigning neoliberal ideology and an alternative worldview and insists that we need to think on a paradigm shift "embedded in interdependence rather than hyperindividualism, reciprocity rather than dominance, and cooperation rather than hierarchy." Ghosh, however believes that this narrative often overlooks an aspect to global warming that may be considered to have equal importance: empire and imperialism. Though most agree that capitalism and empire are the dual aspects of the same reality, their counter directional imperatives in relation to climate crisis have often produced counter- intuitive effects.

3.1. Capitalism and Empire

The issue of conflicting positions of capitalism and empire with reference to a political-economic system in China is wonderfully brought out by Michel Aglietta and Guo Bai in *China's Development: Capitalism and Empire*. In China, some form of capitalism has a grip on the key to progress, but that form is still a matter of the complex play of influences that is the legacy of thousands of years of Chinese cultural tradition. On the one side the energetic entrepreneurship that has made China the 'workshop of the world', and on the other side the government considers its duty to retain control, with moral imperatives. A parallel case is also observable when we analyse climate change. When we study the climate crisis of Asia through the prism of the empire, we recognise two related reasons for the same. The first is Asia is conceptually critical to every aspect of global warming; the second is that discourse on global warming has largely remained Eurocentric. The Report of the CSIS Asian Regionalism Initiative entitled, "Asia's Response to Climate Change and Natural Disasters Implications for an Evolving Regional Architecture" states, "While climate change is generally acknowledged as a threat to the region, Asia as a whole has not responded forcefully or in unity to this challenge. Many governments do not see this threat as urgent or of high priority, given pressing and often competing demands for sustaining livelihood and economic growth, especially among the more populous developing countries" (Wang 2010.) However, we cannot deny that there is increasing awareness of the potentially catastrophic risks associated with climate change, particularly among those affected. This calls for a detailed discussion on Asia's centrality to the climate crisis.

3.2 Asia's Centrality to the Climate Crisis.

Asia as a region has suffered terribly from natural disasters of all forms. The human toll alone from the four major disasters since 2004 described has exceeded half a million dead, with countless homes and families destroyed, not to mention the tens of billions of dollars in economic damage. Asia's centrality to global warming rests on the fact of the vulnerability of the

great majority of potential victims of climatic changes in Asia. For instance, some of the world's worst disasters have occurred in Bengal Delta, owing to the density of its population. We also know that delta regions of Asia are subsiding much faster than the oceans are rising partly due to geographical processes and partly to human activities. The rising sea levels could result in the displacement of 50 million people in India and 70 million in Bangladesh. These and many other brute facts displayed by many studies and quoted by Ghosh in the book point to "the fact that no strategy can work globally unless it works in Asia and is adopted by ...Asians. Yet ... conditions that are peculiar to mainland Asia are often absent from discussion" (122).

Besides the vulnerability of Asia's populations, the Asian continent has also played a significant role in setting in motion certain chain of consequences that is driving the present cycle of climatic change. The climate crisis was precipitated by mainland Asia's embrace of the dominant mechanisms of the world economy. We are aware of the rapid and expanding industrialisation in Asia's most populous nations brought a period of sustained economic expansion in the late 1980s. But this acceleration dramatically shortened the time available to recognize and adapt to the consequences that such acceleration naturally led to. It is obvious that this has brought the climate crisis to a head. By blindly mimicking the modernity of the West, the Asian countries have blunderingly engendered certain patterns of life that can only be implemented in small minority of world's populations. These patterns of living just cannot be adopted by every human being. Asia thus played a critical part in its dual role as protagonist and victim in the unfolding of the 'Great Derangement': " It is Asia, then, that has torn the mask from the phantom that lured it on the stage of the Great Derangement, but only to recoil in horror at its own handiwork; its shock is such that it dare not even name what it has beheld - for having entered the stage, it is trapped, like everyone else. All it can say to the chorus that is waiting to receive it is 'But you promised... and we believed you'." (125)

3.3. Dissemination of Thought and Technology, and their Impact on Climate Crisis

In the history of global warming during the nineteenth and the twentieth centuries, the major players were the carbon-intensive economies of the West when their gargantuan consumption pumped greenhouse gases into the atmosphere at accelerating rates. This had a complicated history. Most populous countries of Asia were slow to enter the carbon economy because technology requisite to enter the group was inaccessible to most countries. Hence the world was divided by vast gaps in technology.

