



ISSN: 2990-7993(P)

Dhaulagiri Journal of Contemporary Issues

Vol 2, Issues 1

July, 2024

Page 116-125

DOI: <https://doi.org/10.3126/djci.v2i1.67467>

Published by: Research Management Committee,
Dhawalagiri Multiple Campus, Baglung
Home Page: <https://dmcjournal.edu.np/index.php/DWJCI>
NepJol Home Page: <https://www.nepjol.info/index.php/djci>

Revisiting the voices from the Margins: A Study of Subaltern Narrative in Amitav Ghosh's *The Calcutta Chromosome*

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Abstract

The Calcutta Chromosome by Amitav Ghosh delves into the subaltern narrative giving voice to marginalized people often overlooked in mainstream literature. The narrative draws on the themes of identity, power, and history through its characters and their experiences challenging traditional narratives and offers a unique perspective on the complexities of colonialism, science, and storytelling. The novel resurfaces the issues of defiance and resistance against the imperial power and its' hegemony as depicted by Ghosh through the characters like Murugan, Mangala and Laakhan against British scientist Roland Ross and his associates. In the juncture of scientific research about the Malaria in colonial India, Ronald Ross was assisted by the Indian people, however, their contribution remained excluded in colonial historiography which Ghosh's narrative stages to revisit the colonizer's discriminatory policy. Meantime, this study triggers on the voice of the voiceless to subvert the 'orientalism' in Westerners' historiography by staging the voice of the oppressed in the domain of subaltern studies envisaged by Spivak and others. In so doing, it valorises the voice the subalterns by constituting an academic discourse for their age-longed muffled silence.

Keywords: Alternative history, postcolonialism, resistance, subaltern studies, silence, voice

Article Information

Received: 8 May, 2024 **Reviewed:** 10 May 2024, - 18 May, 2024 **Revised:** 19 May, 2024- 25 May, 2024

Accepted: 3 June, 2024

Published: 30 June, 2024

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To Cite this Article:

Sharma, S.P. (2024). Revisiting the voices from the margins: A study of subaltern narrative in Amitav Ghosh's *the Calcutta Chromosome*. *Dhaulagiri Journal of Contemporary Issues*, 2 (1), 116-125.

<https://doi.org/10.3126/djci.v2i1.67467>



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Introduction

Amitav Ghosh, a famous Bengali Indian Author, his one of the most significant works '*The Calcutta Chromosome*' encompasses the idea of 'alternative' history which centres around the 'subaltern' people and of course a history of Ronald Ross, the famous doctor and Nobel prize winner for his innovative task about malaria transmission. The novel moves around the 'subaltern' people, their silence, and their snubbed history. The novel starts with the appearance of a character Antar who belongs to the most technologically advanced world and works with his advanced computer Ava. He is the protagonist who, with the help of Ava, is looking for one of his missing colleagues Murugan. Murugan is one of the most important characters, a voice of rationality. He does research on Ronald Ross and comes with a doubt about the untold history. According to Murugan and his research, Ronald Ross does not really discover the malaria transmission, but he is strongly manipulated by a "subaltern" group. The leader of that group is a woman Mangala and the other character, Laakhan who helps her. Murugan believes that these people are looking for "immortality". Farzana (2016) noted that "The narrative consists of three parts: by an omniscient narrator, by Murugan and by Sonali Das. Ghosh places science and counter-science, fiction and reality together and through such representation Ghosh provides an "alternative" history to the subaltern" (pp.-3). The novel follows the story of Antar, low-level employee who is obsessed with the mysterious disappearance of his colleague, Murugan, who was researching the life and work of Sir Ronald Ross, a British medical doctor, who won the Nobel prize in 1902 for his discovery that malaria is transmitted by mosquitoes.

Antar's investigation leads him to a mysterious book left behind by Murugan, which contains fragments of Ross's life and discoveries. Through the book, Antar learns about the existence of a secret society called the 'Calcutta Chromosome', which believes that Ross's Nobel Prize-winning research was based on the work of an obscure Indian scientist, Prabir Sengupta, who disappeared under suspicious circumstances in the 19th century. As Antar delves deeper into the mystery, he discovers a connection between Sengupta's research and a strange medical phenomenon known as "Chromosome 17". This chromosome seems to have the ability to transfer memories and consciousness between individuals, potentially leading to immortality.

The narrative weaves between Antar's contemporary investigation and historical vignettes, including the story of Sengupta's life and his encounters with figures like Ross and the enigmatic figure, Ronald Swanson. Swanson, a British colonial officer, becomes obsessed with Sengupta's research and is believed to have been involved in his disappearance. Through Antar's quest, the novel explores themes of colonialism, scientific discovery, and the search for identity and meaning. It blends elements of historical fact with speculative fiction, creating a rich and layered narrative that challenges the boundaries between past and present, reality and myth. Ultimately, Antar's journey leads him to confront the mysterious forces behind the Calcutta Chromosome and to grapple with the implications of its existence for humanity's understanding of history and consciousness. For subaltern people silence is the best diplomacy especially to overcome the oppression, domination, and power politics, hence, challenges the Western hegemony and knowledge thus, to "rewrite" the alternative history of subaltern. Set against the backdrop of the colonial and postcolonial periods in India, *The Calcutta Chromosome*, intricately weaves a narrative that challenges establish scientific knowledge and imperial authority providing the platform for subaltern voices, particularly those of Indian laboratory assistants and indigenous local practitioners, who subvert the redefined scientific discoveries attributed to Western scientists like Ronald Ross. By examining these elements, the present study seeks to understand how Amitav Ghosh critiques the colonial scientific enterprise and presents an alternative epistemology that foregrounds indigenous knowledge and the agency of subaltern figures and offers a nuanced understanding of history and epistemology within mainstream historiography.

Objectives

Subaltern historiography, a perspective that focuses on the marginalized and subordinated group's perspectives in history. This research aims to shed light on the following mentioned issues.

- To identify the subaltern's contributions which have been overshadowed by mainstream historiography and seeking to uncover the stories of individuals who have been marginalized, oppressed, such as the indigenous communities affected by malaria in colonial India.
- Shedding light on to uncover the power dynamics within scientific community and colonial society.
- Attempting to reclaim the narrative and experiences of those often overlooked in mainstream historiography.

Review of Related Literature

Many critics have commented on Amitav Ghosh's *The Calcutta Chromosome* since its publication in 1995 focusing on different issues and ideas and applying variety of theoretical perspectives. Their writings have been significantly contributing to shape the novel with new issues and perspectives. In this regard, Frangos (2016) in his essay "The End of Literature: Machine Reading and Amitav Ghosh's *The Calcutta Chromosome*," states that this book is "famously difficult to classify" (p.2). It contains history, the future (posthuman), machine reading, the possibility of cultural history and so on. He mainly focuses on the representation of science and the "machine" reading of the novel and how digital technology is shown in this novel. According to Frangos, "the novel imagines a future of the digital in which the digital archive's capacity for nearly infinite storage allows the reader, in this case Antar, to achieve the perspective of the posthuman future" (p.7). He also states that digital technology, memory, and digital archives are related to historiography in this novel.

Christopher A. Shinn emphasizes the representation of "biopower" in this novel. He argues that Ghosh's representation mostly directs the readers' attention towards the biological process of human evolution. According to Shinn biopower refers to the biological power of human beings which is more important than technology and machinery based human characteristics. Shinn states that technology is shown just as an "instrument" of biopower and biopower is not dependent on technology. Technological influence is unavoidable because DNA is one of the most important biological terms that plays an important role in the novel and can also be manipulated by medical technology. However, he also says that it is impossible to think of the "posthuman," or as he states it, "politics of hope" only with technology and without the influence of biopower. Rather, he emphasizes human experiments on machines. Similarly, Nelson (2016) writes that:

This novel makes the reader think about the "human" in new ways, a new human that seems to have more technology-based characteristics. She also argues that in Ghosh's novel it is very clearly suggested that "machine is using human" and human activities are fully influenced by machines. However, she focuses more on Ghosh's representation of the enrichment of colonial science laboratories and their use of advanced technology. (pp.5-6)

According to her, not only the West is advanced in science and technology, but also British colonies are advanced too. Though she praises science and technology for making human life easier she criticizes Western scientific history and the Western colonizers' representation of the British colonizers as "scientist" and colonized as "mice and guinea pigs" (P. 254). She suggests Western people not deny the colonized people's participation in scientific history.

