

Industrial revolution as the harbinger of climate crisis – The Anthropocene epoch in Edasseri Govindan Nair’s “Kuttipuram Palam”

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Abstract

This article examines the role industrial revolution plays in the epoch of Anthropocene by analysing the technological, cultural and geological counterparts by grafting the future as past memories in poetic form. It investigates the way the poem, “Kuttipuram Palam” (Kuttipuram Bridge) by Edasseri Govindan Nair guide us to rewrite, and renegotiate, how a bridge emerges as a level III technology and rework the relationship between level I, level II and level III technologies. The poem demonstrates the destructive power; a level I technology holds in the geological scale as a harbinger of Anthropocene. Edasseri through his poem “Kuttipuram Palam”, challenge the readers to interrogate their understanding of simple technologies in everyday life as a beginning of Anthropocene in a geological scale as opposed to the impact of the very technology’s implication in the linear time. Here the “Kuttipuram Palam” advice the readers to revise their perspective and asks to retrieve the Anthropocene nature of the seemingly innocent and simpler technologies of past. The “Kuttipuram Palam” explores the past of ‘Kuttipuram’ and testify to its ongoing effects as the Bridge (palam) is built across Bharathapuzha, the river and envisages the Anthropocene nature of the technologically transformed future.

Keywords: *Technology, Nature, Bridge, Anthropocene, Climate Change*

Research Questions

Does the Industrial Revolution act as the harbinger of the Anthropocene epoch?

Objectives

1. The article aims to analyse the role of the Industrial Revolution in the Anthropocene epoch, taking “bridge” as a symbol of technological effervescence.

2. Furthermore, the study also aims to renegotiate the impact of technological symbols in temporal, cultural, and geological aspects.
3. Moreover, the research paper intends to examine how smaller technologies, used in everyday life have a larger role to play in the climate crisis bringing out the Anthropocene nature of this 'everyday tech'.

Theoretical Framework

The article aims to rework the impact of the Industrial Revolution on environmental degradation and climate change from the perspective of Anthropocene studies by Timothy Clark in his book *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept*. Timothy Clark characterizes Anthropocene epoch as an indisputable certitude that human activities has inevitably played a decisive and irrevocable role in changing the ecology and geology of the Earth. According to Clark rampant human actions, are so profound that they challenge the planet's natural phenomena and is driving the whole of Earth into a "Planetary terra incognita" (Clark 1)

The Anthropocene framework will be supplemented with the critical posthumanist framework proposed by Rosi Braidotti in her article, "A Theoretical Framework for the Critical Posthumanities". Rosi Braidotti's characterizes her critical posthumanist framework as a convergence of posthumanism and post-anthropocentrism. Posthumanism critiques the centrality of man and the idealisation of the man as the "Universal measure" (Braidotti 2) of all things, whereas post-anthropocentrism comments on the human exclusivity and the subsequent notion of species hierarchy.

Literature Review

The article "'Kuttipuram Palam" Purushadyapathya chihnam" ("Kuttipuram Palam" - A symbol of Patriarchy") (2004) offers an eco-feminist reading of the poem but the article fails to examine several other aspects of the poem. In the Research article titled "Influence of Nature on Human in The Ecological Vision in Edasserri's Poetry" (2021) by Dr.K.Mini, "Kuttipuram Palam" is discussed alongside several poems of Edasserri. This article provides an anthropocentric analysis of Edasserri's poetry. The present article presents a non-anthropocentric analysis of the poem, "Kuttipuram Palam" using the theoretical frameworks of Anthropocene and Posthumanism. Several News articles varying from print, broadcast and digital media have conducted studies on the depletion of the river Bharathapuzha. Different from a reporter's perspective of presenting the truth as seen now, this article investigates and dig into the past, and looks for the reason for the Anthropocene epoch, that has resulted in the river's apparently significant decline.