But this was not the case with the populations of the 'old world'. For millennia, trade connections ensured dissemination of thought and technology over long distances. Most of the non-Western influences went unacknowledged in Europe. For instance, a continuous cross-pollination of ideas that occurred in Mathematics and also in philosophy were transmitted to Europe through traders and Christian missionaries. In an undeniable fact the Kerala School of Mathematics anticipated the work of Gregory, Newton and Leibniz by at least 250 years. There are also striking similarities between Nava-Nyaya school of Philosophy in Bengal and early modern philosophers in Europe. Hence using the terminology of the historian Sanjay Subrahmanyam, Ghosh asserts that "modernity was 'global and conjectural phenomenon, with many iterations arising almost simultaneously in different parts of the world" (129). However this fact was obscured by the Western modernity's insistence on its own uniqueness. In a similar manner, Japan also insisted that it had its own unique variant of modernity. Thus it becomes

apparent that early modern era nurtured 'multiple modernities'. Any tangible aspect of modernity can only be understood within the framework of multiple modernities.

3.4. History of Fossil Fuels

Similarly the use of fossil fuels has long non-Western history. This history provides some revealing insights into the emergent modernities of the period. By the eleventh century, shortage of wood in the northern Jiangsu province of China led to the discovery of coal in the region. The Chinese poet Su Dongpo wrote a poem on the fossil fuel in 1087 CE. But China did not make the transition to a large-scale coal economy before Britain possibly because China's coal reserves, unlike those of Britain were not in easily accessible locations. Yenangyaung in Burma had oil from natural springs, sinks and hand-dug pits even in the ninth century yet most oil historians give the date 28 August 1859 as the commencement of modern oil industry when Colonel Edwin L. Drake organised the first successful drilling of an oil well at Oil Creek in Pennsylvania. These are examples of Western Modernity's intellectual commitment to the appropriation of its supposed singularity. The same sort of principle was adopted by the emerging fossil-fuel economies of the West. They required that people elsewhere be prevented from developing coal-based energy system of their own. For instance, the Wadia family and their indigenous shipbuilding which dated back to mid-eighteenth century could compete with most famous shipyards of Europe. But the Registry Act passed by the British Parliament placed tight restrictions on Indian ships and sailors. Thus the coal economy essentially depended on not being imitated. India's ruling power, a global pioneer of the carbon economy ensured that carbon economy could not take hold of India at any point of time. What had failed to give birth to the carbon economy was not lack of industriousness but the absence of state patronage that left the local industrialists in the lurch.

3.5. The Hegemonic Presence of European Powers

The determining factor that gave carbon economy its decisive shape was that the major European powers had established a hegemonic presence in much of Asia and Africa during the late eighteenth and early nineteenth centuries when the technology of steam was in its nascence. Armoured steamships using fossil fuels played decisive role in the Opium War of 1839-42. Carbon emissions from the very beginning were closely related to power in all its aspects. It was the first important conflict to be fought in the name of free trade and unfettered markets. The War had established that capitalist trade and industry cannot thrive without access to military and political power. It had also taught that state interventions are crucial in the development of trade and industry. British imperial forces perfectly understood that maintenance of military dominance ought to be the primary imperative of empire. After the colonial powers retreated in the decades following the Second World War, the acceleration of mainland economies followed. In a sense the imperialism we may say that imperialism delayed the onset of the climate crisis. This fact in no way diminishes the force of the argument for global justice regarding greenhouse emissions. This is silently implied in the positions that India, China and many other nations have taken in global climate negotiations: the argument about fairness in relation to per capita emissions. This is to imply that "... the poor nations of the world are not poor because they were indolent... their poverty is itself an effect of the inequalities created by carbon economy; it is the result of systems that were set up by brute force to ensure that poor nations remained always at a disadvantage in terms of both wealth and power." (148)

