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POSTCOLONIAL TRAUMA NARRATIVES: TRAUMATIC HISTORIOGRAPHY AND
IDENTITY IN AMITAV GHOSH'S *THE CALCUTTA CHROMOSOME*

by

JENNIFER OLIVE

Under the Direction of Dr. Benjamin Miller

ABSTRACT

The applicability of trauma studies within an examination of postcolonial literature has been a contested topic for scholars in both fields. Additionally, scholarship regarding Amitav Ghosh's postcolonial science fiction novel *The Calcutta Chromosome* encourages various readings of the novel but does not currently offer a cohesive examination of all its thematic disciplines and stylistic elements. Through an examination of this postcolonial novel, I will provide a more holistic reading of the novel through an application of trauma studies that explores its representation of the internal postcolonial conflict regarding Western and non-Western historiographies. My analysis will focus on the lexical, character, and narrative levels of the novel through its dominant medical, technological, postcolonial, and political themes for inclusions of Caruth's aporia related to the manifestation of trauma in literature.

INDEX WORDS: Trauma studies, Lexigraphy, Characterization, Narrative discourse,
Postcolonial literature

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JENNIFER OLIVE

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2014

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Jennifer Nicole Olive
2014

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IDENTITY IN AMITAV GHOSH'S *THE CALCUTTA CHROMOSOME*

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August 2014

DEDICATION

I would like to take this opportunity to thank my aunt and uncle who encouraged and supported me throughout this process. I would also like to dedicate this thesis to my husband whom I made read this document. I promise not to make you read anything else until my dissertation.

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1 INTRODUCTION

Historiographic multiplicity and its relationship to identity in Amitav Ghosh's *The Calcutta Chromosome* is an exemplary phenomenon of postcolonial literature as it presents an internal conflict between the recognized colonial history and the unrecognized colonial/postcolonial history. Within this novel, Ghosh borrows from disciplines such as medicine, technology, postcolonialism, and politics within his stylistic elements of lexicography, characterization, and narration to communicate various points about postcolonial and colonial historiographies and their relationship to notions of postcolonial identity. As seen in the various academic analyses, each of the novel's thematic disciplines and stylistic elements provides unique and insightful ways in which to read postcoloniality. Current interpretations, however, lack a comprehensive analysis that engages the multidisciplinary elements and compounded stylistic elements represented by the novel in its entirety: a key issue throughout the novel as Ghosh emphasizes how the details of historiography can reflect more than meets the eye. Therefore, the challenge for literary scholars interpreting this novel becomes how to provide an analysis of the novel's representation of postcolonial identity that covers Ghosh's multidisciplinary elements and stylistic choices. To this end, I propose a more holistic reading of *The Calcutta Chromosome* through trauma studies to expand how the idea of postcolonial identity within the novel embodies the conflict of Western historiography and alternative historiographies.

To better understand the relationship between trauma and postcolonial identity, one must understand how postcolonial literature functions in the concept of postcoloniality. In her book *Postcolonial Theory*, Leela Gandhi explains postcoloniality as a condition that "... is painfully compelled to negotiate the contradictions arising from its indisputable historical belatedness, its

post-coloniality, or political and chronological derivation from colonialism, on the one hand, and its cultural obligation to be meaningfully inaugural and inventive on the other” (6). This explanation of postcoloniality as a multitude of internal conflicts directly correlates to the problematic importance of literature in postcolonial theory, which emphasizes textual representations as “. . . endemic to the colonial encounter” at the hands of both colonizer and colonized (Gandhi 141-142). The problem, as Gandhi explicates throughout her chapter on this subject, is that the postcolonial literary critic becomes responsible for a theoretic perception of postcoloniality and the politics associated with it: “By recasting postcoloniality as a literary phenomenon, critics like Tiffin and Lawson implicitly, if accidentally, privilege the role and function of the postcolonial literary critic—whose academic expertise suddenly provides the key to all oppositional and anti-colonial meanings” (142). After her explication of postcolonial literature and corresponding postcolonial theory throughout history, Gandhi ends her chapter by expressing that “. . . perhaps what postcolonial literature needs is a properly romantic modality; a willingness to critique, ameliorate and build upon the compositions of the colonial aftermath” (166). To this end, she continues to express not only how postcolonialism has offered great insights into postcoloniality but also how it can continue to do so through shedding the politics of postcoloniality through its “reflexive modality” (176). To add to Gandhi’s observations, I suggest that trauma studies may provide ways in which postcolonialism can expand its ways of analyzing postcoloniality within postcolonial literature.

Through its own progression in history from a physical wound to a psychological concept, trauma, via trauma studies, became a way in which one can understand the influence of conflicting historiographies. In the introduction to her first section of *Trauma: Explorations in Memory*, Cathy Caruth explains trauma as an irreconcilable history, “an impossible history,” and

the traumatized as those who “. . . carry an impossible history with them, or they become themselves the symptom of history that they cannot entirely possess” (5). This explanation of trauma as an alternative history correlates with the idea of postcoloniality explained by Gandhi in that the historiographies create an internal conflict within the postcolonial subject, which suggests a need to further examine their similarities. Furthermore, the similarities between the ideas of postcoloniality and trauma are important due to the examinations within trauma studies. As Caruth continues to explain, the immediacy of conflicting historiographies is the “. . . greatest challenge to psychoanalysis, and is being felt more broadly at the center of trauma research today” due to the “belatedness”¹ or the “numbing” to an immediate reality (6). It is through these ideas of belatedness or numbing that she suggests trauma be understood not as a moment but as a continued existence in “survival” (9). This concept of survival is parallel to postcoloniality in that it represents a situation which embodies conflicting historiographies over time after a critical event. In this way, postcolonialism’s pursuit “. . . to elaborate the forgotten memories of this situation [postcoloniality]” may benefit from trauma studies’ attempt to understand the impact of trauma (Gandhi 8). Similarly, trauma studies may also potentially benefit from the analysis of literary manifestations within the unique experiences of postcoloniality in a way that would broaden its focus to a non-western perspective and, perhaps, open its definition into a more comprehensive study of trauma.

While both of these possibilities for expansion exist, postcolonial critics have repeatedly addressed several key issues regarding the problematic application of trauma studies to

¹ Caruth’s use of “belatedness” is an extension of Freud’s concept of “nachträglichkeit.” Friedrich-Wilhelm Eickhoff’s analysis of this concept’s history and development in his article “On *Nachträglichkeit*: The Modernity Of An Old Concept” explains how Freud’s work ultimately develops “nachträglichkeit” as a traumatic experience that a subject is unable to incorporate into his or her memory and, therefore, is forced to relive later in time. Caruth’s work gets a brief mention in Eickhoff’s article for notably reframing the concept of “nachträglichkeit” as belatedness and moving the focus of this concept in trauma from the experience to the repetitive memories. This focus ultimately expands the understanding of this concept into a process rather than an event.

postcolonial literature mostly in regards to the limiting nature of its Eurocentric application and content. Scholarship focusing on the relationship between trauma studies and postcolonial literature seems to have significantly emerged in 2008 with the publication of *Studies of the Novel*'s special issue "Postcolonial Trauma Novels" (volume 40) introduced by Stef Craps and Gert Buelens. The introductory contributors noted that this particular issue was the result of their 2006 MLA session entitled "Trauma, Narrative, and the Postcolonial." This expansion from their 2006 panel to the 2008 special issue of *Studies in the Novel* shows the development of this application over a number of years. However, it is interesting to note that the editors quickly begin the issue with a statement regarding not only the beneficial trends in the articles between postcolonial literature and trauma studies but also the problems on which the contents elaborate.

Within the introductory discussion of postcolonial literature and trauma studies' problematic relationship, the issue of engaging postcolonial literature with a Western-originated school of thought is most problematic. Issues and themes raised introductory notes include the Western application of current trauma studies and its problematic application to a non-Western environment, the problematic applications of Western-discourse, the thematic focus of postcolonial trauma on a group rather than an individual from its Western application (an issue that the editors noted as problematic in both applications), and the thematic address of the medium in which testimony is conveyed, especially that of the novel (Craps and Buelens 3-5). Given all of these trends and further probing questions, it is no surprise that other scholars have since further explored and elaborated on the issues that plague the relationship between trauma studies and postcolonial literature. In her later article "Trauma Theory and Postcolonial Literary Studies," Irene Visser exemplifies how scholars continue to wrestle with the issues and themes identified in the *Studies in the Novel*'s special issue by specifically focusing on the problematic

definitions of trauma, the oppositional trends of thought that occur within trauma studies, and the Euro-centric focus of trauma studies all in relation to postcolonialism (271). The identification of these issues is important for both trauma studies and postcolonial literature; however, it should not exclude scholars from attempting successful applications given the similarities between representations of trauma and postcoloniality.

The more recent publication of scholarship connecting trauma studies and postcolonial literature seems to suggest that the benefits of this relationship are becoming more apparent. One such reading is Samuel Durrant's analysis of traumatic colonial experience in Chinua Achebe's *Things Fall Apart* and trauma's belated representation within the text entitled "Surviving Time: Trauma, Tragedy, and the Postcolonial Novel." Here, Durrant argues that Achebe uses narration as well as his character Okonkwo to specifically communicate the trauma of helplessness (101). As Durrant shows, the different aspect of the postcolonial novel can be read in a way that helps to "create" the seemingly absent history in the postcolonial identity (102). Through his analysis, Durrant provides a successful correlation between trauma studies and the conflicts of postcoloniality in a way that is not limiting; rather, it helps to expand the associations made between trauma studies and postcolonial literature.

Even more recently, Stef Craps, one of the contributors of the 2008 "Postcolonial Trauma Novels" special issue of *Studies in the Novel*, recently published *Postcolonial Witnessing: Trauma Out of Bounds* (2013), which directly exposes and elaborates on four major issues that postcolonial theorists argue prevent trauma theory from obtaining a global perspective: marginalization of non-West perspective, universality of trauma definitions, implied need for modernist aesthetics, and a lack of connection between First and Third World (2). His book further elaborates on the criticisms levied against trauma studies in being too limited in its

application; however, he also suggests that an overall broadening of the definitions and related concepts within trauma studies could apply to postcolonial experiences and, in fact, suggests that it may even be beneficial for better understanding the (post)colonial experience. This recent application is extremely important regarding the application of trauma studies to postcolonial literature in that it shows the progression of this relationship from the identification of issues to the proposed rectification as well as the mutual benefit that such a relationship would have on both disciplines.

As this more recent theoretical undertaking of these disciplines and their relationship shows, the inquiry into traumatic representations within postcolonial literature can be beneficial but is currently limited. Even so, a critical analysis of *The Calcutta Chromosome* becomes more problematic in its lack of critical attention given its fairly recent publication history and unique situation within Ghosh's oeuvre. Published in 1995, *The Calcutta Chromosome* sets readers in a not-so-distant New York City while taking narrative excursions into other colonial or postcolonial landscapes. The novel opens with an introduction of the low-level, data entry employee named Antar, who mostly interfaces with his computer and unofficial supervisor nicknamed Ava (1-7). During this initial period of character introduction, we learn that Antar is an immigrant from a small Egyptian village and used to work for a company, LifeWatch, which has since been absorbed into the monolithic and expansive corporation that is the International Water Council (5-10). At his new job, he performs seemingly meaningless data entry jobs from home while carefully anticipating his retirement (5). The story begins, however, at the moment when everything changes for Antar as Ava stumbles upon an old LifeWatch I.D. badge belonging to a missing employee, a co-worker whom he knew named Murugan (20-22). From this discovery,

Antar spends the rest of the novel using Ava as a means of finding out what happened to Murugan after he went to Calcutta and what Murugan hoped to find there.

While Antar's story frames the novel and grounds it in the near-future time frame, the novel also experiences sections of retrospection and various points of view including Murugan, Urmilla, and Sonali. Murugan begins his story chronologically as an employee of LifeWatch where he meets Antar (48). In this meeting spanning several chapters, Antar had been instructed by his supervisor to persuade Murugan not to go to Calcutta; however, Murugan uses this opportunity to tell Antar about his theory regarding the history of malaria research in colonial India (47-59, 68-79, 87-95, 103-109). Based on what appears to be hints of evidence, Murugan becomes convinced that Ross was actually being manipulated by his colonial lab assistants without his knowledge (68-79, 87-95, 103-109). The purpose of this manipulation was to cause a mutation in the parasite that would eventually lead this counter-science group of colonial lab assistants one step closer to achieving interpersonal transference, or immortality through migrating consciousness from one body to another, via the Calcutta chromosome (107). To confirm his suspicions, Murugan travels to Calcutta to search for more evidence related to the counter-science group led by the mysterious figures of Mangala and Lakhaan. Thus, Murugan's narrative begins on the day before his disappearance in Calcutta and recounts his journey searching for the secret history behind Ronald Ross's discovery of the malaria vector (23).

While searching for clues in Calcutta, Murugan stumbles upon two women, Urmilla and Sonali, who are both reporters with *Calcutta* magazine (27-33). By coming into contact with these two women, the audience begins to receive parts of their stories as their lives start to connect in strange ways to Murugan's search. These excerpts show how both of these women lead very different lives in Calcutta and, yet, are connected through their job and this unlikely

alternative version of history. After briefly meeting Murugan, Sonali, the daughter of a famous actress, becomes involved with the workings of the counter-science group when she goes looking for her missing boyfriend. Upon finding him at one of his abandoned houses, she passes out while watching a counter-science group ritual from a hidden observation point (160-167). Urmilla enters the counter-science group's story as she starts researching the early short stories of Phulboni entitled *The Laakhan Stories*, later revealed to be Sonali's father (110). After meeting Murugan and revealing her interest to Sonali, she receives a key clue the next day related to the disappearance of a colonial figure that connects her search with Murugan's work (177-179). From this connection, the two partners search the city of Calcutta to put together the scattered pieces of the counter-science history. Near the end of their search, Murugan and Urmilla connect with Sonali to discover that the two counter-science leaders were leading them all along as Sonali's boyfriend, Roman Haldar, is revealed as Lakhann and Mrs. Artouian, Murugan's landlady and Urmilla's mentor, is revealed as Mangala (291-292).

These stories from Murugan's time in Calcutta interject into Antar's frame narrative as he continues his search for Murugan. Moreover, both of these temporal sequences are also interrupted by interpretations of external sources such as Elijah Farley's notes on his experience with Mangala (136-154), the description of the séance with D. D. Cunningham (208-214), and Phulboni's story on his experience at Renupur (256-283). Within these interruptions and retrospections, we discover that Antar and Murugan both have malaria resulting in relapses of fever for the hosts (54). This information becomes particularly important when Antar begins to feel ill while searching for information about Murugan, which causes him to cancel his dinner plans with Tara, another immigrant who recently moved into his apartment building (191).

His illness reaches its climax at the end of the novel when he uses Ava to finally see and speak to Murugan who is being held in an insane asylum in Calcutta (293-295). At this point, Murugan explains that his theory regarding the counter-science group was right and that all Antar has to do is put on his Simultaneous Visualization headgear in order to see what happened to him (310). In putting on the headgear, Antar begins to watch the events from the beginning of Murugan's story that the audience read in the first few chapters of the novel (310). While watching, he hears whispers in his apartment as well as Tara, who asks him to continue watching and reminds him that “. . . we're here; we're all with you” leading the audience to believe that she has been connected to the counter-science group all along as well (311).

Through these events, one can see how *The Calcutta Chromosome* takes the historical evidence of Ronald Ross's discovery of the malaria vector and exploits its narrow perspective to provide a narrative for the unrepresented colonial and postcolonial perspectives of history. While many of Ghosh's novels rely on historic realism to connect with problematized aspects of postcolonial identity, this science fiction novel allows Ghosh to elaborate on historiography and its relationship to postcolonial identity using multidisciplinary tropes. In order to broaden the understanding of postcoloniality within the novel not fully represented in the individual thematic analyses, I will argue that *The Calcutta Chromosome* represents postcolonial identity as traumatic through a comprehensive analysis of the various thematic and structural levels. The method through which I will conduct this application will correspond to the novel on three levels: lexeme, character, and narrative. In each of these areas, I will supply four dominant thematic applications—including biological, technological, postcolonial, and political—in order to explain how each element relates back to the novel's discussion of postcolonial identity via trauma studies.

I will begin my analysis by examining the some of the more easily recognizable forms of representation within the novel to establish a grounding for my later extrapolations. The term that I will use for this first level of representation is lexical as it will focus on establishing and analyzing individual and explicit textual representations for larger thematic meanings. In his essay “SF as Metaphor, Parable and Chronotope (with the Bad Conscience of Reaganism,” Darko Suvin explains the value of such individual textual representations by establishing an “incomplete working definition of metaphor as *a unitary meaning arising out of the (verbal) interaction of disparate conceptual units from different universes of discourse or semantic domains*” (186). This definition invokes metaphor as a particularly useful mechanism of transference between individual representations to larger thematic ideas and meanings. Using this understanding of metaphor, I will closely examine the individual metaphors and their related functions of personification and metonymy in order to thoroughly discuss how they convey the conflicting histories in the postcolonial situation and, thus, influence larger thematic metaphors across the novel related to a representation of trauma. Ultimately, I will explore how this hierarchical relationship facilitates a grounding to understand the novel as a metaphoric representation of trauma.

