



# **Marine Entanglements: Tropical Materialism and Hydrographic Imaginary in Nnedi Okorafor's *Lagoon***


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## **Abstract**

In the epoch of the Anthropocene the environment is predominantly characterised by innumerable entanglements of matter. According to materialist theorist Jane Bennett, matter acts as a 'distributive agency' that intertwines itself with a "multiplicity of other material bodies and formations" across space and time (Khan, 2012, p. 42). Nnedi Okorafor's novel *Lagoon* (2014) centres around the material entanglement scenario between oil and marine waters off the coast of Nigeria in Africa. Okorafor's Afrofuturist Science Fiction narrative focuses on oil's vitality and overwhelming presence in the tropical marinescape and elaborates on the significance of oil as a material determinant that forces us to rethink matter's affective influence in the marinescapes of the tropics. This article analyses how human extracted matter like oil acts as a vital agentic force that confronts, reconfigures, and modifies the physical compositional properties of marine water. The article employs tropical materialism to study the performative role of matter as a 'hyperobjective' register within the constructed eco(aqua)-speculative and hydrographic imaginary of Okorafor's Sci-Fi narrative.

**Keywords:** Tropical Materialism, Nnedi Okorafor, Hydrographic Imaginary, Hyperobjects, Material Determinant, Afrofuturism, Sci-Fi

## Introduction: New Material Determinants and Tropical Marinescapes

Humans have wandered the Earth for thousands of years but never has our capacity to alter the Earth's ecosystem at a larger scale been more prominent than it is today.  
— Lahr, 2018

Contemporary studies in the Earth's planetary evolution have registered a rapid growth in geo-analytical observations that map the archaeological imprint of manufactured matter in the Anthropocene – the current era of anthropogenic change. These manufactured inputs point to the emergence of new material determinants that open up a field of multiple intersections, continuities and ruptures in the nature-culture continuum and the complex relational field that humankind shares with the planet's ecosystems, including marine ecosystems. These material determinants have altered the manner in which we comprehend embodiment, as “living entanglements involving people, materiality, space and place” (Lundberg et al., 2022, p. 1), and its affect and functionality relating to global marinescapes. Marine ecosystems represent a vibrant and “heterogeneous environment that are hydrologically connected” to a highly enriched biophysical space (Poff, 2014, p. 247). The hydrological equilibrium of marinescapes rests on the sustenance of aquatic life processes that are closely linked to the continuation of the Earth's eco-climatic balance. Pervasive human activities like the construction of offshore oil platforms for drilling and submarine coastal oil pipelines lead to unprecedented ecological violence that spans “across time and space in ways that may be subtle but devastating” (King, 2020, p. 42). These marine-based oil infrastructure development projects have the potential to contaminate aquatic ecosystems through oil-spills – scenarios that present disastrous and irreversible events with severe long-term after-effects that continue to register their presence beyond spatio-temporal boundaries. Oil spill scenarios over the vast and unending expanses of the oceans function as “hyperobjects”<sup>1</sup> (Morton, 2013, p.1) that produce a “viscous, sticky and interobjective” (Hudson, 2014, p. 83) hybrid material from the co-emerging associations between two different matters (oil and water). In their seminal work, *New Materialism: Interviews & Cartographies* (2012) Rick Dolphijn and Iris van der Tuin argue for the need to introduce an approach that can look into the “transversality of new materialism” (Dolphijn & Tuin, 2012, p. 93). This idea is not limited to the inter-material and trans-material fusions between two different matters that are distinct in terms of their property and composition, it also encompasses a diverse range of aspects that transcend the physical act of material entanglement. As they explain:

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<sup>1</sup> Entities so enormous in space-time that they defy ordinary comprehension.