3.6. On the Canon of Distributive Justice

It is in this context that arguments on the canon of distributive justice are placed. The fruits of carbon economy constitute wealth in the privileged nations at the expense the underprivileged. The poor of the global south have historically been deprived of this wealth. Hence they are entitled to a greater share of the rewards of that economy. This will seem to be another act of the Great Derangement that the author speaks about. It is because our lives and our choices are enframed in a pattern of history, the path ahead is towards our own self-annihilation. The twin ways in which money flows are on the one hand towards short-term gain and on the other towards over-exploitation of unregulated common resources. These tendencies are the signs of humanity's present derangement heading towards their inevitable doom.

3.7. Indigenous Resistance

This model of economy was also met with powerful indigenous resistances of many different kinds. In Asia, the resistance was articulated and championed by figures of extraordinary moral and political authority such as Mahatma Gandhi. Ghosh quoting Mahatma's best-known pronouncements on industrial capitalism says that Gandhi like many others knew "that universalist premise of industrial civilization was a hoax; that a consumerist mode of existence, if adopted by sufficient number of people, would quickly become unsustainable and would lead, literally, to the devouring of the planet." (150) Gandhi had renounced in practice the kind of power and affluence that industrialized civilization conferred. Similarly in China Industrialism and consumerism faced powerful resistances from within the Taoist, Confucian and Buddhist traditions. However, resistance capitalist modernity in both countries was given up through a range of political and cultural movements. Today both India and China are blamed for participating in climate crisis. Yet long before climate scientists brought in the data to say that industrial civilization would collapse if adopted by the majority of the earth's nations, a significant number of people in these two nations have succeeded in retarding the wholesale adoption of the consumerist model of economy.

Thus the demand for the reparation of climate change is founded on unshakable grounds, historically and ethically. The climate crisis cannot be thought of as a problem created by an utterly distant other. The human population had reached seven billion in 2011 and the first part of the IPCC's fifth assessment report (2013) says scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950s (Black). Anthropogenic climate change is the unintended consequence of the very existence of human beings as a species. It is the product of the totality of human actions over time. Concluding the second part of the book most aptly, Ghosh says, "The climate events of this era... are distillations of all of human history: they express the entirety of our being over time" (155).

4. Conclusion

I believe there are three points at which there must be some social involvement in matters concerning climate crisis: social need, social resources, and a sympathetic social ethos. In the absence of these factors it is quite unlikely that any collective action would be widely adopted or be successful. The sense of social need must be strongly felt, or governments will not be prepared to devote resources to tackle climate crisis. In modern societies, needs have been

generated by media using persuasion techniques.. Media has significant role and duty to make people conscious of various aspects of climate crisis and to instil in them a need to take up collective projects and to make governments move to act quickly before it is too late. Social resources are similarly an indispensable prerequisite to deal successfully in times of crisis. Many collective projects have foundered because the social resources vital for their realization—the capital, materials, and skilled personnel—were not sufficiently available. The resource of capital involves directing the available wealth into channels that strive to make meaningful contribution. The resource of skilled personnel implies the presence of technicians capable of constructing new artefacts and devising novel processes. A society, in short, has to be well primed with suitable resources in order to sustain the concerted effort for a change in the way we handle our planet and everything in it. A sympathetic social ethos implies an environment receptive to new ideas, one in which the dominant intergovernmental and intragovernmental groups are prepared to consider necessary cultivation of new and productive ideas on the rectification of climate crisis. It also implies that such groups encourage the inventive breeders of such ideas. In any case, the existence of socially important groups willing to support the execution of ideas has always been a crucial factor in the history of any advancement in any areas under consideration.

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