For this analysis, I will rely on theoretical concepts of George Lakoff and Mark Johnson’s elaborations on metaphor and its related concepts of personification and metonymy in *Metaphors We Live By* to identify my topic of study. Additionally, I will rely on Zoltán Kövecses’s hierarchical representation of micrometaphor and megametaphor in *Metaphor: A Practical Introduction* to show how the individual metaphors within the text contribute to thematic metaphors that extend throughout the text. Moreover, I will further investigate Darko Suvin’s explanation of the relationship between metaphor and the genre of science fiction to

extend my analysis of the novel's micro- and megametaphors and connect them with the various thematic analyses into an overall metaphoric representation. I will complete this unification by utilizing Cathy Caruth's aporia of representation, belatedness, and repetition in order to emphasize how the meanings conveyed through these metaphors embody the conflict within postcoloniality as traumatic.

In the next section, I will examine the characters as more prominent manifestations of different perspectives and times that express the conflicting historiography within postcolonial identity as an extension of my previous analysis of the lexical representation. This examination will focus on the characters as representations of internalized conflicting historiographies and their interactions with one another at various chronologies as representations of personal and collective trauma. In looking at significantly emphasized characters through each of the dominant themes rather than just the characters supplying the narrative element of voice, I plan to establish how the characters overall function as agents within the novel in order to represent specific aspects of postcolonial identity.

Within my analysis, I will rely on Uri Margolin's definition of a character from his chapter in *The Cambridge Guide to Narrative* to better define the concept's function within the novel. Additionally, I will rely on the definition and characteristics of the character element as provided by Mieke Bal in *Narratology: Introduction to the Theory of Narrative* to identify the roles that significant characters play within the thematic analyses. In each of these thematic character analyses, I will also expose Cathy Caruth's aporia within their respective roles to show how each respective character presents a similar function as a representation of trauma within the postcolonial experience. As such representations, the characters will thus be portrayed as a

connecting element between the lexical and narrative analyses that helps to confirm my analysis of the novel as a representation of trauma.

My final section will focus on the narrative structure of the novel in relation to how it further supports the interpretation of its content as a manifestation of trauma in postcoloniality. In this section, I will examine how my analysis of the metaphors from my first section and the characters from my second section cohere to a more comprehensive thematic analysis of the novel's discursive elements. In this section, I will analyze the narrative's discursive elements according to the framework established by Genette in *Narrative Discourse* to show how the previous elements cohere in the narrative structure in order to suggest thematic positions for each element within the larger narrative structure such as identification of multiple and opposing chronologies in the medical theme, subversion of the dominant historical narrative in the postcolonial theme, the implication of postcolonial networking in the technological theme, and the implication of the audience's interaction with the narrative content in the political theme. The coherence of these thematic analyses in the narrative structure will, therefore, further support an analysis of the novel as indicative of postcolonial trauma.

To support my analyses, I will supply a detailed analysis of the narrative structure via Genette's methodology as well as the instantiations of thematic analyses through existing scholarship of the lexical and character analyses. Additionally, I will identify Caruth's traumatic aporia to explain how the discourse analysis can be seen as a representation of trauma. Furthermore, I will refer to theoretical aesthetics of traumatic narration via sections of Roger Luckhurst's *The Trauma Question* to support my choice of criteria. I will also explore how such an analysis of traumatic representation in postcolonial fiction is possible and necessary in reference to Steph Craps's *Postcolonial Witnessing: Trauma Out of Bounds*.

By addressing a void in the scholarship on Ghosh's novel *The Calcutta Chromosome*, this thesis aims to better explain the benefits of reading postcolonial literature and trauma studies as a way of understanding conflicting historiographies within postcolonial identity. This holistic approach attempts to expand on the current scholarship on the novel's various thematic and stylistic elements in a way that better communicates the literary representation of postcolonial identity as a manifestation of conflicting historiographies. While this application is contained to one novel, the successful application of such concepts will show the versatility of trauma studies and how its particular application to postcolonial literature provides an opportunity to further explore the correlation between postcolonial identity and trauma.

1 METAPHOR AND ITS RELATED CONCEPTS AS LEXICAL INDICATOR OF POSTCOLONIAL TRAUMA IN *THE CALCUTTA CHROMOSOME*

The more recent definition of trauma that supports its conceptualization as a process extending from the initial moment of injury through its remembrances² raises important aspects regarding the representation of trauma. Within his article “The Body Keeps Score: Memory and the Evolving Psychobiology of Post Traumatic Stress,” Bessel van der Kolk provides a condensed psychobiologic history of trauma in which he addresses the move from focusing on the traumatic experience to focusing on memory storage processes in order to find effective treatments for patients suffering from post-traumatic stress disorder (PTSD). What this article indirectly presents in such a history is a historical mapping of PTSD from its earlier conceptions based on the kinds of trauma experienced by patients (starting with veterans and moving later into the realms of abused women and children) to an expansion of the definition based on psychobiological factors that influence remembrance behaviors. He ultimately uses this historical expansion to support his argument regarding the psychobiological identification and classification of trauma and its role in providing treatments to PTSD patients; however, it is also helpful in framing how remembrance is part of trauma rather than just an after effect. This inclusion thus invites interpretations of remembrance behaviors to be considered as representations of ongoing trauma.

The development of a trauma studies in regards to examining remembrance behaviors as traumatic representations owes a great deal to the more recent theoretical works of Cathy Caruth

² According to the *Oxford English Dictionary*, “trauma” derives from a Greek word meaning “wound”, and its first recorded English usage in 1684 regarded it as a physical or external wound. It is not until much later, 1894, that a second definition adds a new perspective for this concept that continued to evolve into the concept with which we are now more familiar: “A psychic injury, esp. one caused by emotional shock the memory of which is repressed and *remains unhealed*. . . . Also *the state or condition so caused* [emphasis added]” (“trauma”).

whose works provide a particular link between trauma and its representation in literature and history. Through Caruth's development of trauma studies, she particularly focuses on what Roger Luckhurst describes as the "... device of aporia, or unresolvable paradox" (4). Luckhurst specifically notes that Caruth employs two types of aporia that directly lend themselves to a discussion of trauma in language and literature, "representation" and "narrative time" (5). These aporia types function as symptoms or representations of internal paradoxes related to trauma particularly found in "privileged forms of writing" such as psychoanalysis and literature (5). The correlation between Caruth's traumatic aporia and their prevalence in writings such as literature sets the stage for examining particular works of literature as representations of trauma through the identification of these aporia.

Caruth's aporia of representation particularly applies to postcolonial literature in her understanding of how an individual's understanding of an event can conflate or contradict the understanding of history as a truth. In a discussion about PTSD and its manifestations in patients, Caruth specifically notes that "[t]he traumatized, we might say, carry an impossible history with them, or they become themselves the symptom of a history that they cannot entirely possess" (*Trauma* 5). The relationship between the postcolonial experience and this aporic understanding history is evident in the representation of postcolonial identity in postcolonial literature as containing aspects of conflicting histories, colonial and colonized.

In looking to literature, some of the most famous examples of historic aporia can be found within the writings and opinions of postcolonial writers concerned with identity such as Salman Rushdie and Amitav Ghosh. In an interview with T. Vijay Kumar, Amitav Ghosh explained his particular dislike for the term "postcolonial" in that it described the peoples after colonialism as "negative": "... when I think of the world that I grew up to inhabit, my dominant

memory of it is not that it was trying to be a successor state to a colony; it was trying to create its own reality, which today is the reality that we do inhabit” (105). Here, Ghosh expresses his dislike for the term “postcolonial” as it describes these nations and their peoples only in the terms of colonialism and denies them their own complex version of history that contains perspectives from both colonizer and colonized to form a richly complex history for those individuals. This melding of seemingly contradictory ideas within postcolonial identity parallels the idea of representational aporia in Caruth’s theorization of trauma in that both reveal the internal conflict of conflicting historiographies. Through this connection, I will investigate constructions of conflicting historiographies as manifestations of representational aporia within *The Calcutta Chromosome*.

The second aporia type used by Caruth in her development of trauma studies as referenced by Luckhurst is that of narrative time. When discussing this aporia, Luckhurst specifically refers to Caruth’s notion of belatedness or the displacement of immediacy in relation to trauma. In her theoretical development of trauma in *Unclaimed Experiences*, Caruth focuses on this temporal aspect of trauma by noting that “[t]raumatic experience, beyond the psychological dimension of suffering it involves, suggests a certain paradox: that the most direct seeing of a violent event may occur as an absolute inability to know it; that immediacy, paradoxically, may take the form of belatedness” (91-92). For Caruth, mediums particularly well suited to communicate such aporia are language and literature. Caruth is clear in her introduction to *Unclaimed Experiences* that language is the key in explaining how psychoanalytic trauma theory and literature come to bear on one another: “And it is at the specific point at which knowing and not knowing intersect that the language of literature and the psychoanalytic theory of traumatic experience precisely meet” (3). The implication of this association between

belatedness and language and literature is due to their functions as representational systems. Whether fiction or non-fiction, the events depicted in literature are activities in remembrance being visited through language.

This perspective is not to say that all literature and language is traumatic due to its delayed representation. Instead, it marks these mediums as particularly well-suited for communicating trauma when directly confronting their representational function. In an introductory explanation of how trauma narratives function through Freud's famous train accident example, Caruth notes that "[w]hat returns to haunt the victim, these stories tell us, is not only the reality of the violent event but also the reality of the way that its violence has not yet been fully known" (*Unclaimed* 6). Here, Caruth exposes that the narrative communication of a traumatic experience lies not just in a simple remembering of an experience but in the idea that the subject still struggles with its incorporation making the remembrance process and its belated representation part of the trauma. Additionally, its use as a dominant characteristic of a particular piece of literature in connection with Caruth's other aporia can serve as support for examining a literary source as a traumatic representation. Using the temporal differences between the event and its representation, I will examine literary instances within *The Calcutta Chromosome* as manifestations of belatedness.

In Caruth's discussions of trauma as well as other theoretical explanations of traumatic experiences, she recognizes another narrative temporal aporia, that of repetition. In a continued explanation of aporia related to belatedness, Caruth explains that "[t]he repetitions of the traumatic event—which remain available to consciousness but intrude repeatedly on sight—thus suggest a larger relation to the event that extends beyond what can simply be seen or what can be known, and is inextricably tied up with the belatedness and incomprehensibility that remain at

the heart of this repetitive seeing” (92). Here, Caruth explains how repetition relates to belatedness as a narrative aporia characteristic. As such, repetition also shares a particularly close relationship with language and literature.

To better understand how repetition functions in relation to language and literature, one can investigate its use within the incorporation of traumatic memory. In their work developing a psychobiological understanding of trauma, Bessel A. van der Kolk and Otto van der Hart explain unincorporated traumatic memories as being stored at an iconic level of memory that, when presented with similar stimuli, trigger a reactivation of that memory within a subject (172-174). By applying this understanding of repetition to language and literature, such a characteristic in regards to narrative time can be analyzed as a recognition of traumatic stimuli. In their conclusion, however, van der Kolk and van der Hart conflate the ability of a subject to tell the story of a traumatic experience as evidence of a “complete recovery” (176). This notion of recovery is problematic in that it lends itself to an interpretation of a written or spoken narrative as an analyzable subject rather than a representation. To avoid such issues, I would instead emphasize my focus on *The Calcutta Chromosome* as a work of science fiction and, therefore, supported by Darko Suvin’s explanation of genre’s texts in “SF as Metaphor, Parable and Chronotope (with the Bad Conscience of Reaganism)” as instantiations of “possible worlds” (197). As a “possible world,” I am investigating the text a representation rather than a patient or subject. Through this understanding of repetition, I will analyze *The Calcutta Chromosome* for literary instances of this characteristic as indicative of traumatic representations.

My contribution towards the understanding of this relationship between trauma studies and literature is to recognize the very specific representation of postcolonial identity as traumatic through the use of these aporia in *The Calcutta Chromosome*. To be able to communicate these

aporia in the finite system of language within literature, an author will need to rely on different aspects of literary representation, which I will cover throughout this thesis. To begin, I will first examine the lexical level of representation to introduce how such aporia are primed for representation in the novel's aspects of character and narrative that follow. My use of the term lexical derives from its use in computer science in which lexemes are sequences of characters, which, when grouped together and have a collective meaning, form tokens³. For the purposes of my analysis, the token on which I will focus is the literary device of metaphor and its related functions of metonymy and personification as outlined in George Lakoff and Mark Johnson's seminal work *Metaphors We Live By*.

The reliance on metaphor and its related functions as a token for examining lexical level manifestations of traumatic aporia in this postcolonial novel derives from its effectiveness as a representational system for cognition. This concept is at the heart of Lakoff and Johnson's argument in *Metaphors We Live By* as they emphasize that “[o]ur ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature” (3). Here, Lakoff and Johnson suggest that the linguistic concept of metaphor runs deeper than its representation as lexemes; indeed, they claim that we think in terms of metaphors in order to better understand our experiences. This correlation is specifically important when considering Lakoff and Johnson's definition of metaphor, which states that “[t]he essence of metaphor is understanding and experiencing one kind of thing in terms of another” (5). This definition helps to explain not only the concept of metaphor but also our thought process in which we understand and express more abstract or difficult to define concepts in terms of previous, more recognized and understandable

³ Source information regarding this concept came from Maggie Johnson and Julie Zelenski's lecture notes on “Lexical Analysis,” which are part of the online supplemental material for the computer science textbook *Compilers: Principles, Techniques, and Tools* (also known as the *Dragon Book*).

schemas (van der Kolk and van der Hart 170). By connecting the concept of metaphor with the process of cognition, the lexemes from a textual metaphor can be seen as tokens as they carry meanings making this concept particularly relevant when discussing cognitive processes due to their similarities.

Moreover, it is also important to recognize the difference inherent in metaphors as representations in order to better understand how these tokens function in terms of literature. Lakoff and Johnson are careful to explain that “. . . the metaphorical structuring involves here is partial, not total. If it were total, one concept would actually be the other, not merely be understood in terms of it” (13). It is this key characteristic of metaphor as a representation rather than a substitute that directly connects to my investigation of aporia indicative of trauma to the lexical level analysis of *The Calcutta Chromosome*. Specifically, I am referring to the linguistic attribute of the sign always being a step removed from its signified, which, I will argue, creates a space for traumatic aporia. This correlation is not to suggest that all metaphors are indicative of trauma; rather, I am suggesting that metaphors used in conveying trauma and that provide characteristics of Caruth’s three aporia serve as a particularly relevant lexical tool for conveying this cognitive concept. Through the application of these concepts to *The Calcutta Chromosome*, I will show how specific lexical instances governed by the dominant thematic analyses of medical, technological, postcolonial, and political perspectives use the concept of metaphor and its related functions of metonymy and personification to convey aporia indicative of trauma relating to postcolonial identity.

1.1 Lexical Analysis of Metaphor in *The Calcutta Chromosome*

In *The Calcutta Chromosome*, Ghosh uses several levels of metaphor to communicate the key aspects of the main themes of his novel. This relationship is similar to the hierarchical

structure of Zoltán Kövecses's micrometaphor and megametaphor: "Some metaphors, conventional or novel, may run through entire literary texts without necessarily 'surfacing.' What one sometimes finds at the surface level of a literary text are specific **micrometaphors**, but 'underlying' these metaphors is a **megametaphor** that makes these surface micrometaphors coherent" (Kövecses 57). In this kind of relationship, Kövecses explains, manifestations of metaphors may, in a literary text, contain links between one another in order to form more broad metaphors called megametaphors. Using Kövecses's hierarchical construction of metaphor, I will explain how the use of micrometaphors across the novel reveals larger thematic megametaphors that influence the various dominant thematic analyses.

While this hierarchical construction of metaphor is particularly useful when analyzing literature, it is important to note that this construction of metaphor also has a notably close relationship with the genre of science fiction." In "SF as Metaphor, Parable and Chronotope (with the Bad Conscience of Reaganism), Darko Suvin also offers a hierarchical explanation of metaphor as either high-grade or low-grade metaphor based on the criteria of congruency, complexity, and novum. The metaphors that do not embody these characteristics are considered low-grade metaphors in that they often depend on "pre-existing meaning" and results in individual instances of metaphor or syntagm (188). Consequently, Suvin explains that metaphors embodying these three criteria extend across the syntagmatic instances throughout the text as themes are high-grade metaphors (192-196). What Suvin adds to this hierarchical analysis, however, is a way to conceptualize the genre of science fiction within metaphor through its use of possible worlds as chronotopes by means of the ontolytic effect, which uses the oscillation between the possible world and the reader's world to communicate a more abstract concept (198-202). By understanding Suvin's conceptualization of science fiction as a metaphor, I will show

how the various thematic megametaphors exhibit Caruth's three major aporia and, thus, lay the foundation for a more holistic examination of *The Calcutta Chromosome* as a representation of postcolonial trauma.

1.1.1 Medical

In the lexical level of *The Calcutta Chromosome*, the medical theme seems to be the most relevant place to start as the novel most evidently displays a narrow and frequent use of medical terminology. This process of using a particular object-oriented schema particularly lends itself to Lakoff and Johnson's concept of ontological metaphors, which reference other schemas in order to help us better understand them: "Once we can identify our experiences as entities or substances, we can refer to them, categorize them, group them, and quantify them—and, by this means, reason with them" (Lakoff and Johnson 25). Through this concept of ontological metaphor, the repetitive use of the narrow medical vocabulary in various contexts takes on a new significance related to this theme. Specifically, it indicates that it is not the individual signifier that is trying to be explained in the literature; rather, it suggests that an experience that is trying to be understood through the use of this narrow terminology. Furthermore, a careful examination of some of the more significant medical ontological metaphors will reveal a binary relationship between multiple signifieds of different contexts, which, I will argue, indicate the presence of Caruth's aporia.

One of the more relevant and frequently used terms in this theme is "malaria." In her discussion of the term malaria in her article "A Social Science Fiction of Fevers, Delirium and Discovery: *The Calcutta Chromosome*, The Colonial Laboratory, and The Postcolonial New Human," Diane M. Nelson refers to malaria as ". . . particularly unpredictable: it is not a thing in itself but a series of interconnections" (257). Nelson's analysis of this term situates it as a good

example of a vector within the medical schema as an ontological metaphor due to the signifier's increasing ambiguity as it gains relative meanings in different contexts. This term's repeated usage as a vector for communication allows it to be used differently in the context of colonizer goals and colonized/postcolonial goals. In the historical context of the novel, malaria is a rampant disease that needs a cure. Murugan's exposition about malaria's history and its research acknowledges that the disease affects the entire world being one of the most common diseases: "There is no place that's off the malaria map. . . ." (55) At the same time, however, he curiously frames it as a disease that is important to cure not only because of its prevalence but also, and perhaps increasingly, because of its impact on the last phases of colonial expansion (55-57). The correlation between the need for a cure and the colonialist motivations cast a particularly grim understanding on the malaria transmission discovery in that it connects the lexical instance with a meaning of opportunity in relation to the colonial motives.

The association of meaning regarding this lexical instance is furthered by Murugan as he unveils his counter-theory to history that marks the novel as science fiction. In his counter-theory to the historical perspective, Murugan suggests that the secretive counter-science group headed by Mangala specifically influence the colonial scientists' discoveries in order to achieve their own goals of a cure for death (106-107). This meaning associated with the term malaria from the colonized/postcolonial perspective, thus, retains its association with opportunity but differs in regards to benefactor. This same ambiguity of perspective in regards to the medical token of malaria is seen in the carrying of the disease by two of the characters. Within their respective timelines, Murugan reveals himself to be a carrier of the disease that serves as a counter-agent to his syphilis, and Antar experiences an episode of fever regarding the malarial parasite that destroyed his childhood village. While both characters reveal the negative sides of malaria in

regards to their symptoms, they also actively participate in the search for the counter-science through their respective connections with the disease, which forms the basis of the novel as science fiction. Murugan confirms this association within the novel as he refers to malaria as not “. . . just a disease. Sometimes it’s also a cure” (54). Thus, “malaria” becomes a micrometaphor of “malaria is opportunity” from these binary perspectives even though the perspectives vary greatly in the contexts of their signifieds.

A similar phenomenon can be found in the use of the word “experiment.” In the colonial context, “experiment” is indirectly used to refer to the testing that is done on the native population in regards to finding the malaria vector. I mention the terms indirect usage because it does not appear as often in the colonial context as it is couched within more conversant medical and scientific rhetoric of the person who is primarily recounting these episodes, Murugan. In these episodes, Murugan constantly alludes to the scientific nature of the work being carried out in the colonial laboratories through the use of microscopes, test subjects, theories, etc. In this context, the term used to describe the activities carried out with these tools in the colonial laboratories is “experiments.” The oppositional understanding of this term comes from the colonized/postcolonial perspective in that their own activities are also meant to be signified by the term “experiment.” Similar to the experiments of the colonial scientists, the counter-science group is also working with the malaria parasite using tools such as microscopes, scalpels, and test subjects as they influence the scientific discoveries of the colonial scientists to prompt a malarial mutation. Indeed, in explaining the relationship between these kinds of experiments, Murugan explains that Ross “. . . thinks he’s doing experiments on the malaria parasite. And all the time it’s him who *is* the experiment on the malaria parasite” (79). In both of these implied uses of “experiment,” each perspective believes that they are discovering new information about

their shared topic. The perspectives, however, are inherently different as they implicate each other in the role of test subject and, thus, create multiple and opposing signifieds for this particular signifier.

The opposing signifieds within this signifier create an opportunity for ambiguity that the novel increasingly explores. This focus on the ambiguity within the use of this particular lexeme can be seen from Urmilla's point of view as she contemplates a hypothetical physical relationship with Murugan: "What other word could there be for it, but 'experiment,' something new, something which she know was going to change her even if it lasted only a few minutes, or even seconds; something that was happening in ways that were entirely beyond her own imagining, and which she was powerless to affect in any way" (221). Her elaboration on the meaning implied by the signifier "experiment" reveals its function as a lexical tool for categorizing experiences via the medical schema. By using this signifier from the medical theme to organize her hypothetical experience with a more familiar schema, Urmilla reveals the term to not only be a metaphor but also uses the ambiguity of the signified to her advantage much in the same way that the opposing colonizer and colonized/postcolonial perspectives use it. Even using its diametrically opposed signifieds, the signifier "experiment" evokes, as in Urmilla's case "something new," which is indicative of scientific progress despite the respective contexts. Given this association, "experiment is something new" can be seen as an additional micrometaphor within the medical theme of the novel.

The use of the medical theme as a frame for these diametrically opposed perspectives reveals a larger concept related to thematic representation of metaphors. As both perspectives use these respective medical signifiers to categorize their experiences, the micrometaphors of "malaria is opportunity" and "experiment is something new" seem to suggest a megametaphor

regarding their framing as “Science is truth.” This megametaphor, then, functions on the schema level of the thematic analysis in order to show how these various micrometaphors relate back to a related but grander issue in the scope of the novel. This issue can be seen in the aporia created by the binary signifieds that manifested in the micrometaphors related to this megametaphor.

In looking towards the ambiguity created by the binary signification of each term, one can see an unresolvable gap form between the signifieds and their respective signifiers within the medical scheme. This gap and its resulting megametaphor relates back to Caruth’s aporia of representation. Specifically, the individual signifiers of this scheme such as “malaria” and “experiment” retain a colonial connotation when used in the historical context as it is repeatedly associated with the British history of colonization in India. Simultaneously, they also retain the opposite colonizer/postcolonial connotation in the counter-historical context even though they are being used in similar ways as ontological metaphors. Thus the “truth” in the megametaphor “Science is truth” reveals an issue of perspective that illuminates an unresolvable aporia in the signifieds of the various medical signifiers.

Additionally, the specific usage of these micrometaphors throughout the clearly distinct representations of chronology in the novel conveys additional aporia related to their narrative time. In looking at how the use of these micrometaphors and their resulting megametaphor influence the novel’s narrative time, it is made clear that the aporia of representation of these medical signifiers is realized only by the postcolonial characters. This process is made very much apparent as Murugan becomes the character leading the charge in uncovering and introducing some of the aporia related to this scheme and his influence on the later character of Urmilla. By making these aporia perceivable to postcolonial characters, the narrative reveals an aporia between the times of the initial colonizing events to the time that they are representable,

which invokes Caruth's concept of belatedness. Furthermore, the continued activity of the counter-science group and the continued use of the medical scheme to contextualize the postcolonial timelines reveals the related aspect of repetition. The aporia for this aspect of narrative time primarily rests in the continued binary signification of experiences within the medical theme. By continuing to refer to these experiences through this specific metaphor scheme that, as I have shown, is indicative of Caruth's other two aspects of aporia, the narrative shows that the incorporation of these experiences into a more appropriate mental scheme is not yet complete. Thus, the conveyance of these three aporia in the medical theme at the lexical level of the novel lay the foundation for considering it as a representation of trauma.

1.1.2 Technological

The technological theme provides a variant on the lexical analysis provided in the medical theme in that it is most prevalent through its use of personification. According to Lakoff and Johnson, personification is “. . . a general category that covers a very wide range of metaphors, each picking out different aspects of a person or ways of looking at a person. What they all have in common is that they are extensions of ontological metaphors and that they allow us to make sense of phenomena in the world in human terms. . . .” (34) In this definition, the concept of personification is directly related to that of the ontological metaphor in that they help us to understand a particular concept through its embodiment and presentation as someone or something else respectively. This understanding of personification and its correlation with metaphor is particularly useful in analyzing the signifiers of the novel's technological theme because in that it provides a way to understand technology's role in the context of the novel rather than the technology itself.

The predominant use of personification in *The Calcutta Chromosome* manifests in the character of Ava. In the novel, Ava is a computer system, specifically a unit of the AVA/IIe system, provided by the International Water Council to its employees who work off site like Antar. Early in the novel, this system is referred to as Ava, which is different from the model in that it loses its completely capital naming that indicates a product acronym and receives the more character-appropriate title case. More importantly, Ava receives the gender-specific pronoun of “she,” which marks a move from an object-oriented position in the narrative to one of a person. Furthermore, her processes receive increasingly human-like qualities the more they are described. For example, she is “determined” to get information in real-time, which frames the understanding of Ava not in the realm of processes and procedures executed by another programmer but as having a will of her own that she executes (4). This specific detail of her “personality” becomes important when compared to the way that it helps to frame her relationship with Antar in his work: “Once she’d wrung the last, meaningless detail out of him, she’d give the object on her screen a final spin, with a bizarrely human smugness, before propelling it into the horizonless limbo of her memory” (4). In this explanation of her behavior, Ava takes on not only human characteristics but also a specific positionality within the chain of command of Antar’s job. In short, Ava’s personification is a micrometaphor for how “Ava is boss.” By receiving human attributes, Ava’s actions within the story become understandable as they removed agency from the real human, Antar.

Antar’s experiences with Ava also remind him of other relationships with real people, which invites a comparison between these situations to provide context for this relationship’s meaning within the text. Specifically, Ava seems to remind Antar of his childhood experiences with the “dust-collecting” Hungarian archaeologist in which she paid the local children to do

small tasks for her as she performed archaeological tasks (6-7). Antar's direct correlation of these two experiences within the narrative inextricably connects Ava's actions colonial figure. Moreover, the forceful language of her seemingly autonomous relations with Antar such as her reporting his behavior to the International Water Council (5) and her explicitly telling Antar to "shut-up" in multiple languages (7) indicate that this relationship also bears resemblance to other colonized/postcolonial roles depicted in the novel. In one specific recollection of similar relationships, Murugan notes how Laakhan, while working for Ross, ". . . gets pretty good at doing luggage impersonations. 'I left Secunderabad with the smallest possible 'kit,' says Ronnie, 'my microscope and my faithful Lutchman'" (77). This correlation of actions through the micrometaphor of Ava's personification, therefore, has two major effects: 1) it elevates the people and objects associated with the centralized authority to a superior status and 2) it parallels the denigration of colonial and postcolonial individuals to objects or, more specifically, resources. This function serves to inform the megametaphor for the novel of "technology is agent" as it strings many different instances in which associations with technological superiority (or those with access to its workings) indicate agency.

As the novel progresses, however, the meanings associated with this megametaphor reveal ambiguity as the actions of the "objects," while still working within the boundaries of their subjugation, obtain a kind of agency. For example, Antar, in the later portions of the novel, uses Ava for a number of purposes in order to accomplish tasks that provide him more knowledge about the counter-science group, its workings, and Murugan. By acting within his boundaries as a user of Ava and simultaneously calling her authority over him into question, Antar's actions introduce a level of ambiguity into the understanding of the megametaphor through its presence as an opposing perspective within the "Ava is boss" micrometaphor.

Specifically, technology (in this instance, Ava) still appears to be the agent, but it is actually being driven by a previously-excluded agent (Antar). This is also parallel to the actions of the counter-science group in their successful manipulation of the colonial experiments in order to further their own research as the repeated stories about Laakhan and Mangala throughout the narrative. These collective micrometaphors that introduce a level of ambiguity within the megametaphor are also the aspects that relate to the science fiction content of the novel. By paralleling this alternative perspective as science fiction against the historical perspective of the novel, the collective of these metaphoric instances seem to suggest the exposure of a larger issue in the novel's content.

The use of technology in these hidden roles is particularly reminiscent of the roles of the students of the post-industrial schools in Vilém Flusser's *Posthistory*. In the "Our Schools" chapter, Flusser notes how the students of the post-industrial school will invert the notion of the industrial school education by not learning in a way that can be accomplished more effectively by computers (148). Instead, they will learn how to program the "apparatus" in a subversive way: ". . . behind the backs of the apparatus, the students of the school of the future will transcend the apparatus. . . . They will play with the rules that they learned. . . . They will transcend the apparatus *theoretically and concretely*" (Flusser 148). This secretive behavior of the post-industrial students is similar to the colonized and postcolonial subject's behavior in regards to personified technology in *The Calcutta Chromosome* in that they both create an aporia within the understanding of technology's role as agent. This ambiguity behind the agency of the technology is what drives the megametaphor of "technology is agent" as another representation of the binary perspectives behind the metaphorical representation. According to the technology/colonizer perspective via the technological micrometaphors, agency is reserved for

those associated with technological superiority while others, specifically colonized and postcolonial subjects, become reduced to objects of that agency. Contrarily, the colonized and postcolonial subjects present a perspective embodied within the technological micrometaphors in which the technology/colonizer is an object to be manipulated within specific boundaries relegating agency to the colonized/postcolonial characters. This signification of different values to personified technology and those with access to it within the technological theme shows how personification similarly presents ambiguity in regards to the thematic megametaphor.

The lexical association of personification for Ava thus reveals a very interesting set of aporia that further place its metaphorical system in the realm of analysis for trauma. In considering the aporia in representation between the signified agency associated with the technical apparatus that is Ava, the binary perspectives of the colonizer and the colonized/postcolonial again comes to light. By signifying agency to what the other perspective would identify as technological objects, both perspectives indicate a vast difference in their communication of “truth” and “history.” This aporia regarding the signification of agency leaves the narrative world in a state of ambiguity regarding its representation as the agents are paradoxically known and unknown.

Additionally, this ambiguous significance appears in later chronological sequences throughout the novel and in repeated iterations of the same patterns indicating aporia within the narrative time. As with the medical scheme, agency regarding the colonized/postcolonial perspective is never realized within the time frame of the occurrence. Instead, these moments of agency by the colonial characters (objects in the historical perspective) are always recalled in the postcolonial perspective and, thus, attributed value at a later chronological time. Significantly, the postcolonial attribution of agency, such as the agency Antar exhibits with Ava, is never

realized by the characters within the novel. This relationship is left to the reader to attribute after reading the events from the postcolonial perspective. The continuous delay of realization is what connects the lexical analysis of the technological theme with Caruth's concept of belatedness. Additionally, the repetition of these aporia within the technology scheme are indicative of a repetition that extends from the story of colonial memory through to the memory of the postcolonial individual. By not indicating a finite ending of realization within the novel, the repetition implies a lack of another, more appropriate scheme for representation. Through these representations of aporia regarding the megametaphor of the technological theme, the use of personification within this theme can be seen as a founding characteristic for considering the novel as a representation of trauma.

1.1.3 Postcolonial

In examining the postcolonial theme at the lexical level, one will need to understand another process related to metaphor, metonymy. Lakoff and Johnson explain metonymy and metaphor as “. . . different *kinds* of processes. Metaphor is principally a way of conceiving of one thing in terms of another, and its primary function is understanding. Metonymy, on the other hand, has primary a referential function, that is it allows us to use one entity to *stand for* another” (36). This explanation is not to emphasize that metonymy is not meant to aid in understanding a concept; rather, it explains the process in which a piece represents a whole. Used in a way, metonymy becomes a referential technique that can help better one understand the whole by focusing on a smaller, more manageable referent. Through this understanding of metonymy, more subtle individual actions within *The Calcutta Chromosome* can be seen as representative of much larger issues related to the previous ideas of binary perspectives in the other themes.

One of the more significant examples of metonymy in the postcolonial theme can be seen in the story in which Grigson tries to trick Laakhan into revealing his origin through analyzing his language. In Murugan's recounting of this event, He notes emphasizes that Grigson becomes curious about Laakhan and his use of language because Ross is unable to offer any conformation about Laakhan's background (he never bothered to ask) and because it is his area of specialization. In introducing this new plan for identifying and classifying Lakhann, Murugan notes that "[b]y this time it's not just Lutchman's retroflex dentals that Grigson's interested in: he's developing a personal interest in getting behind his labials" (91). In this account, Laakhan's language becomes framed as part of his identity and, therefore, a resource. Moreover, language receives the characteristics of an ontological metaphor as Laakhan's labial's become something that can be circumvented or gotten "behind." Using these metaphoric expressions, Laakhan's language functions as a doorway that is both shielding and part of his identity, which Grigson believes he can get around using his knowledge of linguistics. This metaphoric relationship is furthered when Grigson tricks Laakhan into pronouncing a loan word by pretending to engage in a meaningful conversation: "I've got you natives figured: I know exactly where every single one of you belongs. Those loan words will give you away every time" (94). Here, Grigson expresses that his learned knowledge of language is greater than Laakhan's native knowledge allowing him the ability to overcome Laakhan's defenses to get what lies behind it.

The consequences of Grigson's metaphoric navigation around Laakhan's defenses have direct implications on the larger postconial theme in the form of a micrometaphor. Specifically, Grigson's navigation of Laakhan's speech has allowed him to get "behind" Laakhan's language and obtain the information needed to categorize him as he would an object, along with the other "natives," where he "belongs" (94). This usage of spatial metaphor in connection with language

allows for the creation of a micrometaphor regarding the relationships between language and colonizer and the colonized even though the topics of discussion are Grigson, Laakhan, and Laakhan's language. This idea is at the heart of Tuomas Huttunen's chapter "*The Calcutta Chromosome: The Ethics of Silence and Knowledge*" when he notes that "[i]n *The Calcutta Chromosome*, knowing something is equivalent to the linguistic appropriation of the object of knowing" (29). Through Huttunen's observation of the novel's use of language, one can see that the language of the colonial subject in this instance becomes an object that, when completely known, introduces an element of control over the person that it represents. This action becomes relevant to the postcolonial theme in relation to the respective roles portrayed by the characters relating to the colonizer and the colonized as well as the function of language as representative of identity. Thus, the micrometaphor for this metonymic relationship can be represented as "language is identity."

This same micrometaphor of language and its relationship to identity is also used in a later chronological reference to the counter-science group that illicit another context for its signification. As Murugan presents his counter-theory to Antar regarding the counter-science "team," he explains their very identity resides in their secrecy and, therefore, resistance to language: "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" (104-105). This explanation of the counter-science group also associates the group's collective identity with the idea of language just as represented in the metonymic relationship from the colonist perspective. The difference here, however, rests in the signified context bearing on this metonym as the presence of silence

supplies the colonized with agency rather than taking it away. In his analysis, Huttunen explains this duality in perspectives and its paradoxical signification:

It represents a lack, or gap, in the Western discourse: it is an area that has not been defined. It has no meaning and therefore does not exist in this discourse. It is precisely this lack of meaning—the fact that the hegemonic discourse has omitted this area of the world from its process of meaning production and sees it as irrational—that empowers silence, which can be considered a form of feminine counterforce to Western male-centered science and rationalism. (25)

In the colonized/postcolonial perspective, the lack of language is a refusal to truly be known rather than an admittance of inferiority, which exposes an unwritten connection across the individual metonymic representations. Specifically, the micrometaphor correlation between the subaltern identity and speech suggests a megametaphor of “Subaltern is Silence.”

Both of these metonymic examples embodied within this megametaphor perpetuate the pattern of binary perspectives enclosed within a given signifier revealing an aporia of representation. The basis for this aporia of representation comes from postcolonial critic Gayatri Spivak’s principle that the subaltern cannot speak. In her article “Can the Subaltern Speak?” Spivak provides a postcolonial perspective to the Euro-centric post-structuralist notion that the subaltern can speak by arguing that the continued objectification of the third world subaltern prevents the possibility of speech even when language is present: “The analogy between transference and literary criticism or historiography is no more than a productive catachresis. To say that the subject is a text does not authorize the converse pronouncement: the verbal text is a subject” (297). In applying such a perspective to the first example as seen from the colonial point of view, the ownership or knowledge of the language equates to knowing the person from whom

the language originated, the colonized, which allows the one who understands the function of language to assert agency within that relationship. Contrarily in the second instance, the agency is given to the subaltern as the individual refuses to be known rather than losing stake in agency. In this way, the silence rather becomes a signifier for what Huttunen calls “. . . the experience of the ultimate truth, which has not been changed through knowing—in other words through the meanings carried by language” (31). Here, the silence of the subaltern manifests as actual silence even though it holds the ability to communicate much more. This unresolvable binary from within the signification of silence via agency presents an aporia of representation between the concept of “history” and the presentation of “truth” that is consistent with the other lexical analyses of this novel’s themes.

In a way, this analysis can be seen as conflicting with Spivak’s notion that the silence of the subaltern cannot be read from a text because this analysis specifically focuses on representations within the text of *The Calcutta Chromosome* to infer its use as a representation of postcolonial identity as traumatic. I would, however, suggest that the analysis of the text as a representation rather than a psychoanalytic subject is what prevents this conflict of ideas. Specifically, this text makes use of silence in a postcolonial science fiction contexts in order to offer a rationality for its existence. This presentation serves to frame the silence in a way that does not invite an analysis of the subaltern but rather an analysis of the postcolonial situation being represented. In other words, the novel frames the narrative in a way that does not make its content applicable to just one particular person or character, which would open him or her up as a subject for psychoanalytic analysis. Instead, it invites an analysis of the various experiences and situations of a silent perspective due to the utter lack of voice. By multiplying its various

contexts from the postcolonial science fiction perspective, significance is not placed on what the silence necessarily means; instead, it draws attention to the gap.

In addition to the aporia of representation indicated in the signification of silence, the recognition of this agency by the postcolonial characters of the novel can be seen as an engagement with the traumatic aporia of narrative time, belatedness. In his chapter “Notes on Trauma and Community,” Kai Erikson strives to communicate some key factors about communal trauma, one being that trauma is a result rather than an event: “. . . it is *how people react to them* rather than *what they are* that give events whatever traumatic quality they can be said to have” (184). By connecting this chronological definition of trauma to Caruth’s concept of belatedness, one can see how the attribution of diametrically-opposed subaltern agency at a later chronological time by the postcolonial characters becomes indicative of trauma. This belatedness and its recounting in Murugan’s history also suggests a certain level of repetitiveness as he continues to suggest that this maintenance of silence on behalf of the subaltern throughout colonial and postcolonial history has resulted in the continued “mutation” of the Calcutta chromosome. These “mutations” throughout the various points of linear history are, thus, indicative of trigger stimuli as they signal further incorporation of the remembrance process into the trauma. Thus the metonymic relationship of silence and subaltern agency reveals a larger aporia that provides a more holistic analysis of this theme in relation to the previous thematic lexical analyses.

1.1.4 Political

The political theme, like the postcolonial theme, uses a variety of metaphorical techniques; however, its metonymic representation is perhaps the most pervasive use of its lexical level representation within *The Calcutta Chromosome*. Specifically, this procedure of

representation via metonymy can be seen in the correlation between iconography and their intended representations. One of the most represented structures in the novel, the Ross memorial arch, is described as a structure that contains a bronzed medallion of Ross's image with an inscription regarding Ross's nearby discovery to the right and a marble inscription of 3 verses of his poem "In Exile" to the left. This memorial is metonymical in that it is a representation of Ross and his discovery as conveyed by history and a fulfillment of the Ross family legacy that Murugan recounts it from Ross's father's perspective: "'Our family's been here in India since it was invented and there's no goddam service here doesn't have a Ross in it, you name it, Civil Service, Geological Service, Provincial Service, Colonial Service. . .'" (53). In this way, the literal inscription of Ross's name, image, and language on the monument serve as a signifier for the history that Ross' father allegedly indicates through Murugan's re-telling of the colonial historical perspective.

Moreover, the Ross memorial arch also conveys the significance of the colonized perspective of history in its absence from the memorial. Indeed, the absence seems all the more indicative of the silence of the colonized historical voice in the lines of "In Exile" that are not represented on the memorial but Murugan repeats aloud in his visit. These removed stanzas specifically refer to the population as "'A race of wretches caught, /Between the palms of need/And rubbed to utter naught, /The chaff of human seed'" (42). Ross's metaphor for the people on whom he carried out his experiments as scraps of his research conveys the utter lack of perception for a historical perspective from the colonized, but its utter removal from the historical monument suggests an agency over even the existence of such a voice. In this way, one can see the metonymy of the political theme as an extension of the postcolonial theme in that language is specifically aligned with agency. The political theme's use of metonymy, however,

differs in that the use of language is only part of the metonymy. In the political metonymy, it is the iconography of the entire memorial that can be seen as a signifier of history from which the colonized perspective is denied any representation.

In contrast to this metonymic representation of colonial history and colonized silence, we also receive a colonized/postcolonial iconographic metonymy in the form of the clay dolls. These clay dolls are eventually revealed to be miniature clay icons of Mangala holding a crude version of a microscope and pigeon. In every way, these icons seem to exude the opposite features of the Ross memorial arch: where the arch is grand, the clay figures are tiny; where the arch is made of expensive metal and stone, the icons are made of cheap clay; where the arch is publicly visible, the icons are hidden; where the arch is forgotten, the icons are actively used; and, most specifically, where the arch conveys history through Ross's words, the icons convey a history of silence. Moreover, the first appearance of one of these icons is in an alcove behind the Ross memorial arch where some of the stones had been removed (44). The secretive placement of the icon within the larger memorial to colonial history is significant in that it provides an example of possible signification for the silence by suggesting that it is indicative of agency similar to that in the postcolonial theme. This possibility is again presented in a different context later in the novel as Urmilla and Murugan go to Kalighat to find out the story behind the mysterious clay icons. Specifically, after asking the adult workman about the image, Urmilla and Murugan find no one who claims to be familiar with the image; however, they find a small girl who tries to re-create the icon's position of holding a microscope who tells them that the image is of "Mangala-bibi" and her father "makes a lot of them" (235). This confirmation of the identity of the icon and an empowered figure of silence as well as the icon's current production and wide distribution again emphasizes the icon as a metonym for the subversive possibility of silence by the subaltern.

These specific metonyms of “colonial history is one grand monument” and “subaltern history is many common icons” show relations to the postcolonial theme’s micrometaphors regarding language and identity; however, their unique factors specifically related to their metonymic relationship with iconography seem to also convey a slightly different macrometaphor related to the identity, “Subaltern is fractured.” Similar to the other macrometaphors, this macrometaphor carries within it different signifiers based on the various significations of the binary perspectives of the colonizer and the colonized/postcolonial. From the colonial perspective, the fractured perspective is irreconcilable and might as well be represented as silence since agency in this perspective lies with the conveyance of language, which can be seen in the multiple representations of a singular historical event within the multiple representations of the Ross memorial. Contrarily, from the colonial/postcolonial perspective, this silence in colonial history is indicative of the subaltern’s agency to refuse access to its identity and provides multiple opportunities for subverting the colonial history. In her article “*The Calcutta Chromosome: A Novel of Silence, Slippage and Subversion*,” Suparno Banerjee supports this indication of subversion when noting that “the subaltern disclaims knowledge in the sense that this knowledge is not ‘knowledge’ in the conventional normative discourse. The colonizer by definition is excluded from this knowledge, because the subaltern is a subject position that the colonizer can never assume” (54). It is through this signification of exclusion with opportunity that the metonymy used in the political scheme indicates a correlative subversion of the colonial perspective through the colonized/postcolonial perspective.

As in the other thematic analyses, I suggest that the signification of this lexical manifestation is indicative not only of the megametaphor but also of structural aporia which relate it to the larger analysis of trauma within the narrative. In looking at the diametrically

opposed significations of the colonizer and the colonized/postcolonial perspectives in these two metonymic representations, it becomes clear that the signified consists of a binary relationship that creates a gap in its representation. Specifically, the metonymic relationships depicted through this theme and idea of subversion indicate that the two perspectives provide almost exactly opposing values for each of the given representations, which relates to Caruth's idea of representational aporia. In her same article, Banerjee further suggests that this inherent binary is where Ghosh diverges from the Spivak construction of the subaltern ". . . by positing that the very conditions that apparently make the subaltern vulnerable hide its source of power. This is a completely different notion of power that debunks the conventional model and begs the reader to ask where power really lies" (57). While I agree that the representation of agency in this novel is strikingly different from Spivak's model of the subaltern, I would again stress the value of the narrative as representation rather than subject. By analyzing the narrative as a representation rather than an analyzable subject, this analysis does not invalidate the value of the subaltern but rather draws attention to the silences of the subaltern and posits their significance through the recognition of the representative aporia.

In addition to this exhibition of representational aporia, the metonymic instances in this thematic scheme also exhibit aporia within the narrative time. Specifically, the quality of belatedness can be seen in the megametaphor as, once again, significance towards these manifestations of silence are only given by various entities after their initial manifestations. For example, the significance of the clay idols found in the beginning of the novel is not revealed until the latter portion of the novel, which is what provides the signification needed for understanding the icon as being subversive. Additionally, the icons and the arch are repeatedly used throughout the narrative as signs and reference points for the characters regarding the two

paradoxical histories, one spoken and one silent. This repetitive reference back to these particular icons by various characters and their relations to their respective perspectives shows that this experience is not limited to the colonized perspective. Instead, it offers a broader inclusion of the remembrance process to include the postcolonial perspective as these characters engage with the aporia of these metonyms. Thus, the metonyms of the narrative's political theme exhibit characteristics of Caruth's aporia that are relative to the other dominant themes implying that they are indicative of another, more holistic issue of trauma.

Through this thematic analysis of *The Calcutta Chromosome*'s use of metaphor and its related functions of personification and metonymy, one can see how the lexical level conveys key aporia related to the understanding of the novel as a representation of postcolonial trauma. While this analysis does not suggest that all metaphors and their related functions are indicative of trauma, it does suggest that this literary and linguistic tool is particularly well suited for analyzing the conveyance of trauma in literature at the lexical level as it serves as a way to convey understanding of more abstract concepts while not providing a scale correlation. Furthermore, this analysis suggests that the usage of the subclassification system of megametaphor and micrometaphor further assist in the correlation of represented metaphors to the traumatic concepts that may indeed defy even metaphorical representation. In regards to *The Calcutta Chromosome*, one can see how the ontological metaphors represented in the medical terminology such as "malaria" and "experiment" become representative of the megametaphor "Science is truth." Additionally, an examination of the personification of Ava within the technology theme reveals the megametaphor of the novel, "technology is agent." Also, the explanation of how metonymy is used in the narrative to convey the significance behind the megametaphor "Subaltern is Silence" shows how metaphor's related processes influence the

postcolonial theme. Finally, the expanded look at metonymy in the political theme shows how iconography conveys the related megametaphor of “Subaltern is fractured.”

A further examination of these megametaphors reveal each to convey related aspects of Caruth’s aporia indicative of trauma. Specifically, the lexical values in all of the thematic schema seem to recall an unresolvable paradox in their respective significations due to the binary representation of both the colonizing and colonized/postcolonial perspectives. Additionally, aporia in narrative time in relation to belatedness is repeatedly seen in the continued removal of historical significance to a later chronological time within the novel. Furthermore, the repetition of the lexical values and continued signification throughout the various time structures within the narrative show the lack of assimilation of these colonial and postcolonial experiences into the postcolonial memory. The recognition of these aporia help to connect the dominant thematic analyses of the lexical level in a more holistic way than they could be examined individually and provides the basis for expanding these thematic analyses into the character and narrative levels.

2 CHARACTERS AS CONNECTORS OF POSTCOLONIAL TRAUMA BETWEEN LEXICAL AND NARRATIVE DISCOURSE IN *THE CALCUTTA CHROMOSOME*

The characters of *The Calcutta Chromosome* also serve as significant elements of analysis regarding the novel in that they serve as connections between the lexical and narrative discourse levels of the text. Key aspects of this feature are used in the narrative discourse as will be seen in the “Voice” sub-section of the narrative analysis section; however, such an analysis does not fully explore the roles of the characters within the narrative as it specifically focuses on the influence that particular characters exert onto the narrative discourse. Additionally, these characters, both those who contribute to the aspect of voice and those who are “silent,” exhibit features of Caruth’s aporia in their respective thematic roles. This use of all characters within the novel encourages the need to analyze them in terms of connecting elements for the communication of trauma within the novel. An investigation of key characters regarding the four dominant themes of biology, technology, politics, and postcolonialism, will, thus, reveal Caruth’s three traumatic aporia of representation, belatedness, and repetition in a way that exposes their roles as connecting elements between the lexical and narrative levels.

To begin such an analysis, it is necessary to introduce the concept of character and its relevance to my analysis of *The Calcutta Chromosome*. In his chapter on “Character” in *The Cambridge Companion to Narrative*, Uri Margolin defines a character as a “storyworld participant” (66). This concise definition is significant in understanding the role that characters play within a given narrative because it identifies them as participants. By describing the characters as participants within the story, Margolin has also identified that the audience is not considered a character and, therefore, not a participant within the story’s events. This concept is not to be confused with the interactive characteristic of the text at the narrative discourse level,

which will be further discussed in the third section of this thesis; rather, it identifies the entities that engage within the events of the story through direct and indirect actions with consequences for the narrative itself. In this way, the characters serves as elements through which an audience can engage with the text itself. Mieke Bal's definition of characters in *Narratology: Introduction to the Theory of Narrative* further divides character into a sub-category of "actor" in which "... actor is a structural position, while *character* is a complex semantic unit" (79). This definition adds another significant attribute to characters in that they become similar to ontological metaphors discussed in the first section of this thesis. By identifying a character as a "semantic unit," Bal references characters metaphorically as though they are containers for the semantic content attributed to them by the lexical representations provided within the text. Through these two definitions, one can see how the characters become significant connecting mechanisms between the lexical and narrative levels.

Within the respective works of Margolin and Bal, both theorists also supply key methodologies through which to analyze characters within literary fiction. Margolin's overview of three theoretical perspectives ends on an examination of character as a mental construct, which places more emphasis on "... its textual base (cues, sources), the operations involved in its formation, the principles (rules, regularities) governing or guiding these operations, and the architecture of the final construct" (76). This theoretical perspective inclines analysts to include information solely and respectfully regarded in his previous two overviews and encourages a critical view that also takes into account an audience's perspective and the contexts surrounding both the text and the audience. In this way, his perspective aligns with the more in-depth theoretical explanation of character provided by Bal as her explanation of character leads with an explanation of analytical problems regarding the influence of external contexts onto a given

analysis (80-82). Her analysis of character attributes is divided into two categories: predictability and construction of contents. In the predictability section, Bal explains that the data presented on a character can be used to predict his or her actions within a given story, which provides a frame of reference for what we know about that character (82). Additionally, she considers the repetition, accumulation, relations, and changes regarding a character's attributes over time to contribute to an overall understanding of the given character (85-86). Using a combination of these various attributes, I will proceed in analyzing the characters of *The Calcutta Chromosome* for their influential roles in regards to the narrative and show how these roles help to represent trauma within the postcolonial identity.

2.1 Identifying Characters and their Roles in *The Calcutta Chromosome*

Given the larger goal of examining the roles of the characters within *The Calcutta Chromosome*, it seems most beneficial to focus on the most relevant characters for the various thematic analyses. This focus will allow for a more relevant view of the roles inhabited by the characters who provide perspectives both inside and outside of the narrative structure while also maintaining focus on the relevancy that they play between the lexical and narrative levels. Through this focused analysis via the thematically most relevant characters, I will provide a more concise and cohesive assessment of the characters and their roles within the novel and how the relationships between them are indicative of Caruth's aporia.

2.1.1 Medical

In looking at the characters through the medical theme, I will focus on characters who have direct contact or relation to the medical history of Ross's discovery. Given these criteria, the most relevant characters to discuss would be those of Mangala, Laakhan, and Ross. Ross differs from the rest of the characters in that he is a referential character: the Nobel-winning

scientist credited for discovering the transference process of the malaria parasite. Bal describes referential characters in her discussion on predictability specifically in relation to historical figures due to the fact that readers of the text are expected bring a historical reference to that character (83). The other characters in this group, Mangala and Laakhan, are not referred to through external sources specifically; rather, the only things we know about Ross's native assistance are given through the excerpts provided from his journal, which usually dismiss the native population's role in his activities. Through the inclusion of an external referent, the audience comes to the story expecting Ross to behave like a Nobel-winning scientist and not knowing what to necessarily expect from the historically unknown characters.

The narrative content, however, provides a number of characteristics about Ross and his native assistants in a quasi-historical context that is meant to change the audience's referential perception of these characters and their roles. In her article discussing the utopian characteristics in *The Calcutta Chromosome's* narrative structure, Martina Ghosh-Schellhorn acknowledges this duality of narrative by examining it in layers. Specifically, the narrative refers to the historical narrative of Ross's colonial discoveries through the monument inscriptions and Murugan's recollection of that history while it also literally presents a historical narrative for the colonial native assistants of Mangala and Laakhan (198-199). By presenting a narrative for the colonial assistants and only referring to the historical narrative in bits and pieces, Ross is presented as a colonial fool, one who is, as Murugan describes, narrow-minded to a fault: "[i]f anything but a parasite comes calling, Ronnie's out to lunch" (76). Parallel to this change in Ross's character, the native assistants without any historical reference are portrayed through the novel's content as the real discoverers of the malarial transference and, ultimately, the group controlling Western scientific discovery. This accumulation of traits only grows as the narrative continues to follow

the scientific trail of experiments regarding the native assistants and their work on the Calcutta chromosome to achieve interpersonal transference, or immortality. Thus, the presentation of these characters and their roles within the novel indicate a reversal of referential expectations.

An examination of the narrative reversal concerning these respective referential character roles will reveal them to contain Caruth's aspects of aporia and, thus, representations of trauma. Specifically, the binary representation of these key characters between the two narratives is similar to the construction of traumatic memory through van der Kolk and van der Hart's concept of dissociation. This "... horizontally layered model of the mind ..." explains a situation in which a subject does not remember a traumatic memory because he or she has encapsulated it within "... an alternative stream of consciousness. ..." (168). In this construction, one can see the novel's narrative of history as a parallel version of the colonial medical history that retains the same characters but provides different attributes in order to express something traumatic about the historical event. As the previous analysis of the referential and story roles of these characters revealed, both seem to switch roles in regards to agency and power in their respective narratives. As a representation of trauma, the narrative regarding these characters cannot directly reflect the trauma; instead, it uses characteristics of these character roles to emphasize the paradox indicated by their representation. One way in which the characteristics emphasize this presentation as paradoxical is that the colonial characters for whom the narrative presumes to tell a history remain silent. This representational aporia within the narrative content, then, presents a paradox of having these silent characters in roles of historical agency. Through the use of these characteristics within the related character roles, one can see how the postcolonial theme's characters are indicative of representational aporia.

Additionally, the presumed roles of agency that these characters embody within the alternative narrative also carry an aspect of belatedness in that their presumed agency is only discovered through the postcolonial characters through minute historical details that fail to immediately fall within the colonial pattern. Given their actual silent roles and the “discovery” of their agency from other characters, the experience seems to tell more about the postcolonial characters rather than the colonial characters as they are the ones actively attributing agency onto these silent historical figures. Thus, this act of attribution is removed from the historical time of the event indicating belatedness. Moreover, the characteristic of interpersonal transference attributed to these silent colonial characters is a characteristic that allows for these characters to actively intercede throughout postcolonial history. In his article regarding the informational economy in *The Calcutta Chromosome*, Pramrod Nayar explains that the characters are not only representations of information but that their various bodies consist of information, which enables the Calcutta chromosome to mutate throughout the various embodiments (57). Encapsulated within the medical metaphor of the Calcutta chromosome, the agency that this medical “discovery” allows the colonial characters is primarily used as a tool for explaining moments of postcolonial history in which the postcolonial characters experience a similar removal of agency. Thus, the ongoing denial of agency for the postcolonial characters is repeatedly displaced onto these historical characters in an attempt to reconcile a continued lack of agency.

2.1.2 Technological

In looking at the characters most relevant to the technology theme, the personified technical representation of Ava becomes the most obvious choice for examination. As discussed in the lexical analysis of this thesis, the lexical level personifies Ava as a character in her interactions with Antar throughout the novel. In the beginning of the novel, Ava could easily be

described as bossy in her constant requests from Antar on the minutest operations as well as vastly intelligent in her connections to the networks of the powerful International Water Council. The detail of her intelligence is most striking when she repeats Antar's own command of "shut up" back to him in various dialects, ultimately arriving at the one from his remote childhood home (7). Flusser explores the darker side of technology that Antar discovers with Ava in his reflections on "Our Knowledge" when describing how the expanse of scientific knowledge shows knowledge as unlimited, and, if unknowable, absurd (41). In the showing of her seemingly unlimited amount of knowledge, Ava shows the absurdity of the scientific knowledge she embodies. This characteristic of absurdity when it comes to scientific knowledge places her in a position of power in her relationship with Antar. By exerting authority over her human counterpart, Ava correlates with Flusser's description of the controlling technological "apparatus" that removes agency from its users (42). As an "apparatus," Ava's character role as a legitimate threat to the agency of the main character Antar.

This relationship, however, is also marked by a distinct change in the characterization early in the novel. As the narrative progresses, Antar slowly begins to use Ava as a tool for extracting seemingly irrelevant information from the historical archive of the International Water Council. Through this partnership, Ava's memory functions objectively like technology described by Ernst in his elaboration of media archaeology. Ernst describes this archaeological gaze as ". . . enumerative rather than narrative, descriptive rather than discursive, infrastructural rather than sociological, taking numbers into account instead of just letters and images" (70). This idea of objectivity is not meant to be oppressive; rather, Ernst suggests that narrative versions of history and the media archaeological perspective exist in parallel lines in that they cater to different aspects of history (54). This use of Ava as an objective tool indicates an

extreme change in her characterization from her initial representation and increases as Antar continues to rely on her throughout the narrative's progression.

This binary presentation of Ava's character role in the technology theme indicates a traumatic representation through the use of Caruth's three aporia. In looking again to van der Kolk and van der Hart's portrayal of dissociation, one can see similarities between Ava's characterization and the historical characterization of the colonizing characters of the historical narrative. Her seemingly bossy attitude, attribution of authority, and ability to reconstruct a historiography through pieces of information maintained by a centralized authority are key characteristics that she shares with the previous colonial character of Ross. The parallel characterization of Ava and the colonizer represented by the historical narrative invokes Bolter and Grusin's concept of remediation: ". . . the representation of one medium in another. . . ." (45) In using the concept of remediation to examine the initial characterization of Ava, one can see how Ava's personification identified in the lexical section is extended to her characterization as she becomes an embodiment of the colonizer in the postcolonial context. This aspect of remediation is further exhibited in her characterization change to an archival tool through which Antar explores the network of possibilities regarding (post)colonial agency in that it parallels the characterization of Ross in the medical theme as a tool for the colonized counter-science group.

While this parallel between Ava and the colonizer Ross reveals a similarity between characterizations, it also exposes a representational aporia associated with Ava's characterization. Specifically, it exposes that her personification allows for her to be a representation for the colonizer even though her actual function is that of a machine. As a machine, there is nothing inherently oppressive about Ava, which presents her character role as the remediated colonizer as a paradox. By revealing this paradox, her character role as a

representation for the oppressive force for which Antar cannot see becomes more apparent as he progresses through the historiography provided through Ava. In this way, Ava's paradoxical characterization of both a machine and a remediated colonizer presents a representational aporia for this character role.

Additionally, her paradoxical characterization carries with it aporia related to narrative time. Specifically related to this category of aporia, Ava's ability to search through the historical archive for pieces of information mirrors the flashback experience often associated with trauma. Antar's attempted search through Ava's network for various pieces of information from different perspectives to construct a historiography is presented through fragments within the narrative, which mirror the process of storing traumatic memory. According to van der Kolk and van der Hart's overview of psychobiological perspective of trauma, the relegation of traumatic memories that are not able to be categorized and understood through linguistic representation, a "speechless terror," will be experienced instead in iconic memory via various repetitive and intrusive physical manifestations (172). In comparing the retrieval characteristic of Ava to this concept of traumatic memory storage, one will notice that Ava's memory is composed of fragmentary historical documents. Moreover, the way that this information is stored within the narrative parallels the traumatic memory storage process and representation described by van der Kolk and van der Hart.

In looking at Ava as a system of collecting and organizing memory, one can begin to see indications of belatedness and repetition in her characterization. When Ava brings the fragments of historical information to Antar, it undergoes a signification process that incorporates it into the narrative. This process is important in that this signification is noticeably different from the referential historical narrative. This belated process of signification from the time of the

historical record to the time that it is presented to Antar indicates a temporal delay in the signification of the postcolonial historical memory contained within these fragments as made possible through the use of Ava. Moreover, these pieces of information retrieved by Ava literally pop up on Ava's display they become available regardless of how convenient the timing may be for the subject, Antar. One example of this characteristic is presented at the onset of Antar's illness as he goes to take a nap. Just as he is about to sleep, ". . . Ava began to chirrup a summons twenty minutes later" making him rise and go back to her screen to receive the results of his inquiry (128). This interface allows Antar to control only his inquiry into the information but not necessarily its actual appearance. Thus, the retrieval of information made possible through Ava bears similarities to van der Kolk and van der Hart's repetitive and intrusive physical manifestations of iconic memory within trauma. Through these aporia seen in her characterization as a remediated colonizer, Ava's character role presents a representation of trauma related to postcolonial memory.

2.1.3 Political

One of the more interesting characters through which to examine the political theme of the novel is Urmilla. Throughout the novel, Urmilla is a woman with a fearsome presence as she pokes and prods public servants throughout the day for interviews using her authority as a reporter for *Calcutta* magazine. With several representations throughout the novel exposing a temper when denied the information she wants and a knack for circumventing informational obstructions, Urmilla is initially characterized as a powerful female figure. This characterization, however, changes about half way through the novel as she finally makes it home from her long day at work. In this scene, the audience learns that she is one of nine family members living in a tiny apartment in which she sleeps on a cot in the bathroom (130-131). Soon after, she holds a

conversation with her mother in which her mother persuades her through guilt into performing a household chore of cooking for a guest related to her brother's up-and-coming football career even though it would affect an important appointment for her own job: "'Urmi, what are you saying?' she sobbed, 'Are you saying your job is more important than your brother's life?'" (133). Despite her protests, Urmilla relinquishes control to her mother and agrees to perform the task and refuses to say any of the protests that she is thinking (134). At this point, the audience realizes that the agency of this character up until this point in the novel has been an illusion.

In understanding this characterization of Urmilla, we see a character that presents herself as an active agent in her own life via her career until it comes to her family, which uses stereotypical convention as a means of relieving her of that agency. Through this reveal in characterization, the audience is left to discover that the actual change in her characterization does not come until near the end of the novel when she abandons her familial responsibilities and her job to search for information related to the alternative history with Murugan. While sitting in a rainstorm with Murugan, she notes that "it seemed less odd to be here" than her normal routine as she watches the morning commuters scramble to get to their destinations completely oblivious to her and Murugan (220-221). In this final change, Urmilla identifies and executes real agency rather than the limited agency of her job by relinquishing social and cultural responsibility.

This portrayal of Urmilla and her awkward place in her postcolonial historical context reveals a character representation of trauma via the political theme. Specifically, Urmilla's dualistic representation of external public agent and internal private object within the historical postcolonial context is reminiscent of Spivak's discussion of the subaltern woman and her double silence "[b]etween patriarchy and imperialism. . ." that dissolves her role ". . . into a violent shuttling between tradition and modernization" (306). This comparison is furthered when

one realizes that it is only when she becomes more invested in the science fiction aspects of the story through the search for information related to the Calcutta chromosome with Murugan that she actually starts to reveal aspects of agency. This parallel, then, presents a further paradox in the signification of her character's agency by suggesting that the only possible way for it to be part of this character role is through its association with science fiction. Urmilla's paradoxical relationship with agency in the novel exposes a representational aporia between her strong will and the obvious social and political forces that ultimately expose her agency to be little more than a tool to maintain the status quo.

Urmilla's characterization via the political theme also indicate aporia through aspects of narrative time. Due to her absence of agency, Urmilla comes to identify with Murugan in his search for the alternative history, who was similarly an employee for a large corporation before leaving everything for this quest. By pairing these two character roles together at the later stages of the novel, the characters reveal a state of repetition in their lack of agency in their socio-political roles. In response, both characters leave these roles behind in search for information related to the historical narrative; however, Urmilla's objectives remain different from Murugan's in that she does not hold any stake in their validity. Urmilla admits that she had never even heard of Ross before her afternoon excursion with Murugan and, instead, seems more concerned with the opportunity than the mission's objectives (220-221). Through this exposure of opportunity, Urmilla's character reveals how her experience parallels the colonial experience in that the counter-science group is also constantly looking for opportunities in colonial objectives to further their own goals. This revelation, thus, exposes a simulated act of belatedness that ultimately represents the traumatic loss of agency in the postcolonial experience as both acts of agency are associated with the science fiction aspects of the novel. Through these

aporia related to the paradoxical representation of her agency, Urmilla's character role can be seen as indicative of postcolonial trauma in the novel's political theme.

2.1.4 *Postcolonial*

While there are at least four dominant examples of characters for analysis in the postcolonial theme, I will limit my examination to Antar as the audience receives a more comprehensive look at the postcolonial experience through this character in that we experience the patterns of revelation with him. Antar's characterization in the novel begins with his framing as a postcolonial immigrant in a lower-level corporate job that he hates in which he is trying to complete his employment time as quickly as possible. To make matters worse, he is an employee from a previously absorbed company; so, his work has been reduced to a tedious operation that can be done from home, completely isolated from the company itself, and observed by his computer, Ava. As his character notes in the opening chapter, he tries to take no chances in jeopardizing his retirement (5); so, it is indeed odd for him when he starts to dig into the information regarding the alternative narrative and Murugan's disappearance. As he goes through the information and continues to request more, Antar begins to experience a relapse in his malarial symptoms, which get progressively worse throughout his search and the narrative. The culmination of his quest and illness, thus, are both presented in the scene near the end of the novel in which he confronts Murugan as a holographic projection.

Just as Antar has changed over the course of the novel in his knowledge and malarial symptoms, so too does Murugan but in a much more gruesome representation. In fact, the man before him is, at first, only known as an insane asylum inmate whose appearance is so disturbing that Antar changes the image to show the inmate's head only, which is made even more gruesome thanks to Ava's ability to realistically reproduce the severed head (295). Murugan's response to

the image manipulations completed by Antar are strange in that he complains. This reaction is interesting because his projection is supposedly just an image; therefore, when Antar “moves” him, he is only moving an object, nothing more. Not only should Murugan be unharmed by Antar’s actions, but more importantly, he should also not be able to know what is happening with Antar’s manipulations of the image. In fact, given his remediated state as a projection, it is safe to say that this image is not Murugan the character; rather, it is quite literally only a representation of Murugan. As a representation of the character that started Antar on this journey that exhibits physical changes parallel to the changes experienced by Antar in his illness, and its seemingly telepathic ability to know things that only Antar should know, the projection tells the audience more about Antar than it does about Murugan. Through this correlation, the conversation between Antar and Murugan in this scene of Antar’s character change can be seen as a manifestation of Antar’s internal conflict.

In this moment of characterization change for Antar, one can see the postcolonial theme’s representation of trauma in the projection of Antar’s fear and its relationship to the alternative narrative within the novel. In her comments on the disembodied image and the concept of horror, Cavarero reminds us that a component of the Medusa myth is the hypothesis that it “. . . represents the unwatchability of one’s own death,” which certainly would support the textual connections that Antar is actually watching a version of himself rather than another real person (8). However, Cavarero goes on to elaborate that what is truly horrific about disfigurement is that it removes the uniqueness from the body: “What is at stake is not the end of human life but the human condition itself” (8). Through this understanding of the disembodied figure and its relationship to the viewer, one can correlate Antar’s moment of characterization change in this scene with his confrontation of the postcolonial trauma that the figure, an embodiment of the

narrative thus far, has come to symbolize. If Antar puts on the Simultaneous Visualization headgear and receives the missing pieces of information, he will be reconciling himself with the fragmented and horrific representation of postcolonial agency. These actions, like Murugan's characterization, mean divorcing himself from the security of his job and his hated but familiar life as an unknown low-level employee, and, instead, aligning himself with a representation of the postcolonial that, through the experience of the other characters, acknowledges the struggle for agency in the postcolonial experience.

This alignment with the postcolonial representation, however, is problematic for Antar's characterization in that it is unknown and unfamiliar in a way that markedly conflicts with his earlier established risk-free behavior. The gruesome embodiment of this potential characterization change, Murugan's severed head, mirrors the scale to which such a decision changes Antar's character. By engaging in this character change, Antar has to embrace the possibilities of the unknown and potentially risk losing the little security that he has in his current characterization. This interpretation of this internal conflict is supported by the ending scene of the novel in which the unseen community led by Tara welcomes him: "We're with you; you are not alone" (311) This interpretation of the final scene conflicts with many critics who view the narrative as a manifestation of a utopia such as Gosh-Schellhorn, Pordzik, and even O'Connell's view of a "postcolonial utopia;" however, the narrative never fully realizes a utopian experience. Instead, the meeting of community at the end of the novel through an investigation of trauma rather indicates a representation of Caruth's idea of history in that ". . . history, like trauma, is never simply one's own, that history is precisely the way we are implicated in each other's traumas" (*Unclaimed* 24). Through this idea, the ending becomes representative of Antar's realization, as a postcolonial character, of a larger community.

By examining this moment of change within the characterization of Antar, one can begin to recognize the aporia that characterize the postcolonial experience as traumatic. The physical manifestation of Murugan's disembodied head exhibits a representational aporia in relation to Antar's relationship to the historical narrative. As a holographic projection, the alternative history that Murugan's disembodied head comes to represent faces a paradox of signification. Specifically, the representation of the history as an illusionary object seems to undermine its presentation within the narrative as a legitimate historical reference. Moreover, the relationship that the holographic image seems to share with Antar rather than Murugan exposes that any history that the projection has come to represent has been internalized by Antar making it more personal and subjective despite its presentation within the narrative. Moreover, the final scene in which the vision of Murugan is replaced with the Simultaneous Visualization and the presence of a community seems to place more emphasis not on the historical accuracy itself but on the connections to a larger postcolonial community that offer a way out of isolation with one's trauma. Thus, the alternative narrative represented by Murugan's severed head presents a paradox regarding the significance of the narrative's historical accuracy through its representation as an immaterial and gruesome projection.

Additionally, this paradoxical representation of Antar's characterization in the postcolonial theme also indicates aporia of narrative time. In looking at the timing within the narrative at which point this characterization change occurs, one can see a significant difference in chronological timing regarding his first contact with Murugan the person and the final moment of character change through Murugan the representation. This depiction of change over the length of the novel serves as a way to emphasize the belatedness of the experience as the narrative attempts to organize Antar's reinterpretation of his postcolonial identity. Lastly, the

repetition and increased severity of his malarial symptoms as he further explores the alternative history is indicative of a repetitive pattern between from his childhood to adulthood. Moreover, these symptoms also link him to the other colonial and postcolonial characters in that the disease is used as a means of transmission for the Calcutta chromosome. Through this connection, Antar's symptoms echo throughout the narrative history to connect the colonial and postcolonial experience within his narrative of exploration. By recognizing these aporia regarding Antar's characterization in the postcolonial theme, one can see how his character becomes a representation of trauma in relation to postcolonial identity.

By examining the character roles of key characters in *The Calcutta Chromosome*, one can see that the character roles also function as representations and connectors between the lexical and narrative levels for postcolonial trauma. Through Bal's and Margolin's respective definitions and attributes assigned to characters, one can better see how a character functions as a mediator for communicating representations of trauma between the lexical and narrative levels and begin to identify them within the narrative at the various thematic levels. The analysis of the medical theme shows how the aporia represented in the characterization of the silent colonial assistants and the characterization of the historical figure of Ross are indicative of a postcolonial representation of trauma. Additionally, an examination of Ava as a personified remediation of the colonizer further exposes the aporic representations of postcolonial agency as traumatic in the technological theme. Furthermore, the analysis of Urmilla's character role within the political theme as an aporic representation of postcolonial agency further supports a reading of the narrative as indicative of trauma. Lastly, the use of Antar in the postcolonial character role through which to examine the final scenes of the novel and the character's change from isolation to community presents an aporic representation of the postcolonial experience that further

supports a reading of this novel as a manifestation of trauma. While these analyses of the lexical and character levels have indicated evidence for a reading of *the Calcutta Chromosome* as a manifestation of trauma, the narrative-level analysis will serve as a way of reinforcing such an analysis through the further identification of traumatic aporia within the narrative discourse.

3 ANALYSIS OF NARRATIVE DISCOURSE AS INDICATIVE OF POSTCOLONIAL TRAUMA IN *THE CALCUTTA CHROMOSOME*

In the previous sections of my thesis, I examined the predominant lexical and character elements from *The Calcutta Chromosome* to show that the dominant thematic frameworks of this novel (medical, technical, postcolonial, and political) are all equally present within the novel and, therefore, deserve a more holistic analysis. Other authors such as Claire Chambers, Suchitra Mathur, Diane Nelson, Hugh Charles O’Connell, Barbara Romanik, Christopher Shinn, and Pramrod Nayar have also sought to merge these dominant themes in various combinations; however, none have yet had the opportunity to unify all of these themes into a cohesive analysis of the narrative. Towards this purpose, I have highlighted the interconnectedness of these dominant themes at the lexical and character levels through their relationships with Caruth’s traumatic aporia in order to explain their relation to a more inclusive perspective of the novel’s content as expressing a manifestation of postcolonial trauma within the previous sections of my thesis. For my final section, I will expand this argument by analyzing the aspects of the novel’s narrative discourse through their relational attributes with Caruth’s aporia in order to show how further examination via the four dominant themes of *The Calcutta Chromosome* suggests the narrative to be a manifestation of postcolonial trauma.

In approaching a postcolonial narrative such as *The Calcutta Chromosome*, I found the scholarship concerning the analysis of postcolonial narrative discourse to be rather limited. Postcolonial narratology as an aspect of postcolonial studies is primarily rooted in the works of Monika Fludernik, Marion Gymnich, and Gerald Prince, who respectively explain the benefits and uses of a postcolonial narratology as a whole. Prince’s essay entitled “On a Postcolonial Narratology” provides an application of narratology to postcolonial studies for use in analyzing

narrative discourse by providing issues from postcolonial studies that should be considered in narratological analyses. Similarly, in another narrative essay entitled “Identity/alterity,” Fludernik discusses key ways in which alterity and identity are considered in postcolonial studies for consideration in a narrative analysis. Lastly, Gymnich’s chapter “Linguistics and Narratology: The Relevance of Linguistic Criteria to Postcolonial Narratology” suggests how linguistic concepts can help in broadening the understanding of postcolonial narrative. While these critiques assist in the identification of areas for analyses within postcolonial literature, none of them provide a specific applicable model for analyzing postcolonial discourse. Indeed, Prince notes in his essay that such an application is the next step in postcolonial narratology (380). With the absence of an applicable model for postcolonial narratology, I have chosen to ground my analysis in a methodology specifically regarding narrative discourse and reserve aspects of postcolonial narratology for my thematic analyses for the time being.

To analyze *The Calcutta Chromosome*’s narrative discourse, I will rely on Gérard Genette’s methodology as is presented in his 1972 seminal work *Narrative Discourse: An Essay in Method*. Genette’s understanding of narrative discourse comes out of the Russian formalist narratology tradition from which one of the primary consequences was the categorization and segmentation of narratives into two parts: the elements or “series of logically and chronologically related events that are caused or experienced by actors” known as the *fabula* (Bal 5, 49) and the ordering of the narrative or relationship between aspects of the narrative known as the *sjuzhet* (Genette 32). Because of its focus on the classification and the organization of a narrative, the narratological perspectives emerging from the Russian formalist tradition tended to focus more on analyzing a narrative represented in some form, primarily literary fiction. As Genette argues, “. . . the level of narrative discourse is the only one directly available to textual

analysis, which is itself the only instrument of examination at our disposal in the field of literary narrative, and particularly fictional narrative” (27). It is this idea that the relationships between the narrative’s representation and the narrative’s elements provide the only analyzable subject for a narrative which serves as the basis for my analysis of narrative in *The Calcutta Chromosome*.

3.1 Genette’s Methodology and Its Application to *The Calcutta Chromosome*

In *Narrative Discourse*, Genette sought to better understand the defining concepts of “narrative” through a systematic understanding of the literary narrative’s structure and representation. His analysis of this representation was not purely of the representation itself; rather, it was focused on the “relationships between narrative and story, between narrative and narrating, and (to the extent that they are inscribed in the narrative discourse) between story and narrating” (29). This system of relationships led him to develop a derivation of Tzvetan Todorov’s methodology for which Genette augmented five aspects (order, duration, frequency, mood, and voice) into three categories (tense, mood, and voice) (Genette 31-32). In the following essay, I will focus my analysis of *The Calcutta Chromosome* through Genette’s five aspects to elaborate on the implications that an analysis of each narrative aspect has on the narrative’s themes and, ultimately, how it ties them together through Caruth’s aporia as a manifestation of postcolonial trauma.

3.1.1 Order and Belatedness

To begin my analysis of *The Calcutta Chromosome*’s narrative discourse, I will, as Genette, begin with the temporal aspect of order. Falling within his classification of time, Genette states that

[t]o study the temporal order of a narrative is to compare the order in which events or temporal sections are arranged in the narrative discourse with the order

of succession these same events or temporal segments have in the story, to the extent that the story order is explicitly indicated by the narrative itself or inferable from one or another indirect clue. (35)

This idea of order being the relationship between the narrative and its discourse can be seen in his representation of “elements” or events through systematically labelling them in order of appearance with alphabetic markers (A, B, C, etc.) and their chronological appearance with numeric markers (1, 2, 3, etc.) (37). The additional system of subordination and coordination using brackets and parenthesis further shows relationships between the events. Combined, these representative systems visualize the progression of the narrative as a relationship between the two temporal structures and more readily identify anachronies: “. . . all forms of discordance between the two temporal orders. . . .” (40)

Using a variant of Genette’s methodology, I have represented the major events within *The Calcutta Chromosome* in Figure 1 as they are separated according to chapters. For many narratives, this macroscopic analysis would not yield an accurate picture of the relationships within the narrative; however, my analysis will show that this particular narrative’s content is carefully organized into macro-level events via chapters and, therefore, can be structurally analyzed at the chapter level to reveal key aspects of its order.

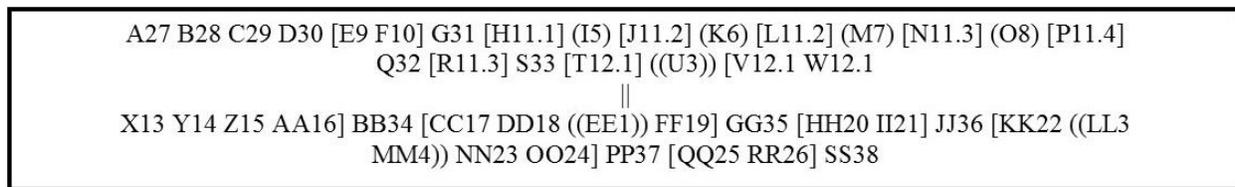


Figure 1: A representation of Genette’s narrative aspect of “Order” in *The Calcutta Chromosome*.

In looking at the ordering of the events, one can see that narrative contains several examples of anachrony. One of the most noticeable aspects of this representation is the embedded nature of the narrative. The groupings of these narrative structures will be further

discussed in the “Duration” section; however it is important to note that each grouping, for the most part, contains a rather restricted sense of order. For example, the non-bracketed structure contains sequences 27-38, the bracketed structure contains sequences 9-26, the parenthetical structure contains 5-8, and the double parenthetical structure contains 1-4. This anachronic reversal of chronology compared to the appearance of events shows that the most recent information within the narrative content is told at the uppermost framed level of this narrative while the chronologically first events are contained within the narrative as individual moments or strings of analepsis.

The effect of this aesthetic is similar to Caruth’s concept of belatedness in that the event sequences from previous chronological sequences interject within the larger structure of the contemporary chronological sequence. This interpretation, however, verges closely on one of the key issues raised by postcolonial theorists in Stef Crap’s *Postcolonial Witnessing* in that Modernist aesthetics including fragmentation and other kinds of anachrony have become synonymous with trauma, which prompts him to call for a broader understanding of trauma aesthetics (39-41). Similarly, Roger Luckhurst reminds us in *The Trauma Question* that this is a problematic association due to the popularity of these Modernist-associated aesthetics and the nature of trauma, which leads him to the point that “[a]esthetic experimentation is therefore valued because it defies the habituation of trauma into numbing and domesticating cultural conventions” (89). In looking at the ordering of *The Calcutta Chromosome*’s narrative, one can see how such narrative innovations occur in order to prevent a Modernist-aesthetic association. Rather than fragmentation to the point of confusion and invocation of complexity, the ordering of this narrative coheres into various dependent sequences that urge more of a problem-solving motif with memory and history in each thematic analysis rather than one explicitly of

fragmentation. It is this aesthetic difference that helps the narrative of *The Calcutta Chromosome* achieve the narrative innovations called for by both Luckhurst and Craps and, therefore, invites one to see this narrative aspect as indicative of representing trauma through the various themes.

In an analysis of *The Calcutta Chromosome*'s narrative order, the medical theme reveals an opposing chronologic pattern to the Rossian ideal of his history represented in the referential colonial history. One of the places in which the content serves to remind the audience of the colonial version of history is at the memorial for Ross's lab near the P. G. Hospital. In my analysis of the metonymic significance of this memorial for the political theme in the lexical section, I explained how it served as a repetitive symbol of the silence accompanying the subaltern and the voice accompanying the colonizer in history throughout the various chronologies of the narrative. Similarly, the novel's narrative structure deals with the same issue by providing a narrative of historical possibility regarding the subaltern via the insertion of temporal sections indicated by the non-bracketed, bracketed, parenthetical, and double parenthetical structures. These sections interrupt one another chronologically to create a larger temporal disparity in the ordering of the narrative.

In this presentation of multilinearity and fragmentation, the narrative does not seem to directly contradict itself; rather, it provides an order of history that calls into question the monolithic nature of the colonial historical narrative by confronting its medically-associated linear history. This association is similar to the claim made by Bishnupriya Ghosh in her article "Spectral Ethics in *The Calcutta Chromosome*" when she notes that "[n]ot only is Ghosh interested in unearthing these *parallel* histories, but—as in most of his work—he sees the (dominant) colonial narrative of discovery as an exercise of power" (126). This alignment of the linear narrative of history with Ross's medical achievements and the anachronic order with the

subaltern indicates that the narrative's order deliberately interrupts the medical historical narrative with belated information that contradicts its dominance.

This subversion of historical narrative through belated multilinearity also extends into the postcolonial theme as it provides a way of looking at the order of the narrative as empowerment for the postcolonial subject. This idea is perhaps most evident in the way that colonial historical documentation is treated within the novel as presentations of retrospective events. These retrospections can be seen in the first chronological section (double parenthesis) which contain chapters referring to a myth of Mangala (EE1), Phulboni's story at Renupur (LL3-MM4), and Farley's lost letter (U3). As one can see by the contents of these chapters, the historical documentation does not deal directly with the events of the historical medical narrative; rather, these events are related to the historical perspective of people who typically get left out of the historical narrative, the subaltern. This observation correlates with Bishnupriya Ghosh's suggestion that ". . . new knowledge comes about through continuous fragmenting and grafting of hypotheses and speculations: each narrative about Ross' discovery is haunted by the probability of another truth that confounds its credibility" (120). By its order, as Bishnupriya Ghosh notes, the content becomes subversive as it challenges the historical narrative; however, its repeated anachrony in regards to the different narrative levels also suggests that this content is belated in its revelation. This can be seen in the chronological ordering of the events indicated in Figure 1 as the more recent events indicated by the non-bracketed structures begin and end the novel as well as interject throughout the rest of the narrative structure. Thus, the subversive nature of the postcolonial theme is tied to the belated aesthetic of the narrative's order.

In addition to the perspective on the narrative order offered by the postcolonial and medical themes, the technological theme uses the order of the narrative to reference the motif of

networked relations on a larger scale than in the lexical and character sections. In the character section, I discussed how Ava is eventually used by Antar as a tool for finding information in the International Water Council's archive rather than just being the provider of information for the database. Similar to this use, this analysis will expand the idea to how Antar relates the information that he finds using Ava to the multilinear order of the narrative discourse.

To facilitate this extrapolation, I would like to consider the event sequences as they are bounded in brackets and parentheses in Figure 1 as pieces of information relating to the overall narrative. While the chronological order, indicated by the numeral in each event label, is not linear, the ordering of the sections is also not completely randomized as the sections are purposefully divided in such a way as they can continue the narrative. For example, the first break in the narrative sequence happens between D30 and E9. Here, the previous chapter ends with Antar reading some of the newspaper clippings in Murugan's file and noting that the date he disappeared was August 21, 1995, in Calcutta. The next chapter, thus, begins with Murugan's story on the last full day of his known whereabouts (23). While it is one of the more obvious narrative transitions, its subtlety implies that these transitions from one chronology to another are inherent. In her article "Networks Of Stories: Amitav Ghosh's *The Calcutta Chromosome*," Claire Chambers explores how networks impact the narrative structure by asserting that the content is "spliced together" using nodes that ". . . allows Ghosh to escape from the idea of centre and periphery in his novel" (46). Chambers' inclination to treat the events as "spliced together" content exemplifies the relationships inherent within its order. Additionally, it also presents a remembrance process that does not rely on chronology as its reference. Similar to traumatic memories, all of the content is divorced from the time in which the various characters experience it and, instead, find their relationships in keywords and transition sentences. Thus, the

networking aspect that connects the analeptic order directly relates to the belated functions of memory in trauma.

The political theme shows how the narrative order can be used as a tool for engaging the audience with the narrative content in *The Calcutta Chromosome*. As noted in the other thematic analyses for this section, the story presents an interesting alternative historical narrative using an anachronistic narrative order that aesthetically favors fragmentation and multiplicity over linearity and that expresses connections either implicitly or directly to the events around each other. Through the act of reading the anachronous events, the reader engages in a parallel construction process regarding the narrative order as he or she progresses. This process is similar to the reconstruction process that the characters undergo in the narrative content. The discoveries of these characters are revealed in the bracketed and non-bracketed narrative structures that interject the chronologically later postcolonial character sections. Just as the characters proceed in piecing together the alternative historical narrative through these pieces of information, the audience is also tasked with piecing together the associations between the narrative levels through the anachronistic order. When looking at the reader's actions as parallel with the postcolonial characters' actions of creating a narrative with the fractured events, one can see how the reader's progress creates another structure within the narrative order.

Through this interactive process, the reader also belatedly engages with the content. As Dori Laub explains in her chapter "Truth and Testimony: The Process and the Struggle," the second level of the three levels of witnessing involves the listener as another witness to the trauma (69). While the extent of such a role can be debated, I would argue that it functions, especially in the literary sense, in that it makes the audience aware that something has occurred. By making the literary audience aware of the historical absence of the colonial perspective from

the postcolonial experience through the analeptic order, the narrative implies a form of belatedness in the audience as we must also confront the recognition of absence. It is through this analysis of the analeptic narrative order that one can begin to see that a holistic analysis of the narrative and its related themes reveals a narrative indicative of postcolonial trauma.

3.1.2 *Frequency, Duration, and Repetition*

Genette's other two aspects dealing with narrative time are frequency and duration. Frequency is defined by Genette as “. . . the relations of frequency (or, more simply, of repetition) between the narrative and the diegesis. . . .” (113) In correlation with the other two time-related narrative aspects, this aspect shows another ratio between the temporal structures of the narrative's chronology and representation. Using Genette's association between repetition and his concept of frequency, one can also make a connection to Caruth's temporal aporia of repetition. Specifically, Caruth parallels the repetitive representations of a traumatic event in a subject or repetitive manifestations of trauma characteristics indicative of a traumatic memory rather than just any repetition at all (*Unclaimed* 92). This relationship between a narrative and its representation can be seen in Genette's quasi-formulaic representations indicating the number of times an event occurs in a narrative (#N) over the number of times an event happens in the representation (#S) (Genette 114). By using Genette's model of the frequency relationship between narrative and representation, one can begin to see how such a model can be used to represent the narrative aporia of repetition at the macro-level of the narrative discourse analysis.

In looking at the micro-level analysis of frequency in *The Calcutta Chromosome*, there are certainly behaviors that can be isolated as repeating functions using Genette's methodology that are not relevant to such an analysis. An example of this occurrence would be Antar's “usual walk to Penn Station” (Ghosh 8). To continue my macro-level analysis, I will focus on the

frequency of events as they occur in my previous outlining, which is indicative of the macro-level of narrative discourse analysis. This focus is the most productive in analyzing the narrative of *The Calcutta Chromosome* specifically because of its relationship to the continued macro-level analysis that I began in the “Order” section and the correlation that I am continuing to make between the narrative analysis and the manifestation of trauma in the narrative. Therefore, my analysis of this narrative aspect will reference frequency as it relates to the grouping of events as previously discussed. The representation of the narrative in *The Calcutta Chromosome* in relation to this addition is shown in Figure 2.

An additional classification of narrative temporality is also discussed by Genette in his chapter on duration. Genette defines this aspect as the “*steadyness in speed*,” in which “. . . the speed of a narrative will be defined by the relationship between a duration (that of the story, measured in seconds, minutes, hours, days, months, and years) and a length (that of the text, measured in lines and in pages)” (87-88). While also invoking the dual elemental representational system as in the “Order” and “Frequency” chapters, Genette does not provide a model for this aspect. Therefore, I have developed a model in relation to the description of this aspect that can be seen in Figure 2 by the inclusion of the days on which the events take place in their respective temporal structures (August 20 and 21) and the page length of each respective macro-level narrative event listed under its respective segment (i.e. {19}). This model provides a dualistic representation over the course of the narrative for a macro-level analysis.

Furthermore, Genette warns that application of this narrative aspect should not be confused with the physical divisions of the text like chapters and, instead, proposes a list of “temporal and/or spatial break[s]” (88-89). My representation of *The Calcutta Chromosome* seems to contradict Genette in that my model relies on the chapter and section divisions of the

text; however, it is important to distinguish that this reliance is because of the novel's structural use of the temporal aspects. These structural breaks in *The Calcutta Chromosome*, for the most part, are also indicative a break in the spatial or temporal order as indicated in Genette's methodology, which can be seen in the nesting attribute from the narrative order. For example, the bracketed section beginning at E9 constitutes a separate narrative durational segment because it changes years and locations from the frame narrative to Murugan's narrative. Similarly, I have grouped together events from the narrative order section that do not show such a drastic change in time and location into segments for the purposes of this analysis. For example, the beginning events from A27 to D30 all take place in Antar's apartment on the same day; therefore, I have grouped their pages together ({19}) for this macro-level analysis. These concessions allow me to maintain Genette's methodological separation while also showing the relationship between the narrative aspects of order and duration.

1N/1S	
A27 B28 C29 D30 [E9 F10] G31 [H11.1] (I5) [J11.2] (K6) [L11.2] (M7) [N11.3] (O8) [P11.4]	{19} {11} {5} {8} {13} {8} {12} {7} {9} {7} {7} {5}
Q32 [R11.3] S33 [T12.1] ((U3)) [V12.1 W12.1	{6} {5} {4} {6} {19}
August 20 August 21	{164} {141}
X13 Y14 Z15 AA16] BB34 [CC17 DD18 ((EE1)) FF19] GG35 [HH20 II21] JJ36 [KK22 ((LL3	{33} {4} {27} {5} {10} {5}
MM4)) NN23 OO24] PP37 [QQ25 RR26] SS38	{51} {3} {13} {3}

Figure 2: A representation of Genette's narrative aspects of "Frequency" and "Duration" in *The Calcutta Chromosome*.

Upon analysis, the frequency of events in *The Calcutta Chromosome* appears to be low to the point of no repetitions occurring in the narrative's events. Figure 2 shows this lack of repetition through the singular use of the letters regarding the individual events. By not repeating

a letter in this representation, the figure shows that there are no repeated events in the narrative. In Genette's terms, this pattern is best represented in the 1N/1S type of narrative frequency relationship known as "singulative narrative." This particular relationship specifies that there is a 1:1 ratio between the narration of an event and the number of times the event happens within the story itself (Genette 114). This kind of narration seems to be at odds with the very fragmented and unique representative nature of the elements within the order aspect because singulative narrative, as Genette notes, is ". . . most common—so common, and apparently consider so 'normal,' that it bears no name, at least in our language" (114). By looking at the narrative frequency along with the representation of narrative duration, however, repetitions begin to emerge from the narrative structure. Specifically, the division of the fragmented event lengths into the two temporal durations of two days reveals multilinear narratives as they each occur on these two days within their respective years. This seemingly contradictory narrative structure as presented by the narrative's frequency and duration relates to Caruth's temporal aporia of repetition as the narrative's multilinear characteristic embeds itself within the novel's singular narrative. It is this aporia of repetition within the narrative discourse that further indicates that this narrative is a manifestation of postcolonial trauma, which can be further seen in the thematic analyses of this aporia.

An analysis of the relationship between narrative frequency and duration as examined through the medical theme reveals the novel's narrative in parallel with the external historical narrative. The basis for this assertion develops out of the short but repeated references to the colonial narrative of Ross's medical discovery while simultaneously constructing an alternative historical narrative within its content. What particularly makes this relationship interesting in regards to narrative frequency and duration is the positional relationships between the two

seemingly parallel narratives in the story. Murugan emphasizes the importance of this positionality when explains to Antar that “[y]ou’ve got to remember: this guy’s decided he’s going to rewrite the history books. He wants everyone to know the story like he’s going to tell it; he’s not about to leave any of it up for grabs, not a single minute if he can help it”(52).

Murugan’s explication of the colonial medical history reveals that there is another 1N/1S construction of “history” as well as its positionality outside of the medical history for which he is trying to construct a narrative. This positionality is clearly marked in Hugh Charles O’Connell’s analysis of the colonial narrative in “Mutating Toward the Future: The Convergence of Utopianism, Postcolonial SF, and the Post Contemporary Longing For Form in Amitav Ghosh’s *The Calcutta Chromosome*” as he notes that “[i]t is the work of counterscience, therefore, to open up a new, that is to say, radically different, sense of the future, one that operates outside of this imperial logic of the Western imperial narrative, and yet one that is embedded in it” (785).

When looking at the creation of these two narratives in their disproportional positionalities, the narrative reveals that the overall historical perspective actually contains multiple narratives of the same story proclaiming historical truth respectively, which is an example of Genette’s nN/1S frequency (115). This divergent positionality regarding a singular history is similar to Caruth’s explanation of repetitive manifestations of trauma as it relates to an “impossible truth” in that it emphasizes its paradoxical relationship between the positional histories and historical “truth” (*Trauma* 5-6). By emphasizing its paradoxical relationship, this parallel relationship of historical truth between the novel’s narrative history and the medical narrative history indicates that they are irreconcilable, which results in the repetitive narration of the alternative history in the novel’s various temporal structures.

By recognizing the novel's narrative as an alternative to the historical narrative via the medical theme's interpretation of narrative frequency and duration, one can now turn to the internal fragmentation of the narrative events in regards to narrative frequency of the postcolonial theme. One of the most prominent features of the narrative duration in terms of fragmentation is the temporal break between August 20 and 21 as seen in Figure 2. In both sections, the narrative is further broken into fragmented sections indicated by the presence and absence of bracketed structures. These bracketed structures, as mentioned in the discussion on narrative order, are indicative of different chronological segments regarding these two days throughout colonial and postcolonial history as well as different character perspectives (an aspect that I will further discuss in the "Mood, Voice, and Representation" section); however, their repetitive structure on these two specific days indicates that there are more similarities between them than their differences in temporal fragmentation.

This pattern of repetition exhibits how multiple narratives of multiple events cohere into the novel's story of the alternative history. Genette labels this use of multiple narratives and stories as an nN/nS frequency type, which ". . . is in fact singulative and thus reduces to the previous type, since the repetitions of the narrative simply correspond . . . to the repetitions of the story" (114-115). This collapsing of the narrative frequency types between the medical and postcolonial themes in the novel's narrative helps to examine this fragmentation pattern as a representation of cultural memory. In an excerpt from "Reasons for the Current Upsurge in Memory," Pierre Nora notes that there are temporal and social changes related to decolonizations of various kinds in recent historical practices that have allowed for memory, a usually individualized process, to become synonymous with history through cultural identity:

Unlike history, which has always been in the hands of the public authorities, of scholars and specialized peer groups, memory has acquired all the new privileges and prestige of a popular protest movement. It has come to resemble the revenge of the underdog or injured part, the outcast, the history of those denied the right to History. (440)

By recognizing the novel's narrative as an exercise in cultural memory, the narrative discourse illuminates the seemingly contradictory combination of repetitive durative fragmentation and frequent narration. This combination of contradictory aspects, therefore, relates to the repetitive aporia by showing how the narrative discourse mimics the fragmentary representation of individual memories within the larger cultural memory.

An analysis of *The Calcutta Chromosome*'s narrative frequency and duration through the technology theme can help to further understand the relational construction of the content. As mentioned in the previous two thematic analyses, the framing of the narrative in *The Calcutta Chromosome* within the larger representation of postcolonial history presents an interesting correlation between the many narrations of many stories of a particular history to the singulative narrative. In addition to the repetitive pattern of chronological sequences, one can also look to the repetitive connections that link these chronological sequences. As explained in the "Order" section, the chronological sequences are not randomly linked together; rather, there are distinctive implicit and explicit links that connect the information in order to present the overall singular narrative. The fact that these links can be either implicit or explicit, however, brings the characteristic of possibility into the analysis of their repetitive function within the narrative. This characteristic of possibility within the narrative has been explored by other critics of this novel, especially O'Connell, who uses it to explore the utopian reading of the novel: "What is at stake

in counter-science is the development of possibility that is raised in the transformation of silence as symptom of imperial subalternity to a weak-utopian postcolonial methodology” (786). While this elaboration on possibility within the novel engages a utopian aspect to the narrative, it does have similar application into the examination of the narrative as a representation of trauma.

Luckhurst specifically references the value of possibility in trauma narratives when he discusses trauma and its relationship with post-structural aesthetics: “These work from a different aspect of the same problem: if trauma is a crisis in representation, then this generates narrative *possibility* just as much as *impossibility*, a compulsive outpouring of attempts to formulate narrative knowledge” (83). Through this understanding of trauma narratives and an analysis of the repetitive inclusion of implicit and explicit links between the various segmented narratives indicated by the represented duration, the frequency of the *The Calcutta Chromosome*’s narrative is a 1N/1S manifestation of possibility regarding the impossible history retained within the colonial/postcolonial archive from which nN/nS manifestations are possible.

The analysis of the narrative frequency and duration aspects through the political theme serves as a way to further the analysis of the narrative discourse as indicative of a temporal aporia of repetition through its interactivity with the audience. As seen with the other thematic analyses of the narrative duration, the repetitive patterns of fragmentation and linkage regarding the chronological segments serve as a guide for the reader throughout his or her exploration of the narrative. For example, as the reader progresses through the novel’s narrative, he or she is repeatedly presented with the anachronous order and varying durations of the novel’s chronological structures while also being guided through implicit and explicit links to reconcile them into an alternative nN/1S narrative. Through this process, the reader is prompted by the narrative structure to take part in the exercise of constructing the narrative with the characters.

This process involving the narrative's construction also tenuously guides the reader through witnessing experience similar to the analysis explained in the "Order" section in that it draws attention not to the narrative itself but the traumatic historical absence for which it is a manifestation. This kind of engagement involving the audience as a witness is also seen in Caruth's analysis of *Hiroshima Mon Amour* when she explains that "[w]hat we see and hear, in *Hiroshima mon amour*, resonates beyond what we can know and understand; but it is in the event of this incomprehension and in our departure from sense and understanding that our own witnessing may indeed begin to take place" (*Unclaimed Experience* 56). By interacting with this narrative, Caruth suggests that the audience cannot fully understand the trauma being represented; however, it does bring recognition to its absence of comprehensibility. Similar to this process, the audience of *The Calcutta Chromosome* also continuously participates in the destabilization of the 1N/1S historical narrative through the repetitive patterns of fragmentation and linkage in the narrative discourse. This interactive process results in the creation of a possible alternative narrative only to recognize the traumatic absence of the nN/nS subaltern narrative representation by the narrative's conclusion. Thus, through an analysis of the aporia of repetition created by the frequency and duration of the narrative discourse, one can further see that a holistic analysis of the narrative discourse further reveals *The Calcutta Chromosome* to be indicative of postcolonial trauma.

3.1.3 Mood, Voice, and Meaning

The continuation of Genette's methodology leads to the narrative aspects dealing with representation rather than time. Specifically, Genette notes that through mood ". . . one can tell *more* or tell *less* what one tells, can tell it *according to one point of view or another*. . . ." (161-162) According to this definition, it is through this aspect that the representation of content can

vary depending on the relationship between the narrating point of view and its emotional or physical proximity of the narrative subject. To discuss this aspect, Genette invokes the modalities of “perspective” and “distance” to better describe determination of mood regulation within narrative. Towards illustrating this aspect within *The Calcutta Chromosome*, I added the character perspectives to the narrative representation in Figure 3 using the first initial of the respective character names (A=Antar, M=Murugan, U=Urmilla, S=Sonali). Additionally, I have added a “/” between certain letters to indicate division in the specified narrative events into their respective speakers even though they are considered a continuation of one longer event. Lastly, I added a “&” for sections where the mood appears to be allocated to both characters in such a way that it is impossible to tell which is more dominant.

A similar but broader narrative aspect in Genette’s methodology is voice, which he describes as “. . . not only the person who carries out or submits to the action, but also the person (the same or another) who reports it, and, if need be, all those people who participate, even though passively, in this narrating activity” (213). Genette’s description of this narrative aspect frames it as a way of representing narrative content in that it defines the act of narrating through which all of the narrative events are subject. Therefore, depending on the stylistic choices in the conveyance of the narrative, the voice can exert a significant impact on how the audience receives the text. In referencing Genette’s characteristics regarding voice in *The Calcutta Chromosome*, I have determined the timing of the voice as “subsequent” based on its indeterminate referent of time and consistent use of past tense by the removed narrator (Genette 220). Moreover, the absence of the narrator from the narrative and constant supervision over the story warranted my further categorization of the voice at the “extradiegetic” narrative level and “heterodiegetic” person (Genette 229, 244-245). Because of the narrative voice’s consistency

Instead, these sections are consistently included within another perspective as they are retrospections, which indicates further fragmentation regarding the particular mood and its relationship to the respective content.

The narrative voice, however, has an opposing effect than the narrative mood as it consistently encompasses the entire narrative discourse. Specifically, it evokes a paradoxical reading of the fragmentation represented in the narrative mood by providing a consistent way of representing the content in the narrative discourse. In this way, it is similar to the frequency aspect of *The Calcutta Chromosome*'s narrative discourse in that it implies a level of consistency in contrast to the aspect with which it shares the most similarities. This deliberate stratification of perspectives in relation to the content of *The Calcutta Chromosome* and their unified representation in the narrative voice stresses a unified analysis of the four dominant themes through their shared aporia of representation.

An analysis of *The Calcutta Chromosome*'s narrative mood and voice through the medical theme assists in recognizing the material absence of the historical colonial narrative from the novel's narrative. In looking at the novel's perspectives in Figure 3, one can see that the narrative's mood centralizes around the main postcolonial characters, which results in the medical colonial history being discussed within the perspectives of these characters. For example, the retrospection in chapter 21 (U3) contains a letter written by Farley, a significant colonial character regarding the medical discovery in the narrative; however, his narrative contribution is made available via Murugan's notes as Antar reads them. This appropriation and stratification of colonial discourse through the postcolonial perspectives is a key attribute of the alternative narrative as Murugan describes his own investigative efforts regarding Ross's well-documented history: "He's figured on a guy like me coming along someday and I'm happy to

oblige””(52). This division of the historical colonial perspective as represented through Murugan and the other postcolonial perspectives is only unified again in the usage of the narrative voice. Through the application of the subsequent extradiegetic-heterodiegetic narrator, these multiple moods are presented through an external voice that unifies the diversified moods into one coherent narrative.

In these respective processes of appropriation and unification through these two narrative aspects, the historical content undergoes a drastic transformation in its representation creating a representative aporia regarding the power of the historical narrative. In his chapter “*The Calcutta Chromosome: The Ethics of Silence and Knowledge*,” Tuomas Huttunen acknowledges this reversal of perspectives through the idea of “discourse is power”: “. . . those outside the social group within which this discourse is born are cast into silence. They do not exist in this discourse, or are defined as its other” (37). By representing the historical content through the aspects of multiple postcolonial moods and a unifying subsequent extradiegetic-heterodiegetic narrator, the roles of agency are swapped between the colonial and the alternative historical narratives. This same effect can also be seen within the content of the narrative as critics such as James Thrall have noted regarding the reported actions of the counter-science group in relation to their effect on the colonial medical achievements (292-293). Therefore, this interpretation of the narrative structure in regards to representation is further supported by the narrative content. These two aspects, thus, mimic the aporia regarding the representation of the historical content in that the roles of agency and subaltern are switched between the historical perspectives via the narrative discourse.

In the postcolonial theme, the possibility for agency created by the external representational aporia of the colonial perspective must also be examined for its internal

representational aporia created by multiplicity. By internal representation, I am referring to the multiplicity of perspectives that compose the narrative rather than its representation of them as a narrative unit through the extradiegetic-heterodiegetic narrator. Instead of mirroring the univocal narrative of history, the alternative narrative contains various postcolonial character perspectives through which all of the content is presented: Antar, Urmilla, Murugan, and Sonali. While each perspective is close to the narrative and provides a unique outlook on the content, the narrative never quite reaches the completed inverse of the colonial historical narrative due to this fragmentation. This interpretation seems to contradict the application of the narrative voice as unifying aspect at first; however, it is better understood when considered in the context of its usage. Rather than supplying a unified and definitive narrative like the colonial historical narrative, the subsequent extradiegetic-heterodiegetic narrator serves as an aggregation aspect in which the various moods retain a certain amount of representational autonomy as is represented by their various perspectives.

The inverse perspective of the univocal historical narrative in *The Calcutta Chromosome* can, instead, be found in the “silence” represented by the counter-science group in the narrative, which never receives direct representation in the narrative mood or voice. The power of this “silence” is acknowledged by many critics; however, Suparno Banerjee in her article “*The Calcutta Chromosome: A Novel of Silence, Slippage and Subversion*” best recognizes its potential in relation to the narrative mood and voice when she notes that the exclusion from the silence is relegated to all participants in the story rather than just the two overt examples of Murugan and Phulboni (55). This critical observation enforces the idea presented by the comparison of the narrative voice and mood of the colonial historical narrative and those of the alternative historical narrative in that the multiple perspectives provided by the alternative

historical narrative are always removed from the univocal power of the “silence.” The denial of direct perspective to the “silence” of the alternative history draws a parallel between this narrative and Caruth’s concept of trauma as presented in the second half of *Trauma: Explorations in Memory*: “Trauma, that is, does not simply serve as record of the past but precisely registers the force of an experience that is not yet fully owned” (151). By being denied access to the perspective and voice of the “silence,” the postcolonial perspectives in this narrative, similarly, cannot “own” the experience. Instead, every narrative provided by these perspectives is always *a* historical narrative rather than *the* historical narrative resulting in a representational aporia as the narrative cannot be what it presents itself to be: an alternative historical narrative.

An analysis via the technological theme furthers the postcolonial thematic analysis by providing a critical interpretation of the networking characteristics of the narrative aspects of mood and voice. In the postcolonial analysis, the fragmentation of perspectives in the narrative mood and the aggregation nature of the narrative voice prevented the narrative from being a univocal representation of the alternative history due to a denial of access into the perspective of the “silence.” However, the narrative’s networking of these multiple perspectives under the broader understanding of the narrative voice’s aggregation function does provide the coherency needed for it to become *a* representation of the alternative history.

The establishment of the postcolonial mood can be seen through the hierarchy of the event sections and the perspectives that are respectively represented in each structure. In the bracketed sections, we can see an amalgamation of moods regarding the characters of Murugan, Urmilla, and Sonali. Some of the events are singular iterations (i.e. H11.1) while others contain multiple perspectives (i.e. E9 F10) and even indeterminate perspectives (i.e. P11.4). What is

particularly fascinating about this compounding of perspectives is the lack of event repetition in these sections, which was further discussed in the “Frequency” section. This remarkable feature is also extended into an analysis of the frame narrative given through Antar’s perspective as the novel’s narrative moves in and out of these different chronologies as mentioned in the “Order” section. All of these connections between the various modal sections are made into a singular coherent narrative via the voice of the subsequent extradiegetic-heterodiegetic narrator. In this way, the novel’s narrative has paradoxically formed a singular narrative without access to the “silence” while also maintaining a unique representation of multiple perspectives.

The paradox concerning the representation of the narrative’s multiple moods and unified voice results in a representational aporia. This kind of representational aporia is also referenced by Kai Erikson in his chapter “Notes on Trauma and Community” when writing on group identity by recognizing that

“ . . . trauma has both centripetal and centrifugal tendencies. It draws one away from the center of group space while at the same time drawing one back. The human chemistry at work here is an odd one, but it has been noted many times before: estrangement becomes the basis for communality, as if persons without homes or citizenship or any other niche in the larger order of things were invited to father in a quarter set aside for the disfranchised, a ghetto for the unattached” (186).

In the application of Erikson’s idea of community in trauma, one can compare the narrative’s voice to that of trauma in that it serves as a way of representing the narrative moods as simultaneously distinct yet unified. Through this representational aporia of community via the technology theme, one can see that the manifestation of *a* narrative from the various postcolonial

perspectives in the narrative serves as a space for recognizing a traumatic experience as a community through the narrative voice.

An analysis of *The Calcutta Chromosome*'s narrative mood and voice through the political theme further explains an interpretation of the narrative as representative of trauma by exposing an aporia of representation regarding the audience's interactive role with the narrative. As seen in the previous examination of the technological theme, the fragmented narrative perspectives can be seen as representation of a postcolonial voice, which paradoxically serves as a unifying mechanism while maintaining the representation of the individual narrative moods. This identification of the postcolonial voice, however, is not an overt one in the text. The connections between the characters happen individually as the reader proceeds throughout the narrative and are not easily represented at the narrative discourse level. When the audience looks at the narrative mood throughout the narrative, however, he or she can see that the one attribute all of the characters have in common is their status as members of a postcolonial community, which is only communicated through the aspect of the narrative voice. By presenting this information to the audience through the narrative discourse in an indirect way, the narrative can be seen as encouraging a level of interactivity between the narrative discourse and the audience.

Yet, it is this characteristic of interactivity that also provides the representational aporia in that while the audience interacts with the narrative in a similar investigative process as the characters, he or she is not part of the traumatized community in the same way as the characters. In Jeffrey C. Alexander's explanation of the "trauma process" regarding the recognition of a traumatic experience as cultural trauma, he explains the role the audience plays within the mediation process in a way that also brings such a representational aporia to light: "For the larger audience to become persuaded that they, too, have become traumatized by an experience or an

event, the carrier group needs to engage in successful meaning work” (12). Within this process, the mediation of the collective trauma experienced by the postcolonial group must interact with the audience in order to have it recognized as a traumatic experience. This recognition, however, implies a process that is similar to Laub’s process of witnessing mentioned earlier in which the audience becomes aware of the trauma but not the subject. In this way, the interactions of the audience as witness with the narrative are representationally aporic in that the role both includes and excludes them from the traumatic experience, which further supports the analysis of the narrative as a manifestation of postcolonial trauma.

The narrative structure of *The Calcutta Chromosome* provides a mechanism through which to view the novel in a more holistic way by unifying the dominant analyses of the medical, postcolonial, technological, and political themes into an interpretation of the novel as a representation of postcolonial trauma. Through the incorporation of a rigorous methodology such as Genette’s in *Narrative Discourse: An Essay in Method*, each aspect of the narrative discourse can be analyzed for its application into the various thematic analyses in order to reveal how the narrative discourse engages with Caruth’s traumatic aporia. Through an investigation of the first narrative aspect related to time, order, one can see a connection between its temporal function and Caruth’s aporia of belatedness in the narrative’s analeptic structure. Additionally, the remaining two narrative aspects regarding time, duration and frequency, exhibit a relationship indicative of Caruth’s aporia of repetition through its fragmented recurrences seen in the duration and the seemingly non-repetitive construction of the narrative frequency. Lastly, the relationship between Genette’s two non-temporal aspects, mood and voice, also present a partnership indicative of Caruth’s aporia of representation as the fragmentation of the various moods form a paradoxical relationship with the narrative’s postcolonial voice. Through an analysis of the

narrative discourse in addition to the previous thematic analyses on the traumatic aporia represented at the lexical and character levels, one can see that a more holistic analysis of *The Calcutta Chromosome* reveals it to be a manifestation of postcolonial trauma.

CONCLUSION

Through my analysis of the lexical, character, and narrative levels of *The Calcutta Chromosome*, I have argued that a holistic analysis of the novel reveals it to be a manifestation of postcolonial trauma. My analysis has specifically focused on examining the medical, technological, postcolonial, and political themes for Cathy Caruth's traumatic aporia of representation, belatedness, and repetition indicative of traumatic representations.

In my lexical analysis of *The Calcutta Chromosome*, I examined the novel's lexemes for representations of trauma. I specifically focused my analysis on the lexical instance of metaphor and its related functions of personification and metonymy due to the link between their representational function as indicated by the work of George Lakoff and Mark Johnson's *Metaphors We Live By* and its relationship to the representation of trauma as communicated in the literary arguments of Cathy Caruth. Furthermore, I used the hierarchical representation of metaphors via micrometaphors and megametaphors as presented by Zoltán Kövecses and this hierarchical relationship's value to science fiction via Darko Suvin in order to explain how the lexical level impacted the larger structural aspects of the novel. My analysis of the dominant themes revealed central metaphors, personifications, and metonyms as indicated by some of the existing scholarship on *The Calcutta Chromosome* that communicated key information about the novel. Within these analyses, I exposed key aporia within the significations of these metaphors to argue that they are lexical manifestations of trauma related to the postcolonial experience.

To connect my lexical analysis to my narrative-level analysis, I also analyzed the character roles of *The Calcutta Chromosome* for indications of aporia and their impact on the conveyance of the narrative. In this analysis, I was careful to analyze the roles of the characters rather than the characters themselves in order to prevent a logical fallacy regarding the

application of trauma theory. This concept was fully explained my lexical analysis of the postcolonial theme as I addressed Gayatri Spivak's main issues regarding the voice of the subaltern as it related to modernist aesthetics to which trauma aesthetics bear similarities. My argument that this analysis, as with any analysis involving trauma studies and its relationship to literature, suggested that the examination of literature should focus on its role as a representation rather than the subject of the trauma itself. Thus, my analysis agrees with Spivak's larger argument regarding the subaltern and his or her agency directly; however, it does make an argument for the representative nature that mediums of language such as literature afford based on Caruth's statements regarding literature and the psychoanalytic theory of trauma studies (*Unclaimed Experience* 3). Moreover, my analysis further used the theoretical grounding regarding the aspect of character in literature through the characteristics and definitions provided in the respective works of Uri Margolin and Mieke Bal. Through the applications of these definitions to the most relevant characters for each theme presented in the novel and the character analyses provided by existing scholarship on *The Calcutta Chromosome*, I revealed further aporia regarding the characters' various roles within these themes. Additionally, these analyses, where applicable, made reference to the lexical and narrative sections to show how the character roles serve as connectors between the two levels in order to reveal a holistic analysis of the novel as a representation of postcolonial trauma.

My final section embarked on an analysis of the narrative level of *The Calcutta Chromosome* to show how the narrative discourse also presented Caruth's aporia in relation to the four dominant themes in order to provide a holistic analysis of the novel as a manifestation of a postcolonial traumatic experience. In this section, I relied heavily on Gérard Genette's structuralist methodology of analyzing narrative discourse in the absence of a postcolonial

narrative discourse methodology. Through this application, I analyzed the narrative for its various narrative aspects and connected them to Caruth's aporia based on the relationships of their subjects. My final analysis incorporated an application of the aporic narrative discourse to the novel's dominant themes to reveal patterns throughout the narrative discourse. These patterns indicated a narrative-level representation of the traumatic aporia represented in the previous levels of the novel and, thus, provided a more holistic analysis of the novel as a manifestation of a postcolonial traumatic experience.

Through such an analysis of the traumatic aporia and their various manifestations throughout the lexical, character, and narrative levels of *The Calcutta Chromosome*, I was able to provide a more holistic analysis of the novel and provide a successful example of the impact that both trauma studies and postcolonial literature can have upon one another. This small representation of *The Calcutta Chromosome* as well as the other, more specified analyses have shown it to be a novel indicative of the postcolonial experience in a way that deserves more critical attention within Ghosh's oeuvre as well as in postcolonial literature at large. Moreover, the inclusion of trauma studies within the analysis of a postcolonial novel further calls for critical attention to the opportunities involved within such an examination. The criticism of Stef Craps in *Postcolonial Witnessing* warns of the pitfalls regarding the inclusion of trauma studies in an investigation of postcolonial literature and reminds critics to be mindful of confusing modernist aesthetics and other problematic phenomena for indications of trauma; however, this should not be read as an extermination of this partnership. Instead, Craps, as one of the leading scholars in this area, carefully examines where opportunities for expansion and inclusion can occur while also ending his book on a positive outlook for the future inclusion of trauma studies within postcolonial literary criticism. Through mindful analyses, scholars of both postcolonial literature

and trauma studies can further the critical interpretation within their respective fields in new and innovative ways.

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