The term proposes a cultural theory that radically rethinks the dualisms so central to our (post-)modern thinking and always starts its analysis from how these oppositions (between nature and culture, matter and mind, the human and the inhuman) are produced in action itself. It thus has a profound interest in the morphology of change and gives special attention to matter (materiality, processes of materialization)....” (Dolphijn & Tuin, 2012, p. 93)

The Anthropocene’s marine environments are marked by multiple mutations brought about by this ‘morphology of change’ and are characterised by hybrid waterscapes where the chemical properties of manufactured matter, like oil, grotesquely transform the composition of natural elements, like water. The oceanic ecosystems of the tropics in particular experience severe deleterious effects of oil mercantilism<sup>2</sup> that lead to water pollution, sea bed erosion and aquatic species extinction – which in turn impact the entire planet. There is a characteristic “transdimensional” (Hudson, 2014, p. 83) materiality that is inherent to the understanding of hyperobjects in the Anthropocene which make them particularly difficult to comprehend. Literary narratives that combine the insight of genres like petrofiction and eco-speculative science fiction are better equipped to capture the magnitude of the hybrid matter entanglements of oil drenched seascapes. Contemporary science fiction narratives from the tropics have gained significant momentum in portraying the functionality of manufactured matter and its affective engagement with nature within the waterscapes of the equatorial zone.

This paper elaborates on the potential study of matter’s affective quality within the conceptualization of eco-speculative imaginaries in the contemporary narratives of Afrofuturism with special reference to Nnedi Okorafor’s SF novel, *Lagoon* (2014) set in Lagos, Nigeria. It analyses *Lagoon* as a tropical eco-speculative petrofiction that functions within the realm of hydrographic imaginaries and focuses on the material-ecological engagements of petro-capitalism that has led to the creation of a tropical marinescape contaminated with manufactured matter like oil, poisoning the waters of the Atlantic surrounding the Lagos Bar Beach in Nigeria. It also focuses on a unique form of embodiment; a sort of marine subjectivity that incorporates an ichthyological entity (a swordfish) with consciousness. This embodiment also emphasizes the “indexicalities, oppositionalities, and incommensurabilities that are at play in the

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<sup>2</sup> Tropical oceans are sites of extensive marine oil mercantilism, including drilling platforms, submarine oil pipelines and the busy traffic of oil tankers crisscrossing the equator and the tropics, while the mangrove, seagrass, and coral reef environments which are found in the tropics and subtropics are highly susceptible to oil spills. Not only are each of these ecosystems particularly vulnerable, difficult to access, and ‘clean up’, but these ecosystems often co-exist, and each is vital as aquatic spawning and breeding grounds for thousands of species of plants and animals.

entanglements of human and other-than-human beings" (Chao, 2022, p. 169) within the aqua-terra continuum of the narrative. The paper highlights how Okorafor's narrative functions as an example of tropical Afrofuturism that employs a hydrographic material imaginary to flag the dark entanglement of manufactured matter with the natural that has the potential to alter marinescapes and render them toxic. This paper highlights the role played by eco-speculation in rethinking tropical materialism and matter entanglements and in doing so constructs ecological imaginaries that attempt to remediate critical zones of habitation for marine life in the tropics. The questioning and re-construction that this creative activity undertakes has a unique advocacy function – what Braidotti describes as “the multiple interconnected movements, meanings and mutations of diverse subjects” (Braidotti, 2006, pp. 4-11) that expands across the physical, material and the spatio-temporal. The paper will also focus on the author's affective connection with the Nigerian society and environment through the literary tropical imaginary she has crafted.