Introduction

Climate change gives us no choice but to discuss and to do so from multiple perspectives, bringing in several variables. As Menga and Davies put it, we are fighting against an inevitable and imminent future that has already happened on a geographical scale, as a result of what we have done on a linear scale, and Anthropocene discusses the same. Hence my objective is to bring in this idea and discuss it from an Indian perspective. "Kuttipuram Palam" written in 1954 is a prime example of the Anthropocene epoch as the poem features the fears of the poet for the future. Seventy plus years after the poet expressed his anxiety, the inhabitants of the planet behold the Anthropocene epoch manifesting, proving that the poet's fears for the future has

come true, made apparent in the news paper articles and documentaries. The analysis also looks at the posthuman aspect of the poem by characterizing the poet as a spectator and the river, bridge and collapsing ecosystems placed in the centre.

About “Kuttipuram Palam”

The Text

“Kuttipuram Palam” is a poem by Edasseri Govindan Nair, a prominent Malayalam poet First Published in Mathrubhoomi Weekly, on February 21, 1954. The main theme of the poem is the construction of a bridge named Kuttipuram palam, (Kuttipuram bridge) above the river Bharathapuzha (also mentioned as Nila and Perar in the article). Seventy-one Years later, the poem brings out the first prophecies of Anthropocene, justifying its role as a geological epoch.

The Geography

Kuttipuram palam aka the Kuttipuram bridge is one of the major stand points of industrial revolution as it was built across the second longest river in Kerala. As one of the largest and oldest bridges in Kerala, the bridge is a part of National Highway (NH 17, during its time of construction, later NH 66). In addition to linking the Malabar region to the Travancore-cochin region, the bridge unites Kuttipuram town with Thavanur-Ponnani regions of the Malappuram District.

Analysis

Anthropocene in the “Kuttipuram Palam”

Finished construction in the year 1953, the Kuttipuram palam (Kuttipuram bridge) is one of the oldest bridges over the river Bharathapuzha. The bridge as a part of National Highway (NH 17), gave a huge boost to the transportation needs that came with urbanization. Written in the year 1954, the poem encapsulates Edasseri's feelings as he walks over the bridge for the first time. As an age-old poem, the text brings in predictions for an unprecedented future, and in certain cases bordering on hyperbolic. Unfortunately, seventy-one years after the publication of the poem, many of these predictions runs with the clarity of truth. The poem stays true to the prediction of Anthropocene epoch as Menga and Davies states, “as far as geological time is concerned, this mass extinction has already happened; it just hasn’t happened yet.” (Menga & Davies 6)

As the name of the Poem indicates, “Kuttipuram Palam” or Kuttipuram Bridge is prophesied by the poet as a symbol of the Anthropocene. The poem's first four lines talk about ecology in opposition to three different factors. The poet simultaneously arranges economy, technology, and humanity side by side with a dwindling river, - nature. This brilliant cohesion and scepticism, of the three factors and their relation to the environment in a poem written in 1954 is an exemplary example of the thoughts on the epoch of Anthropocene even before the introduction of the concept. As Edasseri foretells, despite the mounting climate crisis and ecological destruction, humanity has constantly chosen to place economy and technology above nature. Edasseri’s repetition of these lines twice indicates his anxiety for the future of human and their activities in the environment.

In the first four lines of the poem, Edasseri paints a picture of Anthropocene as we know of. The first line of the poem talks about the money spend on the construction. In the next line, the poet

continues to talk about the newly constructed bridge, a symbol of industrial revolution, for which the money was spent, and in the third line he talks about the man who is standing on this bridge that is a symbol of both technological and financial prosperity. Finally in the fourth line, the poet talks about the "dwindling river", called by many names. Here, Edasseri paints a picture of economy towering over technology, and the human proudly utilizing these two as he stands above the river. These lines indicate that as a part of urbanization, we have put economy, technological progress and the human needs above the nature and its sustainability as a whole. The repetition of these four lines once again emphasises the poet's desire to communicate with his readers on the idea that human actions, in the advent of progress, is changing the face of earth and these changes are often irrevocable.

