

Navigating Climate Crisis and Resilience in the Face of Environmental Devastation in James Bradley's Clade**Tanuja Karak**

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Abstract

The escalating climate crisis is undeniably one of the most significant challenges of the twenty-first century, wreaking havoc on the environment, ecosystems, and both natural and human life. The present paper aims to investigate human resilience amidst the disrupted ecosystem and collapsing environment as portrayed in Bradley's novel Clade and how characters in the novel try to navigate the difficulties posed by environmental degradation. The ecological disaster, that the readers witness here, is caused by climate change, which is a modern existential problem. A close reading and textual analysis of the novel explores the spirit of human adaptability in the face of adversity. The paper delves into how the characters try to cope with and confront various ecological and social disruptions including climate change, pandemics, global warming and technological advancement. Overall, this study deals with the broader implications of human resilience and adaptation to real-world environmental challenges while emphasizing the importance of cultivating resilience in the face of uncertainty and exigency.

Keywords: Adaptation, Climate Change, Environmental Degradation, Resilience, Technological Advancement

Introduction: The contemporary world is being ravaged by the phenomenon of climate change. Stephen Jackson remarks (Khalaf, 2017), Climate change refers to the periodic fluctuations in the earth's climate, which trigger alterations in the atmosphere and interactions among various components of the earth's system, which includes poisonous methane emissions, loss in biodiversity, flood, drought, sudden change in weather pattern, wildfires, forest damage, sea level rise and many more (p. 54). To be more specific regarding the definition of climate change we can look forward to the United Nations' description which refers to climate change as a persistent alteration in global weather patterns and temperatures, mainly caused by human activities such as the burning of coal, gas, and oil, which release large amounts of greenhouse gases into the atmosphere. The repercussions of human induced climate disaster have succeeded in enticing writers from the world-wide to commence a new genre called Cli-fi or Climate Fiction. According to Gregors Andersons, after Danny Bloom coined this term (Climate fiction), People from all fields are becoming acquainted with this sub-branch of ecocriticism. Climate change fiction or Cli-fi is a new genre that generally deal with human induced global warming, disasters resulting from climate change and its after effects. The awareness of climate change spread even further among the people when teenage activist, Greta Thunberg addressed, this life-threatening issue at the UN Climate Action Summit (Manjhi, 2022, p. 1). It was her anxious voice 'We are putting life itself at jeopardy if we do not immediately alter the way of life', that awakened the entire humanity from its long-ignored sleep. According to Trexler and Johns-Putra (2011), It was the 1970s, when the genre of Cli-fi started its journey with the publication of Herzog's *Heat* (1977) which

generally deals with a plausibly imagined future history dominated by global warming (p. 287). They say there are two ecocritical approaches of climate change literature, one is that deals with climate change and helps us to adapt to the new situation while, the other addresses climate change as a cultural phenomenon (pp. 185-191).

Climate change novels often fall within the dystopian genre, offering thought-provoking depictions of post-apocalyptic scenarios aimed at raising awareness about potential future challenges which Greg Garrard also mentions as something yet to happen. Many critics and scholars while contributing to the field of Climate change fiction have argued that climate change is a cultural, political phenomenon and Cli-fi, on surface level, deals with environmental degradation resulting from the climate crisis and employs the techniques of science fiction though some are dealing beyond their conventional way of narration. They delve into the psychological and social implications of climate change on human societies, emphasizing how climate change is not only a mere ecological crisis but also how it impacts mental health and cultural norms of people. The condition when one experiences pain or distress caused by the destruction of the environment is known as solastalgia, a term coined by Glen Albrecht in 2005. Khalaf (2017) in his study, has classified three different categories of solastalgia. The first one focuses on the concept of 'solace' and 'desolation', when one feels distressed or pain in the absence of comfort in one's own territory. The second condition of solastalgia happens when one becomes frustrated and experiences psychological instability due to the changes caused in the environment. And the last condition of solastalgia refers to the condition when one cannot find solace in the present events of life and becomes depressed (p. 57). As Rob Nixon compares climate change to as somewhat slow violence, means a violence which progresses slowly and brings about almost invisible changes in weather patterns like late monsoon, early spring or winters or any extreme weather condition. Unfortunately, these changes often go unnoticed by human beings, who continue to perform their daily activities and become accustomed to the deteriorating environment. It is only when the situation becomes disastrous that people start noticing strange occurrences in their familiar surroundings and respond by coping with or adapting to the new situation (Khalaf, 2017).

Upon closer analysis of James Bradley's *Clade* (2017), it becomes evident that the novel belongs to the genre of climate fiction, depicting an apocalyptic and post-apocalyptic future that incorporates elements such as slow violence, psychological desolation, solastalgia, and the advancement of AI to detect extraterrestrial life. It also explores adaptation and coping strategies, offering readers a sense of hope for embarking on a new future.

Clade: Climate Crisis, Altered Lives, Resilience and Adaptation:

Australian author James Bradley, in his novel *Clade*, shows the present and future effects of climate change and its far-reaching effects as they are not confined to a particular country and region. It portrays harrowing pictures from Antarctica to Asia in the aftermath of climate change that is annihilating the planet gradually. Furthermore, it offers a thought-provoking exploration of human resilience and adaptation in the midst of environmental chaos. The novel is set in the backdrop of environmental degradation where the entire globe is being ravaged by deadly viruses, storms, extreme rainfall, wildfires, scarcity of food, extinction of species, causing awe, apprehension and endless despair in the characters. By examining their emotional and psychological experiences this study aims to shed light into the process of human resilience and adaptation in the face of a rapidly changing world. The novel begins with present to near future which follows three generations of the Leith family, stuck in a world hit by climate change and each chapter of the book deals with one of the member's experiences and life story entangled with vivid descriptions of how climate change

is affecting their life. The word 'Clade' originated from the Greek word 'klados', which usually refers to a group of living organisms sharing a common ancestor. Here, the common ancestor is Adam Leith, a climatologist, who is researching the rapidly melting of Antarctica's ice and the cause of the planet's warming in recent years.

Each chapter of the book addresses a different crisis and how the characters cope with and respond to it. To shed light on human resilience and adaptation, and how individuals grapple with adversity, this paper will examine each chapter in detail. Every chapter takes place in a different time span, thus illustrating that climate change is not a one-day phenomenon, but rather a gradual and continuous process. At the very beginning of the novel, we can see both Adam and His wife Ellie are struggling with infertility and undergoing IVF treatment, but their apprehension intensifies when they learn about the changing climate and the impending disaster:

In the Arctic the permafrost was melting; in Greenland and Antarctica the ice sheets were destabilizing, their deterioration outpacing even the most pessimistic models; in the Atlantic the currents were growing more erratic, slowing down and sifting. Even the oceans themselves seemed to be dying, their waters more acidic by the month. (Bradley, 2017, p. 17)

Not only does the environment collapse, the ocean die and Antarctica's ice melt, but their personal relationship also decays gradually. They are in a state of constant bewilderment about the uncertainty impending in the near future and are unable to resolve their difficulties. As they keep themselves aloof and wait for the end of everything, the situation grows increasingly urgent, and Adam finds himself becoming increasingly alarmed about what is to come, "Each week there seemed to be new evidence that the process was hastening" (p. 17). But they try to cope with the circumstances in whatever way they can, keeping a faint glimmer of hope within them, "For what else is there to do, except hang on, and hope?" (p. 23). The notion of solastalgia is evident here, as they are psychologically exhausted by witnessing the adverse effects of environmental degradation on the earth. From the very beginning, readers are introduced to the complex interplay between human disability and environmental degradation, which is exemplified by Ellie's struggles with childbearing (Monaco, p. 209).

As environmental degradation worsens, the book depicts a world where weather patterns are increasingly disrupted, including the late arrival of the monsoon, which Adam is researching as part of a team working to model the changes to the South Asian monsoon (Bradley, p. 30). "The rains that usually arrived in July or August failed to appear, leaving the subcontinent to bake in record heat. Crops failed, leading to food shortages and starvation" (Bradley, 2017, p. 30). Moreover, the gradual climate negotiations have made Adam and Ellie's relationship more complicated. Both are undeniably, agitated stemming from the intense atmosphere: "The report from Thailand is followed by items about unexplained fish deaths in Tasmania and Victoria, and yet another story about the sudden die-offs in the west" (p. 36).

One of the next significant events in the novel occurs when Adam and Ellie's daughter, Summer, is a grown teenager, and she accompanies her mother to the beachside house of Maddie, who had lost her son to throat cancer at the tender age of three. During their visit, Maddie reminisces about how environmental disasters had also disrupted their lives at that time: "The year a real disaster began- mega- blizzards in North America, tornados in China, the first widespread methane ruptures in Siberia" (p. 61). Despite the devastation, she finds beauty in the destroyed environment and discovers something lovely on the ravaged

seashore. This reflects humanity's innate ability to find solace in darkness and hope in despair. Through Maddie's perspective, Bradley illustrates how people adapt to their circumstances by embracing hope.

In the fifth part of the book, *Boiling the Frog*, we see Adam in England attending a conference. The chapter takes place about ten to fifteen years after the previous one (Demeulenaere, p. 16). As in previous chapters, ecological destruction continues to escalate at an alarming rate in this chapter as well. Readers get to know, "NASA have been tracking a tropical hurricane in the Atlantic" (p. 95). Noah, Summer's son, a boy with autism, "Apparently he's on spectrum, but although he's a bit odd he's also super-bright" (p. 189), always stresses himself out by contemplating the impending storm. It's apparent that he is particularly impacted by the destruction. It's understandable that people on the spectrum find the modern world to be more daunting and intricate:

I can see it in Noah, in how alone he often seems. When I first met him, I thought he was weird, cut off, but more time I spend with him, the easier it is to see he has feelings, he just doesn't know how to articulate them, how to control them, so when they come, they come in a rush as anger or frustration (Bradley, 2017, p. 214).

Upon arriving in London, Adam was astonished to see the *triffids* thriving alongside oak and pine trees (p. 99). *Triffids* are genetically engineered plants, which is a deadly threat to humanity. In this book it represents a catastrophic outcome of scientific experiments and environmental disruptions. Badley's reference to *Triffids* may serve as a warning about the dangers of scientific overreach, environmental disregard, and the looming threat of catastrophic consequences in the face of climate change.

As the storm approaches with intense ferocity, Adam, Noah and Summer rush to the evacuation centre to escape the monstrous storm. The situation is dire, as described: "Out on the road the water is already rising, spilling over the gutters and footpaths and filling ditches. Although it is not moving fast it makes walking difficult, and once again Adam finds himself carrying Noah" (p. 123). Despite the challenges, the three manage to survive and take shelter in a crisis camp. However, England suffers a devastating loss of life and livelihood (Rogoredo, p. 99). After the storm subsides, Summer gazes at the stars and remarks, "They are so bright" (p. 131). Through this narrative, the novel highlights the resilience of ecosystems and the natural world, emphasizing the importance of preserving ecological balance. Bradley conveys that life will persist despite drastic changes, and people will continually adapt to their surroundings.

The novel depicts a significant loss of biodiversity, as we witness, ACCD, which means Accelerated Colony collapse disorder of Bee due to overuse of insecticide:

This new wave of collapses is certainly different from those in the past, both in severity and distribution. In some parts of Europe and the United States bee populations have gone altogether, and farmers have been importing bees to pollinate their crops (Bradley, 2017, p. 166).

Amir, a doctor, a Bangladeshi refugee who has escaped after the government fell there and become a beekeeper illegally (Demeulenaere, p.17). Amir says:

I am afraid it might be. None of the collapses before have been anything like this. It began in Europe but spread through America and Asia in less than a year. For a while we were protected, but now the colonies here are dying as well (Bradley, 2017, p. 163).

In the subsequent passage, *A Journal of the Plague Year*, follows a journal written by a teenage girl Li Lijuan who later on becomes Noah's company. The journal talks about a virus breaks out in China and spreads across the globe- AVRS; Acute Viral Respiratory Syndrome. The origin of the disaster remains unknown, but its impact is devastating: millions of people have perished. The world has descended into complete chaos, with anarchy and disorder reigning supreme: "There are reports of people panic-buying, filling their cupboards with food, and stories about unrest in the camps up north" (p. 196). The AVRS disease, which targets the respiratory system, bears a striking resemblance to the COVID-19 pandemic, a global outbreak of coronavirus. Reports indicate the emergence of a new flu strain transmitted by a previously unknown virus (p. 191). Similar to the Coronavirus, which originated in Wuhan, China and gradually spread worldwide, AVRS is initially detected in China: "Apparently, there are cases in Beijing now. And Shanghai has been monitoring the traffic and telephones, keeping it under wraps" (p. 193). Viral photos reveal disturbing scenes of hospital overcrowding, with chaotic scenes of patients struggling to access medical care, which are shocking and devastating. The virus spreads stealthily, its unpredictable incubation period allowing it to silently infect people worldwide. Gradually, it reaches every corner of the globe: "This last week, things seem to have gotten rapidly worse. In China and India, cities are burning, death rates are skyrocketing, and there's still no sign of a cure" (p. 214). As the situation grew more dire, countries attempted to isolate themselves to control the devastating condition, but despite these efforts, the virus continued to spread, and the hope of finding a cure remained elusive. Even in the midst of utter confusion and distress, Lijuan held onto hope for a better future, glimpsing a faint glimmer of promise even in the darkest shadows: "Then it'll end anyway, I guess. It's just that a lot more people will die" (p. 205). The virus was accompanied by the spread of malaria, cholera, and other diseases. Fearing the imminent consequences and the arrival of a catastrophic flood, Adam, Noah, and Lijuan managed to flee, escaping the lethal consequences. Even in the unmanageable state, they found a way to cope. The devastating impact of the disaster was evident in the loss of various species from the globe: "These are things we have lost: Birds, Bananas, Tigers, Frogs, Bees, Coffee, Polar bears, Coral" (p. 207). Despite the personal tragedy of losing her family in China, Lijuan refused to lose hope for a better future and found the courage to comfort Noah: "It's going to be okay; I realized I wanted it to be okay for him as much as for me" (p. 207). Throughout the narrative, the characters struggled to come to terms with the uncertain difficulties, yet they consistently held onto hope for a better tomorrow.

The novel showcases technological advancement in the form of "virtual recreations of the dead assembled from photos and video" (p. 222). Dylan, Lijuan's future husband, creates simulations of deceased individuals, striving to make them as lifelike as possible (Demeulenaere, p. 15). By introducing this concept, Bradley takes the AI advancement system to a new level. As the pandemic has claimed numerous lives, people seek comfort in these virtual recreations, purchasing subscriptions to simulate interactions with their loved ones. Although Cassie is aware that the sim's actions are generated by AI, she finds solace in seeing her deceased brother's virtual activities. Bradley illustrates how people are turning to virtual reality as a means of escapism, coping with the harsh realities of their surroundings.

Towards the end of the novel, a gradual temporal shift occurs, transitioning the narrative from the present day to a future setting in the 2070s or 2080s. Noah, now working at a radio astronomy station (Rodoreda, p. 102), has turned his childhood fascination into a career as an astronomer. He is currently engaged in research aimed at detecting signs of intelligent life in space. Noah's efforts are rewarded when he detects a signal, but he is unable to decipher its meaning. He tirelessly searches for the meaning behind the signal, "The

message says that. We are here. You are not alone" (Bradley, 2017, p. 283). According to Rodoreda (2022), Noah's discovery constitutes a new language and evidence of life from another planet (p. 103). At times, Noah's hopes for humanity's survival are dampened by the planet's disasters, as evidenced by the melting of the Arctic ice, the collapse of the Antarctic ice sheet, and the burning of the Amazon rainforest (Bradley 285). However, he ultimately comes to realize that while human life may be fleeting, the planet Earth will continue to exist in one form or other.

The book's final section takes place approximately 16 to 18 years in the near future (Demeulenaere, p.16). This passage depicts a post-disaster world where Izzie celebrates her birthday with a friend on and receives the news of Adam's death from her mother, Lijuan. Although Adam's passing is a significant loss, the chapter reveals a glimmer of hope that persists within humanity. Despite the catastrophic consequences of the disaster, including the collapse of ecological harmony, the loss of millions of lives, and the suffering of nature, the narrative suggests that this is not the end. Instead, humanity will adapt to the uncertainty, finding a way to move forward. As Izzie comes to realize, "that whatever else happens, this is not an end but a beginning. It is always a beginning" (Bradley, p.297).

Conclusion: Bradley's novel *Clade* follows the pattern of climate change fiction, which highlights the anthropogenic activities and technological subversive activities on Earth (Hiwale and Tupe, p. 39). The human urge for technological advancement and industrial development has brought about climate change, and now humans are suffering its consequences. Bradley has done a noble work by writing this novel, as it tries to break humanity's prolonged sleep by shedding light on the complexities of climate change and its catastrophic consequences. The novel shows how individuals and communities navigate a rapidly changing world. The characters in *Clade* are confronted with wildfires, rising sea levels, species extinctions, floods, storms, extreme weather events, and other consequences of environmental degradation. Despite these challenges, they find ways to adapt, whether through creating new technologies or modifying their lifestyles.

The novel also explores how individuals adapt emotionally and psychologically to the changing world. Characters witness loss, fear, grief, and the loss of familiar landscapes, yet they find strength within themselves and in their relationships with others, demonstrating the spirit of human resilience. They find beauty in the ruins of climate change, seeking aesthetic solace to cope with its transformations, despite the sorrow. According to Bradley, to lead a purposeful life, we need to practice valuing what can be controlled and finding significance in daily routines that provide a sense of continuity, even in the face of catastrophic changes.

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