### **Petrofiction and Vital Materialism**

Nnedi Okorafor's *Lagoon* (2014) can be considered a definitive example of a contemporary petrofiction narrative that engages with the alarming consequences of petroleum contamination and its after effects on the marine ecosystem of the Atlantic that spreads along the coastline of the Lagos “Bar Beach” (Okorafor, 2014, p. 21) in Nigeria. “Petrofiction” is a word coined by Amitav Ghosh (1992) to describe Jordanian writer, Abdelrahman Munif's five-part cycle novel, *Cities of Salt* (1984) that elaborated on the centrality of oil in the global neo-liberal economy and its overarching impact on the environment. Okorafor's petrofiction narrative exclusively deals with the overwhelming influence of oil as a hyperobject in the tropical eco-speculative imaginary. Moreover, it stands witness to the material impact of petroleum and its irreversible aftereffects on the tropical marine ecosystem. It is important to note that the significance of matter and its overarching influence in *Lagoon* are also closely related to the topographical or cartographical mapping of the narrative's setting. This establishes the presence of manufactured matter as a topographical determinant that plays an integral role in contextualizing the idea of tropical materialism in Okorafor's novel. It is interesting to note how Okorafor's narrative actually represents the opposition between the matterscapes of oil and water by employing a tropical eco-speculative imaginary. It is not sufficient to analyse this narrative's eco-speculative performance purely on the basis of matter entanglement in the tropics. On the contrary, with the help of the characteristic transversality of new materialism Okorafor portrays the narrative through a lens of “hyperobjective” (Morton, 2013) materialism. The fact that the tropical marinescapes are under the influence of hyperobjective registers like oil spill scenarios, opens up the study of tropical materialism and its entanglement from a hyperobjective perspective. At the turn of the 21<sup>st</sup> century, the

characteristics and aspects of petrofiction overlapped with the genres of SF (Science Fiction), climate fiction, fantasy and worldbuilding narratives. The emergence of this new literary and inter-generic intersection facilitated the exploration of the rampant petro-capitalist perspectives and policies in real time through the lens of critical and speculative imaginaries. Construction of ecological imaginaries based on the ideas of futuristic visualization act as a very functional element in the sci-fi narrative technique. With petroleum as one of the key proponents of the fossil fuel culture, the question of its material footprint has become a major concern in global environmental and climatological understanding. It is a well-established fact, that oil, as a material agent of ecological change with regard to its adverse effects like pollution and contamination, leads to the creation of toxic environments. The most frequent cases of oil pollution are recorded over the oceanic expanses around the world. Oil spills in ocean waters produce toxic marinescapes that adversely modify the aquatic ecosystems which sustain marine life and maintain underwater biodiversity. SF enthusiasts and thinkers have cultivated this concept of oil as an invasive material agent that radically and forcibly changes the existing understanding about water and what it embodies.

SF narratives like Nnedi Okorafor's *Lagoon* (2014), Jack Vance's *The Blue World* (1966), Robert Silverberg's *The Face of the Waters* (1991), Sheri S. Tepper's *The Waters Rising* (2010) and Emmi Itaranta's *The Memory of Water* (2014) emphasize the timeless presence of water and the vital role it plays as a fundamental element whose role is not limited to its "physical and chemical materiality" (Ball, 2000, p. 9) but plays itself out in the multidimensional levels of the social and cultural. They demonstrate water as an "elemental, material agency distributed across bodies, human and non-human" (Khan, 2012, p. 43) by emphasizing its co-constitutive, "lively and energetic play of forces" (Khan, 2012, p. 42). Within the theoretical field of New Materialism, Jane Bennet in *Vibrant Matter: A Political Ecology of Things* (2010), foregrounds the agentic "vitality of matter" (2010, p. 7). In her view "material formations" in the environment cannot be considered as "passive or inert stuff" inconsequential to the regularities of life processes (2010, p. 7). To the contrary, she argues that matter is an active and influential force that plays a functional role in evaluating the relationship of the human with the non-human in a more than human world. The treatment of water in *Lagoon* (2014) has truly revealed how "in the collective unconscious of a culture, water's material constitution becomes secondary to its symbolic value" (Ball, 2000, p. 9). Okorafor's *Lagoon* and other SF narratives have also ventured into the subtle yet remarkable metaphysical aspects of water, like memory, embodiment and symbolic impact through the concept of hydrographic imaginaries that actually transcend the boundaries of scientific and empirical trajectories in oceanographic studies. Hydrographic imaginaries reveal a field of synesthetic mindscapes where fantasy, speculation and imagination blend with real time and real matter in its intimate densities to highlight the complex relationship