The most important theme of the novel, postcolonial history, becomes the focus of many critics. One example is Claire Chambers, who argues that Ghosh intentionally "pushes the marginal characters" into the centre of the novel's plot to include them in colonial history. She states that this novel is an attempt to re-write Ronald Ross's (the Western scientist who discovers malaria parasite) medical history of Malaria discovery. She also argues that Ghosh tries to clarify the issue that colonial scientific discoveries include the equal participation of colonizers and the colonized. She argues that Ghosh's idea behind the whole story of "subaltern" and "science fiction" is to prove that Ross's success is manipulated by indigenous knowledge. Like Nelson she also criticizes the portrait of Ross in the novel and Ross's attempt of using Indian people illegally as guinea pigs. Likewise, Margery Sabin also argues that by such a fictional way of writing literary scholars can come into a conversation with subalterns and can represent subalterns. So, the novel 'The Calcutta Chromosome' provides the possibility of an alternative subaltern history which has traditionally operated through silence rather than articulation. Those ignored, silenced, marginalized history is brought into the limelight and record into the mainstream historiography.

Methodology

Since, it is qualitative and interpretative research, it brings theoretical insights from David Ludden's concept of Subaltern studies, Padmini Mongia's Contemporary Postcolonial Theory, Gyatri Chakravorty Spivak's 'Can Subaltern Speak' and Ranjit Guha's concepts of Subaltern Studies will constitute to buttress the textual analysis. Taking recourse to their critical insights, this article figures out the research problem by unveiling the muffled voice of the voiceless Indians during colonial India. To attain the objectives, related books, published journals, unpublished reports and library resources are immensely used and studied and thematic analysis about the text is carried out.

The term 'subaltern' refers to the populations that are socially, politically, financially, and geographically outside the hegemonic power structures. Spivak's work, "Can the Subaltern Speak" heavily influenced by postcolonial theory and

Marxist thought critically examines the ways in which these groups are systematically silenced. As Spivak (2006) views: "one clearly available example of ideological epistemic violence is the remotely orchestrated, far-flung, and heterogeneous project to constitute the colonial subject as Other. This project is also the asymmetrical obliteration of the trace of that Other in its precarious Subject-ivity" (p. 31). Spivak argues that the subaltern cannot speak within the frameworks of Western epistemology and intellectual discourse because their voices are either ignored or co-opted by those in power. The elite intellectuals and colonial powers often speak for the subaltern, thereby silencing their actual voices and perpetuating their marginalization.

Spivak introduces the concept of "epistemic violence", which refers to the harm done to subaltern groups by denying them the capacity to represent themselves. This form of violence occurs through imposition of the dominant group's knowledge systems and worldviews, effectively erasing the subaltern's own ways of knowing and being which is projected in the novel through the characters like Murugan, Laakhan, and Antar.

Similarly, Edward Said's concept in "Orientalism" is a crucial framework for understanding the construction of cultural and political dominance through the depiction of the East by the West. "Othering" refers to the process by which the West defines itself as superior by contrasting itself with the East, which is portrayed as inherently different, backward, exotic, and inferior. This binary opposition not only establishes the identity of the West but also justifies its dominance over the East. Said argues that "Orientalism" is a discourse used by the West to exert control over the Orient. It creates a stereotypical image of the East that serves Western interests. This process of "othering" involves reducing the diverse cultures and peoples of the East to a single, monolithic entity characterized by irrationality, barbarism, and stagnation, which contrasts with the rationality, civilization, and progress attributed to the West. David Ludden's contributions to Subaltern Studies primarily revolve around understanding and amplifying the voices and experiences of marginalized groups in history, especially in the context of South Asia. Ludden, an American historian, integrates various methodologies and perspectives to explore how subaltern groups—those who are socially, politically, and economically outside the hegemonic power structures—have influenced and been affected by broader historical processes. Ludden critiques traditional historiography for its focus on elite perspectives, often neglecting the experiences and contributions of the subaltern groups. He argues for a more inclusive historical narrative that accounts for the agency of marginalized communities.

Subaltern Studies is a cultural movement that emerged in the 1980s among a group of South Asian theorists/ historians. The term 'subaltern' originally comes from Antonio Gramsci, an Italian Marxist thinker, referring to marginalized groups who are socially and politically oppressed. However, the subaltern studies group redefined the term within the context of postcolonial studies. The key goal of subaltern studies is to reinterpret South Asian history from the perspective of those who are often ignored or marginalized in traditional historical narratives such as peasants, women, workers, and other marginalized and subordinated groups. In this connection, Javeed Alam (2002) argues:

There is a kind of mental space within which the social forms of existence and consciousness of the people are all their own- strong and enduring and therefore free of manipulations by the dominant groups. However, much the ruling classes may control the themes and content of politics, or the sources of history, the subaltern, that is, the people, will always manage to make themselves heard. (pp. 43-44)

They sought to challenge the dominant historiography, which often privileged the perspectives of colonial rulers or elite groups, and to uncover the agency and resistance of the subaltern classes. Ranjit Guha, in his essay "Dominance Without Hegemony and Its' Historiography" asserts that:

Colonialism involved dominance without hegemony. In other words, it proceeded on with the help of coercion rather than assent of people. The people resisted against colonialism. The colonial historiography, however, simply overlooks their resistance. It undermines the political sensibility. Now it is busy in proving the British colonialism as a rule that was based on the assent of people. It does not reflect the injustice colonialism inflicted upon the ruled people. On the top of all these, some native historiographers fall prey to the discourse of colonialism and its so-called project of improvement. (Guha, 1988, pp. 209-10)

Guha thinks that colonialism was a rule without hegemony. This hegemony was either created out of coercion or it was simply imagined by colonialist historiographers while writing British history. Subaltern studies, therefore, has brought

an exemplary stint in the perspective through modification of elite historiographies. Similarly, Gayatri Chakravorty Spivak, in her seminal essay "Can the Subaltern Speak?" asserts that subaltern cannot speak. The subaltern, a member of the non-ruling class, must be represented. If knowledge is power, knowledge is privileged, then subaltern subjects are denied having access to it. Moreover, they do not have the privileged position from where they can express themselves. They must be represented by the elite intellectuals. As Spivak (1994) states:

The small peasant properties cannot represent themselves: they must be presented. Their representing must appear simultaneously as their master, as an authority over them, as unrestricted governmental power that protects them from the other classes and sends them rain and sunshine from above. (p. 71)

She argues that the subaltern, or the oppressed and marginalized groups, are often rendered voiceless within the power structures. They are often silenced or misrepresented by dominant discourses, particularly within Western discourse and Colonial Structures. Some of the prominent figures associated with subaltern studies include Ranjit Guha, Dipesh Chakrabarty, Gayatri Chakravorty Spivak, David Ludden, among others. Their works focus on the issues of marginalization and exclusion, colonialism, nationalism, justice, truth, inclusion, and resistance movements.

Theoretical Framework

This study uses subaltern studies as a theoretical modality. While analysing the text from the margins, this research draws on the ideas and concept of subaltern studies developed by Ranjit Guha, David Ludden, Gyatri Chakravorty Spivak. "The colonial creation of the "I" and the "other," the "colonizer" and the "colonized," the "oppressor" and the "oppressed," the ruler, the native bourgeoisie, the working class or middle class, the lower class and most importantly the "subaltern" became the subjects of postcolonial studies and several scholars" (Farzana, 2016, p. 9). Western people's imposition of their own superiority on the colonial people and colonized people's sufferings gets the attention of post-colonial scholars. The voice of subaltern people, their capability of speaking and their history are important issues in subaltern studies. Gayatri Chakravorty Spivak (1994) in her essay "Can the Subaltern Speak," argues that the subaltern cannot speak because others are "speaking for them" (p.91). According to her to recover the voice of the "subaltern" is quite impossible. She criticizes this matter of trying to be their re-presentative, because it is impossible for people to represent subalterns who are in a privileged position of the society and cannot unlearn their own privilege. Similarly, according to Ranjit Guha subalterns do not have access to written history because the history is written by the privileged rulers. According to Spivak, they have different levels of oppressors, not only the colonizers but also the natives are their oppressors. They belong to the lowest level of the oppressed classes and cannot even speak for their own rights. Spivak suggests that the West should have an "effective" way of "unlearning privilege" to study the "other" and to discuss the the subaltern. She suggests that to represent them, postcolonial scholars should unlearn their privilege and they must "speak to" the subaltern rather than "speaking for them" (p.106). By this she suggests scholars not to try to be the voice of subaltern but to make a conversation with them through unlearning privilege.

Subaltern studies focus on the subaltern people to speak their own history which is ignored by the mainstream history. It gives the voices to voiceless. Subaltern studies began at the end of 1970s, but it formally came into existence in 1982 with the aim of writing the historiography of the people overlooked by the elitists. Ludden (2003) views: "Subaltern studies became an original site for a new kind of history free of national constraints, a post-nationalist reimagining of the Indian nation on the underside, at the margins, outside nationalism" (p.12). The focus of subaltern studies is on the consciousness of the subaltern classes, their marginalization and subjugation. One of the great Italian Marxist, Antonio Gramsci, analysed the term subaltern in social theory, using it to denote the people in the margin as opposed to those in the centre. Later, subaltern studies group aims to promote a systematic discussion of oppressed groups of society through a new historiography that rewrites history from margin. They describe their project as an attempt to study: "the general attribute of subordination in South Asian Society whether this is expressed in terms of class, caste, age, gender and in any other way" (Guha vii). As Ranjit Guha sees the contrasts politics of the people with elite politics, he privileges the former over the later. Guha (1997) views that "politics of the people "was an autonomous domain, for it neither

originated from elite politics, nor did its existence depend on the later” (p.4). Obviously, the historiography, fails to acknowledge the contribution made by people on their own.

Analysis

Muffled Voice in *The Calcutta Chromosome*

The Calcutta Chromosome by Amitav Ghosh deconstructs the mainstream historiography and constructs the history from the perspectives of margins. According to the British colonizers, they possess special knowledge, science and advanced knowledge belonged to Western people and all the invention and scientific discoveries were the result of their superior knowledge. However, Amitav Ghosh introduces a new way of thinking about the written history of those discoveries and the untold histories behind them. He rewrites the history of discovery of the Malaria bug in colonial India and includes the subaltern as the main subject of this alternative history. This alternative history provides an open-ended way of thinking about subaltern futures as well. In the novel, the character of Murugan appears mysteriously from the very beginning of the novel and through the whole book he remains mysterious and a bit unusual. Calcutta is not new to Murugan. He is an India-born American who works in Life Watch and a colleague of Antar; Antar is the protagonist. His early childhood was spent in Calcutta. He is an American and Indian hybrid, and his name is also a bit strange because it is not a typical American name and not even an Indian one but still has an Indian kind of tone. His accent of language is also a little bit strange and unusual that Urmila and Sonali do not understand him. His appearance in the novel is also strange; his outfit is described as, “green cap, his little goatee and his mud-spattered khaki trousers” (Ghosh, 26); he names himself as “mad scientist.” He introduces the subaltern group as a refutation against elitists.

Ghosh subverts the hegemony of Western monopoly over the scientific discoveries and inventions. The magnification and glorification of Ronald Ross, the British scientist, who found the cause of malaria is under eraser in the novel. While providing the alternative subaltern history, Ghosh makes the subaltern classes powerful. For instance, Murugan is the central character, who is subalternized in numerous ways by the elite society both “eccentric” and “ex-centric” (p.31), reexamines the history of late 19th century malaria research. He convinces that Ronald Ross, the British scientist, who was awarded the 1902 Nobel prize for medicine for his work on the life cycle of the malaria parasite, was not a ‘lone genius’ (p.39). Murugan believes that “there is a secret history that has been erased from the scribal records of the colonial society and from medical historiography more generally. He discovers all the missing or subaltern characters whose actions and deeds are not recovered” (Yadav 33). He has devoted himself to uncover the hidden truth. He is described in the text as ‘missing subject’ (p.19). The novel abounds with other subaltern people like Murugan. The international water commission, through Ava and Antar, are in the process of creating a vast record of information/knowledge in the hopes that they will be able to use it to their advantage in the future. As Ghosh narrates (1995) expressed that:

They saw themselves making history with their vast water control experiments; they wanted to record every minute detail of what they had done, what they would do. Instead of having a historian sift through their dirt, looking for meanings they wanted to do it themselves; they wanted to load their own meanings. (p.16)

Subaltern people are making their own history independently and they are trying to record their activities of past and present and they are conscious to refute against the exclusion from the mainstream historiography. As Ranjit Das Gupta, in this connection views “in contrast to dominant tendencies which have obscured and even ignored the place and role of the consciousness and politics of the lower orders or subaltern groups, the central focus of the subaltern studies is on these groups and their activities... the subaltern as the subject of history, ‘the maker of his own destiny’”. (Gupta 108) Subalterns are the creators of history it is unjust to exclude from the mainstream historiography. Murugan, for his part, is involved in a similar process in documenting the development of Ronald Ross malaria research. Murugan estimates that Ross “spent about five hundred days altogether working on malaria. And... I’ve tracked him through every single one of those five hundred days: I know where he was, what he did, which sides he looked at; I know what he was hoping

to see and what he saw; I know who was with him, who wasn't with him" (p.44). He sees the plight of subaltern people and their contribution.

According to Murugan, for the subaltern people knowledge has a different meaning. He states that through this new idea of knowledge they come to choose silence as their power. Murugan says, that for the subaltern people as Ghosh (1995) narrates:

The knowledge is self-contradictory; maybe they believe that to know something is to change it, therefore in knowing something, you've already change what you think you know so you don't really know it all: you know only its history. Maybe they thought that knowledge couldn't begin without acknowledging the impossibility of knowledge. (p. 104)

They believe that knowledge is something open ended and it cannot be defined by words. Nobody can claim to know everything because they believe that knowing means to change things. Moreover, for them communication means "to put ideas into language, that would be to establish a claim to know" (p.103). Therefore, they reject language and choose silence as their strength. Here, we come to see new thoughts about subaltern silence as their strength rather than their oppression. They possess the power of endurance and even sacrifice their lives to fulfill the task assigned to them. In this connection, Ghosh (1995) narrates:

Murugan could not get to sleep. Sweltering under the mosquito net, he lay awake, watching the ceiling fan beat the heavy monsoon air, its stubby blades flashing hypnotically in the thin crack of light that was shining through the stubbornly unfasten able balcony door. The bedclothes had bunched up around his waist in moist, sweat soaked clusters. Taking off his vest, he rolled it into a ball and dropped it out of the mosquito net. He was naked now, except for his cotton boxer shorts. The generator was still pounding away at the wedding down the road. The music seemed even louder now. But somehow, despite all that noise, he could hear the mosquitoes clearly, droning patiently around the bed, testing for openings, gathering in excitement every time a hand or a foot brushed against the fabric. Soon he couldn't tell whether the buzz was inside the net or outside, whether the tingling in his limbs came from their interrupted probing or the chafing of the moist sheets. He flattened himself against the mattress and tried to lie still. Spreading his arms and legs he waited—waited to discover whether they were really inside the net; whether his inflamed skin would allow him to discern the feel of their bites. (p.134)

Though Laakhan and Mangala are serving Ronald Ross honestly, they are segregated. Murugan has sacrificed his life honestly in the research campaign, but the contribution is overlooked. In this connection Ludden (2005) views:

"By 1983, scholars were writing two kinds of national history: one, a people's history filled with native culture and popular insurgency; the other, an official history filled with elites and political parties. Nations and states were separating like oil and water. So were culture and political economy. A new kind of nationality was coalescing in a separate domain of popular experience, which was becoming increasingly isolated from state institutions and national elites. This is how the sacrifice of subaltern in different field of society is subdued and overlooked. (p.8)

Mainstream historiography often reflects the perspectives and interests of the dominant groups in society, such as colonizers or ruling elites. These narratives tend to prioritize certain events, figures, and perspectives while marginalizing or ignoring those of subaltern groups. As a result, the experiences and contributions of subalterns are overlooked or minimized in mainstream historical accounts.

Silence is something imposed by the state to control its subjects. It somehow must be overcome if the oppressed hope to gain any knowledge and sometimes subvert the power structures or even be a source of power. As Murugan narrates:

The first principal of a functioning counter-science would have to be secrecy... It would have to use secrecy as

a technique or procedure. It would in principle have to refuse all direct communication, straight off the bat, because to communicate, to put ideas into language, would be to establish a claim to know-which is the first thing that a counter science would dispute. (p.88)

In this way, the silence as practised by the counter-scientists becomes a means of resisting the dominant discourse of colonialism and European scientific research. The scientific establishment is 'rules' constantly never around Murugan and the counter scientists, and around their respective endeavours. Murugan especially is interested in the unspoken new knowledge that the counter-scientists are protecting behind their silence. Like Murugan, the group of counter-scientists who are both at the centre of novel and at the centre of malaria research and discovery operate and exert their control from the margins of society and scientific discourse. The woman in charge, Mangala, is characterized by the colonial scientists as deviating from the psychological norms- "don't pay her any attention", Cunningham said to Farley, with a wink, 'she's a little touched... you know" (p.119). Likewise, the work she is overseeing is often set up in binary opposition to the accepted centre. For Murugan, just as there are "matter and antimatter", "rooms and anterooms and Christ and Antichrist", there are "science and counter-science", practiced by "fringe people, marginal types so far from the mainstream you can't see them from the shore" (pp.88-89). The innovations of the counter-scientists always occur outside of the scientific centre, subversive alternatives to the accepted European scientific experiments. The term "counter-science" Murugan uses is really very interesting because counter science refers to something that is quite opposite to science. Murugan introduces this term and says, you know all about matter and antimatter, right? And room and anterooms and Christ and Antichrist and so o? Now, let's say there was something like science and counter-science. (p.103) He introduces the term counter-science as something anti to Western science. However, this counter-science is the subaltern's own kind of science. It is interesting that, rather than calling it superstition or rituals, Murugan calls it counter science to make its connection with science. This word counter is used to criticize the historical interpretation of the subaltern and their lives. Ross and Mangala both do experiments on human and animal lives. However, Ross's experiments are considered as scientific, Mangala's as counter-science though she uses some scientific equipment while doing experimentations. We see Mangala using a scientific instrument such as a "scalpel" while doing experiments on the pigeons. As Edward Said (1978) states:

The major component in European culture is precisely what made the culture hegemonic both in and outside Europe; the idea of European identity as a superior one in comparison with all the non-European peoples and cultures. There is in addition the hegemony of European ideas about the Orient, themselves reiterating European superiority about Oriental backwardness, usually overriding the possibility that a more independent, or more skeptical, thinker might have had different views on the matter. (pp. 24-25)

While doing research in India in 1890s, Ronald Ross, a British scientist took the help of native Indian poor people named Laakhan and Mangala who are illiterate and working around the lab. Though they are working like servants, they fully cooperate but they are regarded as uncivilized and underestimated in British project due to their superiority as they are in civilizing mission in India as Colonialism established hierarchies of power that marginalized indigenous peoples, minorities, and other subaltern groups. The historical records produced during colonial rule often served the interests of the colonizers, reinforcing stereotypes and justifying the exploitation of subalterns. Postcolonial texts seek to challenge and subvert these narratives by amplifying the voices and experiences of subalterns.

Conclusion

The present research attempts to study the Ghosh's *The Calcutta Chromosome* from the perspective of the subaltern studies by staging the voice of the dominated Indian. In the novel, many subaltern characters are exploited. Their voices have been suppressed and their contribution and sacrifices in the research project of malaria parasite by British scientist, Ronald Ross have been excluded in the mainstream historiography. Precisely, the huge knowledge contributions the Indians had made to mitigate malaria that was unacknowledged which Ghosh critics by hoisting their works. The novel deeply concerned with the consciousness of the subaltern people such as Murugan, Laakhan and Mangala who

contributed and disseminated the knowledge to Ronald Ross to find out the cause of malaria parasite in Indian continent. The research campaign was conducted in 1890s with the help of native people and their knowledge since Ronald Ross was unknown at first and was taking the wrong track in research campaign. But due to the true support of subaltern people like Mangala and Laakhan, Ross came to the right track as a result he became successful and got the Nobel prize. The colonial authority did not record, and deeds performed by both the Mangala and Laakhan in the colonial medical historiography. The novel contains sufficient references to the incidents of Indian's involvement in the malaria research and the resistance to the British colonial historiography.

Amitav Ghosh's 1995 novel *The Calcutta Chromosome* is a multifaceted, postmodernist narrative told through the interaction of past and future. Ghosh structures the narrative through a series of micro-narratives that are lurches together through a combination of memory, storytelling, and mystical inferences. The story reflects the tension between science and belief, with science becoming passive to the mythic forces that trigger the characters' lives. These mythic forces, such as reawakening and the Hindu concept of *Mauna*, or silence, shape how the narrative evolves. Silence has its own voice and is the demiurge that creates life and calls to those it considers worthy.

Ghosh begins the story with Antar, who discovers an old ID card from a company he once worked for. He has Ava, a global search system, undertake a search on its origins, which are determined to be Calcutta and the threads that have been and are being woven by an unknown person or persons threads is through the different stories that link Antar, Murugan, Urmila and Sonali, Ronald Ross, Phulboni, and the elusive Laakhan and Mangala.

When Ava determines that the ID card belongs to Murugan, it stirs a memory in Antar of having met him, and that he went missing in Calcutta in 1995. Antar begins an investigation, and the story transported back to Calcutta in 1995. Murugan is having a chance encounter with Urmila and Sonali, and the next minute, Antar is talking to Ava or dreaming about his impending walk to Penn Station to have tea with the owner of the donut shop. Just as suddenly, Phulboni speak about the secrets that lurk in the city, or is transported back to when Ronald Ross makes his big breakthrough on how malaria is transmitted from mosquitoes.

By re-interpreting historical fragments, Ghosh destabilizes the authority of colonial narratives. By subverting the authority of colonial historiography, Ghosh depicts the possibility and capability of the subaltern people to speak for themselves and urges to resist against the elitist domination. Interestingly, with all these experiments and inventions of the subaltern people through their own silence and secrecy they come to have a voice. In the ending phase of the novel Antar comes to listen the voices and I argue that these voices belong to the subaltern who want Antar to help to overcome the corporation's manipulation; the corporation that wants to control everything. The novel ends with the appearance of the voices. Antar sees Tara and Maria with Murugan and Tara, once who appears as Mangala, says to Antar that as Ghosh (1996) narrates:

Keep watching; we're here; we're all with you.' There were voices everywhere now, in his room, in his head, in his ears, it was as though a crowd of people was in the room with him. They were saying: 'We're with you; you're not alone; we'll help you across. (p.306)

Through silence and secrecy, the subaltern people get their voice in their posthuman life, and they wanted Antar to listen to their voice. The subaltern people choose their listeners by themselves and in the end finally they choose Antar to listen to their voice. (Farzana 34). Mainstream historiography has often been Euro-centric, privileging the perspectives and experiences of Western societies while marginalizing those of non-western cultures and societies. This bias has led to the neglect of subaltern's knowledge, experiences, and histories. So, the novel *The Calcutta Chromosome* attempts to decentres the Western-centric narratives by incorporating diverse voices, knowledge and perspectives into the mainstream historical discourse which is ultimately the true justice to subalterns.

Ethical approval for the research: Not applicable

Consent for publication: Not applicable

Conflict of interest: The author does not have any conflict of interest with any institutions concerning this research

Ethical conduct of research: This paper is written ethically

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