The poet further talks about the games which he played as a child, - Poothamkole (Edasseri), in which a stick is hidden in the sand and the playmates is to find out. The child's play is also the adult's play, when it comes to the depleting river. The same sand is mined without any further thought into what will happen to the river. The poet here inadvertently depicts the image of sand mining, corroborating it with the event of children playing in the sand. In the 2000s, two decades after the warnings on sand mining and the fear of the river dying, Edasseri's predictions has become the truth. Illegal and legal sand mining is still happening in the river, with no thoughts for the future of the human and non-human who depends on the river Perar.

Analysing the poem, one could see Edasseri's memory of the river, which flows vigorously in the rainy seasons of Kerala that tends to start from late May and happens till Mid-October. The river's flow in the rainy season has collapsed several temporary bridges built above it and has capsized many boats. The strong bridge according to Edasseri will finally put a stop to the grandeur appearance of the river as expressed by Edasseri in his lines - "Ini nee paalathil naatanoozhum" (Edasseri) - (now you will, / 'crawl' to flow below this bridge! (Edasseri and Jayasree)). Seventy-one years after this poem was written, the river has started to trickle down under the bridge waning each year, save for the 2018 floods.

Edasseri's confession that an unknown pain haunts his conscience, - "Enkilum marthiya vijayathinmel/ en kazhaloonni nivarnnu nilke" (Edasseri)- as he stands "on the glory of victory of mankind" (Edasseri and Jayasree) is the reality of human activities unprecedented effect on the nature despite them being seemingly harmless. As Timothy Clark states, Human action "have become so pervasive and profound" and they challenge the nature's great forces (Clark 1). Edasseri perceives the changing tunes of the world as he gazes into the bridge constructed over the river. He also witnesses the changing landscapes, and the destruction of the village ecosystem, that is slowly dwindling as alarmingly increasing constructions encroach the green space. Edasseri also perceives the death of various flowering and fruit trees, hills and valleys, the darkness of night and various other things that are integral to the survival and balance of the nature. Edasseri wonders and ultimately prophesies that despite the inevitable nature of the various ecosystems in the environment, they are either wiped out or forced to the point of extinction as a result of human actions. The poet predicts a future where, - "Alarinmel vazhcha Thudangugayay/silayum kariyum cementurukkum" (Edasseri) - "Granite, coal, cement and steel/ start their reign over tender buds." (Edasseri and Jayasree). In the poem, the construction of bridge and consecutive sand mining is the activity that is annihilating several ecosystems and disintegrating multiple food chains. The bridge here stands as the agent of industrial revolution and subsequent urbanization that is changing the earth into a "Planetary terra Incognita" (Clark 1) in the long run.

Edasseri also hints at the growing light, and sound pollution that takes away the mysterious nature of night, and at the same time causes inevitable and unprecedented damages to various nocturnal species. Here again the sound and light pollution in 1954 is much less than that in 2000s. Yet despite studies that prove their effects on humans and non-humans, the activity that causes the pollution continues. Edasseri also beholds the levelling of hills by machines, hills, that provides home to various species and sustain several ecosystems, hills, that retain water and preserve the nature, are destroyed in the name of progress, and subsequent comfort that it offers to the human race.

Anthropocene enunciates that human actions cause irrevocable damage to the environment, and unlike the Holocene age, the consequences of the activities often does not manifest in a linear scale despite its effects already reshaping the planet's geology. The final lines of the poem "Kuttipuram Palam" are a testimony to this understanding of Anthropocene epoch. The poet in his agony of losing the environment he is close to pose the question, - "Amba Perare nee maripoomo/ aakulayaamorazhukkuchaalay?" (Edasseri)- "will you too mother 'Perar', change/into a canal of grief carrying sewage?" (Edasseri and Jayasree). Several newspapers report as discussed in the article stand witness to the line slowly becoming a reality. The river Nila in summer is mostly sand beds and water trickling down the bridge as sad memory of the once boisterous river.