between oil and water. Hydrographic imaginaries can be conceived as an imaginary-graphic re-presentation of the oceanic waterscapes that also comprise the political, cultural and ecological implications of these two elements. This allows the authors and their readers to navigate a speculative dimension where they can engage and interact with the narrative beyond the boundaries of their existing physical reality. Speculation plays an extremely functional role in the process of conceptualizing imaginaries. It provides the necessary space in the narrative for the interplay of imagination and reality in the context of the specific issues that are ecological, political, socio-cultural, economical and physical. A speculative approach charts a unique narrative trajectory that aids the reader's understanding of the multiple issues that are depicted in SF narratives. It allows the reader to subjectively and viscerally identify with complex speculative scenarios that reflect the real time challenges of the world. Speculative traits in contemporary (21<sup>st</sup> century) SF predominantly engage with a wide spectrum of ecological conditions around the world. SF writers create possible dystopian futures that portray toxic landscapes of non-biodegradable industrial debris, chemical infusions, oil spill scenarios leading to the contamination of the ocean surfaces, encroaching garbage-scapes of rising metropolises, the overdose of plastic presence in the global ecological scenario known as the "plastisphere" (Davis, 2015, p. 236), and an extensive array of cases about environmental decline in the Anthropocene. The characteristic attempt of SF narratives to navigate possible future pathways based on the present, reinforces the indispensable functionality of speculation in envisioning futuristic imaginaries. Eco-speculation (ecology + speculation) is a distinct form of speculative endeavour to imagine scenarios of ecology and global environmental conditions through the genre of SF. In general, eco-speculative perspectives can be cultivated through multiple forms of inquiry like visual and performing arts, virtual reality platforms, architecture, design and literary narratives. Specifically, the narratives of sci-fi (SF) are the primary modes through which the concept of eco-speculation has gained popularity. Eco-speculation can be considered as an ecocritical (relating to the discipline of ecocriticism) and speculative inquiry into the understanding of ecological scenarios engaging with the matter of the Earth/materiality, climate change, seasonal shifts and global warming in the near and distant futures. It is also a subset of future studies that revolves around the idea of creating futuristic imaginaries based on contemporary eco-civilizational realities. The extensive use of eco-speculative traits in SF writings underlines the influence of futuristic perspectives and a quintessential inclination towards the definition of future ecologies that are distinctly characterised by environmental catastrophe and disaster scenarios. SF practitioners, thinkers, readers and writers around the world have maintained a continued and recurring engagement with eco-speculation in the 21<sup>st</sup> century. SF and the rising interest in eco-speculative thinking has gained considerable momentum in places in North America, China, countries of the Indian subcontinent, South East Asia, Africa, Europe, Latin America and Russia. As a truly global genre,

SF ventures beyond cultural and geographical boundaries. It also expands beyond the spatio-temporal constraints of reality and national boundaries and functions as a mode of contra-compartmentalization that actually reinforces the contemporary variance, popularity, and ubiquity of eco-speculative thinking in SF. Multiple speculative endeavours are presented through various theoretical and literary forms in SF like Afrofuturism (African futurism), Chicanafuturism (Latin American futurism), Sinofuturism (Chinese futurism), Indofuturism (Indian futurism). The emergence of these various literary and narrative forms of futurism deal with the issues of culture, anthropology, race, gender, materiality and environment. Most importantly, these forms of speculative futurisms have paved the way to a multidimensional speculative window that enables a comprehensive understanding of the future of the planet in terms of its eco-climatological aspects.

### **Afrofuturist SF and Tropical Materialism**

Afrofuturism introduces a new paradigm of non-Western understanding that relates to the historio-cultural and spatio-temporal perspectives of the diasporic African communities in the United States. It reconceptualizes the historical and anthropological aspects of the core Afrosocial and Afro-cultural belief systems in a new (global) world order where identity, race, heredity and regionalism of the African population is constantly in a state of flux. As an Afro-diasporic outlook in terms of literature, aesthetics and knowledge production, Afrofuturism has presented the African chronotope in the era of globalization through an ever-expanding Afro-consciousness that travels beyond the geographical boundaries of the African continent. