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Retrospective Effect of Global Environmental Crisis: A Semiotic Study on Posthumanism and Hyperobject in Amitav Ghosh's *Gun Island*

V. Selvanayaki

*Ph.D., Research Scholar, Department of English and Foreign Languages
Bharathiar University, Coimbatore*

Dr. M. Kasirajan

*Assistant Professor, Department of English and Foreign Languages
Bharathiar University, Coimbatore*

Abstract

*The impact of the global planetary crisis colossally blurs the hierarchical structures between humans and non-humans. The recent waves of ecocriticism critically defy the anthropocentric stand. Amitav Ghosh's *Gun Island* (2019) is transnational and set across the different temporal and spatial scales that constitute the retrospective effect of the triple planetary crisis on both human and animals with a blend of history, natural science, folklore and fiction. This study examines the signs, signals, and semiocide in the select novel using Bruno Latour's Actor-Network Theory (ANT). This AT enables interpreting a network of connection between humans and animals, in *Gun Island* (2019) especially between character Piya and Dolphins (Orcaella brevirostris). The analytical framework employed for the study is descriptive content analysis and biosemiotics to study hybrid-text embedded narratives. The notion of hybrid text implies the scientific truth embedded in the fictitious narrative. This study postulates two things: the philosophical strain of Posthumanism and a phenomenon of hybrid text is present in Amitav Ghosh's *Gun Island* (2019).*

Keywords: Global Planetary Crisis, Hybrid Texts, Hyper Object, Posthumanism, Semiotics, Semiocide, Orcaella Brevirostris.

Introduction

Literature offers a space to rethink ethical and ontological boundaries in hyperobjects; it depicts the sensory, affective, and semiotic interactions between human and non-human actors. Animals in climate fiction often function as indicators of environmental stress through their altered behaviors, migrations and extinction signals. Yet beyond their representational role animals also serve an actor, agency, resistance, and interspecies communication. Contemporary climate narratives increasingly foreground the relationality between human and nonhuman lives, unsettling the traditional literary hierarchy that places humans at the center of meaning-making. The works like Romesh Gunesekera's *Reef* (1994), Charlotte McChanoghy's

Migrations (2020), Rohan Chakravarty’s Green humour for Greying planet (2021) etc., imagine new forms of kinship, vulnerability, and survival through the depiction of endangered species, zoonotic network and migrations, showcasing human displacement. The waves of ecocriticism have emerged as a critical lens to evaluate the interrelation of human and non-human entities.

The global planetary crisis is a connection of climate change, biodiversity loss, and environmental pollution. Amitav Ghosh’s Gun Island (2019), is emblematic of this narrative turn. Ghosh’s narrative invites readers to reimagine agency across species boundaries. He highlights the shared vulnerabilities of humans and animals in the face of a triple planetary crisis. The character of Piya, Marine cetologist and her interactions with the endangered Orcaella brevirostris (Irrawaddy dolphins) serve as a compelling focal point for examining the interspecies connectivity.

This study applies Bruno Latour’s Actor-Network Theory (ANT) to examine the distributed agency in Gun Island, situating both human and non-human entities as active participants within ecological and narrative networks. Alongside AT, the framework of biosemiotics is employed to analyze signs, signals, and the phenomenon of semiocide. This study examines the textual hybridity and interspecies communication. The concept of “hybrid texts” refers to the embedding of scientific facts within fictional narratives. This hybridity allows Ghosh’s novel to blur boundaries between fact and fiction, human and animal, thereby creating a textured narrative that is rooted with the philosophical strains of posthumanism. Thus the study argues that Gun Island (2019) presents a posthumanist strain of ecological subjectivity. It asserts that both the form and content of the novel challenge anthropocentrism and foster a semiotic openness toward non-human life forms.

The Retrospective Effect of Cyclone Aila in Sunderbans

Amitav Ghosh’s reference to Cyclone Aila (2009) in Gun Island (2019), functions as a singular catastrophic event and a hyperobject (natural disaster) which is “massively distributed in time and space”. Its effects persist long after the storm has passed. Ghosh contrasts Aila with earlier cyclones Bhola (1970) that caused immediate death but left behind recoverable landscapes. In Aila’s aftermath, the “hundreds of miles of embankment... rendered uncultivable for a generation” (Ghosh, 48) denotes the retrospective effect, where the disaster’s consequences lead to the separation from family, destruction of communities, soil erosion and increased salinity.

Through descriptive passages the text reveals how climate-induced trauma is intergenerational and migratory, not contained within disaster zones alone. This retrospective effect manifests devastatingly in the socio-political dimension of the Sundarbans in the form of poverty, sex trafficking, smuggling, begging, drugs and migration. Ghosh, through the voice of Moyna, reveals that trafficking networks surged in the aftermath of Aila not as direct consequences but as emergent systems in the vacuum of environmental viability. Women are abducted into urban brothels, and young men are lost to foreign labor and migration networks and “never heard from again” (Ghosh, 49).

The young generation, particularly, are caught between survival and self-erasure. Ghosh critiques the illusion of education as a universal solution, especially when systemic failures and infrastructural gaps render it inaccessible. In the novel, education itself becomes a hyperobject which is vast, unevenly distributed, and out of reach for those in marginalized geographies like the Sunderbans. Moyna’s hope that Tipu would “finish college” is undone by circumstance, revealing how aspirations are displaced by ecological trauma and structural inequality. These fractured futures embody the posthuman condition, where identity is shaped not only by social and cultural forces, but by the material agency of land and a healthy environment.

Posthumanism and Hyperobject :Semiocide, Echolocation and Disorientation

Bruno Latour's Actor-Network Theory (ANT) helps frame these encounters not as hierarchical or anthropocentric but as distributed networks of agency. The entanglements of Deen, Piya, Rani (the dolphin), and Tipu form what Latour might call an actant cluster, where dolphins carry GPS trackers, humans read sonar disturbances, and weather systems shape both migration and memory. In *Gun Island*, Ghosh captures the crisis of the Anthropocene through the phenomenon of semiocide “the erasure or destruction of sign systems, especially those embedded in nonhuman life”. In biosemiotics, the term semiocide can be used to refer to the obliteration of environmental and animal languages that enable species to survive, navigate, and reproduce. The beaching of dolphins and whales, and the phenomenon of fish kills are not just ecological anomalies but semiotic collapses. In the novel, the Irrawaddy dolphins' echolocation is disrupted by anthropogenic sonar, leading to beaching events. These dolphins, especially Rani, are no longer able to “read” their world as their environment has been destroyed. When Rani, the Irrawaddy dolphin matriarch, strands herself along with her shrinking pod, it marks a moment of profound disorientation. Piya notes that these creatures, who rely on echolocation, are increasingly unable to navigate. It is ecocidal and the destruction of meaning-making systems across species.

The author's focus on the oceanic dead zones, regions of hypoxia caused by anthropogenic pollutants such as fertilisers and refineries become a metaphor for global ecological crisis. Ghosh, through Piya, reveals that dead zones are not isolated phenomena but hyperobjects shaped by cumulative human-industrial residues. “They spread over 10,000 square miles of ocean” and are now “appearing in rivers” like the Mississippi and Pearl (Ghosh, 95–96). These dead zones are not only ecological anomalies but signs of a marine ecosystem in crisis. From biosemiotics, these marine symptoms are readable as signs of distress: the dwindling Irrawaddy dolphin pod, the altered migratory paths, and the sonar-disoriented strandings of Rani and her calves, encodes an ecological sign. Piya's anthropomorphisation of dolphins (Ghosh, 91–92) reflects a posthuman semiotic attempt to understand subjectivity across species. The dead zones are spaces of semiocide: where chemical pollutants erase microbial signals, and oxygen-deprived waters suppress the basic communicative loops that sustain aquatic ecosystems.

Furthermore, this semiocide is not limited to nonhumans. The cultural semiotics of the Sunderbans' human communities are also in collapse. The shared knowledge of fishing seasons, soil fertility, tidal patterns, and herbal medicine is rendered obsolete in the face of climate change and salinization. As Moyna puts it, “No one knows where they belong anymore—neither humans nor animals” (Ghosh, 97), she articulates a shared dislocation that is both material and semiotic.

These Species lose not only their habitat but their codes of orientation. Similarly, humans lose the semiotic bonds that connect them to place, ancestors, and memory. The actor-network becomes strained or incoherent: dolphins cannot navigate; fishermen cannot read currents; youth cannot imagine futures in mangrove territories that are dying. Thus, Ghosh offers an expanded form of retrospective effect not only social and economic but semiotic. The impact of climate change is not only in the loss of life, but in the loss of semiotic cohesion that defines relational existence. When species can no longer “read” the world, they are estranged from it and thus, more vulnerable to extinction.

Textual Hybridity: *Gun Island* as a Posthuman text

In *Gun Island*, Amitav Ghosh blurs the boundaries between fiction, scientific report, ethnographic observation, historical myth, climate forecast, and personal narrative, constructing a textually hybrid form that reflects the ontological hybridity of the climate crisis in the region of Sunderbans. The novel is composed with ecology, myth, materiality, and modern science. This hybridity resonates with Bruno Latour's Actor-Network Theory (ANT), particularly reframing semiotics

beyond the analysis of fiction and myth into scientific and technical texts. In Latour’s view, semiotics ceases to be about “interpreting signs” and instead becomes a method of tracing associations across heterogeneous domains.

The novel’s interleaving of textual forms such as field notes, GPS data, Bengali folk tales, historical records and news clippings reflects what Latour calls a “new hybrid status” for entities that are both discursively constructed and materially active. For instance, Piya’s scientific mapping of dolphin migration is considered part of the story’s semiotic structures. Similarly, Rani, the dolphin, is not merely a symbol of environmental stress but an actant in the narrative. The reality of endangered dolphins and the fictitious story of the Rani (*Orcaella brevirostris*) are not separate planes but co-constructed layers of meaning and materiality.

This textual hybridity also reflects biosemiotics. Such an approach challenges traditional narrative form and pushes toward a posthumanism. Human experience is no longer the central axis; rather, it is one node in a shifting network of ecological, mythical, and technological actors. This structural decentering makes the novel posthuman not simply in theme, but in form. The novel’s textual hybridity reflects the ontological hybridity of the anthropocene, where dolphins beach themselves in response to submarine sonar, myths prefigure scientific fact, and climate migration is tracked through fragmented testimony and digital surveillance alike. Gun Island dissolves the boundary between “story” and “reality” by encoding scientific observations within narrative structures. This aligns with Latour’s assertion that the burden of theory lies in the recording, not in the shape of what is recorded. The novel grants equal ontological weight emphasizing that in an entangled world, texts and things are co-constitutive.

Conclusion

The key findings of the study is that Gun Island embodies the retrospective effect of environmental crises, the articulation of semiocide and textual hybridity. Amitav Ghosh’s Gun Island exemplifies a literary response to the triple planetary crisis by dismantling anthropocentric hierarchies and showcasing the connection of humans and nonhumans across space and time. Through the lens of Actor-Network Theory and biosemiotics, this study reveals how signs, signals, and stories are embedded in the environment. The altered migratory paths of dolphins, fish kills, and beached whales represent the ecological stress, devastation and semiocide, caused by human induced climate change. The retrospective effect of events like Cyclone Aila exposes the long-term consequences of environmental disasters, including forced migration, sex trafficking, and the disruption of interspecies networks, all of which are powerfully narrated through hybrid-textual strategies in the novel. In terms of hyperobjects, the novel foregrounds how climate change, oceanic dead zones, and migration flows exist on spatial and temporal scales beyond human grasp. These are not abstract threats but lived realities in the Sunderbans, where soil salinization, arsenic poisoning, and economic displacement operate with slow violence. The novel’s blending of scientific discourse, myth, and historical memory constructs a hybrid text, where fiction becomes a medium for conveying climate realities. This hybridity is not merely stylistic but ontological which positions literature as a space where nonhuman actants participate in shaping narrative realities.

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