Anthropocene and Sand Mining

Construction is one of the major themes of the Poem. The bridge symbolizes construction, sand mining, and the Industrial Revolution. The Kuttipuram bridge, which was constructed in 1953 is, for the poet the victory of humanity, using technology, over nature. Edasseri further hints at the changing landscapes such as vast paddy fields, groves, fruit-bearing trees, hills, valleys, an assortment of bloomed flowers and so on that are lost as part of constructions, and technological advancements. Edasseri perceives these advancements that are part of the Industrial Revolution with suspicion. He constantly brings together the symbols of technology and construction in contrast with that of putrescent nature. The nature in Edasseri's eyes is perpetually changing, and he predicts the Anthropocene nature of these anthropogenic enhancements.

The poem juxtaposes a shrinking river below the newly constructed bridge. The bridge just like its location reigns over river Perar controlling its fate from a higher place. The bridge gains its meaning and purpose by letting humans cross over the Bharathapuzha, which neither the boats nor the garuda was able to cross (Edasseri). Interestingly, there is one thing that seamlessly connects as well as contrasts both the river and the bridge - sand. Sand and rivers are inseparable. So is using sand as an ingredient in concrete for bridge construction.

The poet laments over the disappearing nature as construction takes hold of the greenery. Sand, which is part of the nature, is imperative for the riverbed. It also plays a huge role in protecting and sustaining the life of river ecosystem, as well as in water retention. Yet for the advancement of technology and amplification of economic benefits and human development, the sand is mined and a large chunk of it goes as raw material into construction. As defined by Rentier and Cammeraat, Indiscriminate river-sand mining directly influences the shape of the riverbed. Accordingly, sand mining often causes secondary and accumulated effects on the physical characteristics and the dynamic equilibrium of the erosion as well as sedimentation of a river (Rentier & Cammeraat 3). The dying river, caused by rampant sand mining is a victim of the

very bridge constructed using the sand, mined from rivers as well as the proof to mankind's inability to predict the Anthropocene epoch and to take measures to guard against the impending climate crisis and depletion of natural resources at large.

In 1957, the process of sand mining was legalized using the Mines and Minerals (Development and Regulation) Act, "Notwithstanding anything contained in sections 10B and 11, an exploration licence may be granted in any area by the State Government for the purpose of undertaking reconnaissance or prospecting operations or both in respect of any mineral specified in the Seventh Schedule" (The Gazette of India Extraordinary 3), and this led to a huge increase in sand mining, both legal and illegal during the mid 1990's. Despite several environmental studies and scientific articles that foretell, retell, and reaffirm the inevitable environmental problems that will occur as a part of sand mining, the mining in Nila continues.

Edasseri ties the 'Anthimahakaalan' hills with Bharathapuzha and weaves the narrative of nature being played in the hands of technology. This brings the imagery of man, in his arrogance of technological development and pride in economic progression leaving nature behind and playing with it as he wishes, despite overlooking a distant future where the profiteering of the environment will cause catastrophic elements to life on earth. The poem incessantly recounts Edasseri's anxiety over a diminishing environment, and warning to future generations as the changes brought in the geography, - the river, the hills, the fields - are already changing the world around us. As Edasseri mourns over the loss of the nature around him that was lost as a part of technological advancement and mounting construction, it serves as a warning gesture to the human beings who are immersed in their pride of the same. Here he becomes both the proud human and the prophet of the future. Yet, the focus on economic development made humans, focus on pride and neglect his prophesy.

Edasseri recollects the proud river, in its glory that put humanity and non-humans in awe. Despite its past glory, Edasseri reaffirms that the river will be anchored to the bridge in an act of human triumph over the Natural world. As a symbol of construction and sand mining, the role of the bridge in destroying the ecology is brought to the forefront here. The poet contrasts human pride, to the river's surrender to the bridge, construction, sand mining, and finally to the Industrial Revolution as the bridge, construction, and sand mining owes their roots to it. The Poet uses a method of bringing together various contrasting factors, which play a major role in the epoch of Anthropocene, and renegotiates the role of new technologies, construction, and the industrial revolution in the impending climate crisis. The poem was published in 1954 before sand mining was made legal, before the studies on the impact of sand mining came, before the encroachment of the riverbed happened, before the river turned into a small drain, nevertheless, the predictions were fulfilled in a far future. The poem successfully captured the anxiety of the former generations, and the frailty of the current generations, caused when the land was given a price.

The present scenario

A glimpse of Edasseri's Perar in the Hindu news report from July 11, 2016, Thiruvananthapuram Edition, titled "Sand-Mining Sound the Death Knell for the Bharathapuzha", indicates that sixty two years after the poem was published, not only has the illegal sand mining continues but it has also already affected the human and non-human population that depends on the river for their lives and livelihood. Moreover, humans have failed Bharathapuzha in more ways than one.

On top of the illegal sand mining, the dried-up riverbed has been used by the locals for both agriculture and construction, which results in floods as the river reclaims its path. (G Prabhakaran)

Human activities have constantly caused implications in the ways of nature. The simultaneous exploitation of nature alongside constant alienation is one of the major reasons for the current Anthropocene disaster we are facing. Yet various scientific studies and artistic concerns are constantly swallowed up in the economic banter, race to development, and human pride. The Anthropocene disaster at a planetary level is constantly debated as a question of whether it exists or not. Unfortunately, climate change is considered debatable. 62 years after the poem was written, the geographical epoch of the Anthropocene comes true as the river turns into a drain as proved in the Hindu News report on November 01, 2016, titled "Bharathapuzha is dry much ahead of summer" featuring a picture of the riverbed without water.

Anthropocene and the everyday technology

Bridge as a Level 1 Technology transcending into a Level 3 Technology

As outlined by Timothy Clark, Allenby and Sarewitz propose three varying levels of complexities in identifying different technologies. In the book, *The Techno-Human condition* (2011), they classify technologies as Level I, II, and III. Level I is classified as the crude traditional classification of technology as a basic tool, (Clark 6) whereas the Level II technology are part of a sophisticated network architecture that are mechanisms of social and technological control, with additional adherence to security, pricing systems, law and so on (6-7). Clark defines that Level III represents "complex emergent properties that defy our ability to model, predict or even understand them" (8).

Adhering to this classification Timothy Clark in his eco-criticism on the edge, Anthropocene as a threshold concept proposes the thought, that a transitional way to define Anthropocene is that several events and problems that are identified as Level I and Level II technologies are emerging as Level III technologies, equivalent to the Bridge in the poem. The Kuttipuram bridge as a means of transportation is a level I technology and as it plays a significant role in connecting various places on a socio-economic level, it transcends to Level II. The very bridge as it plays a huge role in changing landscapes and destroying ecosystems and disintegrating food chains, has exalted itself as a Level III technology. However more than often both Level I and Level II technologies are expected to be tackled using thoughts and resources conformed to their level. In Clark's words, "more and more events and problems are emerging at Level III, rendering obsolete modes of thought that are confined to Levels I and II" (Clark 9).

The bridge in its usability can be considered as a level I technology, as the main purpose of the bridge was to make transportation across the river possible, especially since the river tend to have violent fluctuations and several accidents in the rainy season. It was a method to make land transport over the river possible and reduce the distance of the journey as well as accidents. Nevertheless, bridge like several other technological advancements exceeded its expectations and played a major role in the economic growth of the surrounding regions as it made transportation easier, expanding into a Level II technology. Edasseri views the Kuttipuram bridge as a Level III technology as he sees the bridge bringing, social, economic, and geographical changes in just one year and the far future. He predicts the changing landscape of his village as the bridge brings new development and makes transportation easier. He sees the

loss of agriculture, and culture, as the Kuttipuram bridge connects the nearby villages to a wider world.

Posthuman Perspective of “Kuttipuram Palam”

“Kuttipuram Palam” by Edasseri Govindan Nair deals with two opposing factors, nature verses technology. The main focus of the poem is, as the name suggests, the bridge aka Kuttipuram palam in relation to the river, Bharathapuzha, over which the bridge was constructed. The poem constantly brings out a futuristic perspective of how the construction of the bridge is going to affect the river and the surrounding people. Simultaneously by juxtaposing nature and technology, Edasseri also reminds us that the process of urbanization and construction erased several non-human factors. As the discussions on the sixth mass extinctions comes into effect, it is important to note that the earth has gone through a minimum of five mass extinction events as we know of, and several species that are alive now on the earth, has lived through all the five mass extinction events. Mass extinctions affect the predominant species and in the sixth mass extinction, the predominant species is the anthropos. (Parham xiv)

Edasseri foretells the loss of several non-human factors, and species that would face extinction level event in the construction of a bridge. He leads this perspective by portraying a dwindling river, Nila. Later on, he recalls the memory of the sand, the same sand which is being mined endlessly despite the slow death of the river and the change in river's path. The post subsequently remembers the birds such as Kingfisher, stork, and eagle that fed on fish. The poet further brings in his perspective of a losing innocence of village and its non-human inhabitants such as vast green fields, the flower and fruit trees, the hills and valleys, the night and its inhabitants. The non-human species and attributes that make the earth complete, retain the balance of the environment and sustenance of the existing food chains. All these factors combined, make the existence of life on earth possible.

The vast green fields that are often filled in for construction, causes the destruction of several ecosystems. The absence of a single species of bird that feeds on amphibians will destroy the food chains that have the bird or the fishes as the connection link. The flowering and fruit trees are not only home to several species but also have their own unique ecosystems. Moreover, they are inevitable for the storage of water, retention of topsoil, and for providing oxygen. Despite the importance of trees for the environment, they are being cut down for a small step towards urbanization under the pretext of making our lives more comfortable. The cost of this comfort is a question that needs to be answered in the long run, as the deforestation has caused large scale problems in the climate change scenario.

The urbanization and industrial revolution as a whole have brightened up our nights. As Edasseri mourns for the death of mysterious nights that used to be dark and hide secrets, it also insinuates that the bright nights have caused the endangering of several species. Several species of owl and bat have faced various issues as the nights brighten. It is affecting the circadian rhythm of human bodies. Yet our nights are only becoming brighter and the species that are part of it are either evolving or slowly disappearing. The dead cement and stones have already started their reign over the flowers -the essence the nature. The petrol that stood as the major symbol of Industrial revolution is not only causing pollution but also depleting the Earth's resources without a care for tomorrow and slowly converting the Holocene earth, engendering changes that are impossible to revert back leading the planet into the Anthropocene epoch.

The poet paints a poignant picture of the child of technology, playing with the once majestic 'Anthimahakaalan hills', (machinery that is used for levelling hills, likely a JCB), near the river for construction purposes. The hills are a huge source of water; they are also home for a huge number of species and a self-sustaining ecosystem. Yet as the poet witness the destruction of 'Anthimahakaalan hills', it brings into perspective, how the single act of construction has caused the annihilation of several species and the destruction of multiple ecosystems. Here, as Edasseri sees, human beings have forgotten that they are part and parcel of the ecosystem, and that there is always a tomorrow where the destruction of any number of species that balances life on earth could adversely affect the entire planetary ecosystem of which, the man is simply a small part and not a major one.

Conclusion

Written in 1954, the foreboding of the poet for the future comes true on a geological and temporal scale. The future of Nila, as a drain due to sand mining was foreseen by the poet, as he watched the construction of the bridge. Simultaneously, his anxieties concerning a future regarding the loss of biodiversity, deforestation, and destruction of the hill areas have all come to fruition. Assigning the bridge as a symbol of construction, technological enhancement, economy, and development, the poem foretells the geological epoch of the Anthropocene as the future generations experience it. The poem also plays a major role in affirming the role of the industrial revolution, as a harbinger of the climate crisis using the symbol of the Kuttippuram bridge.

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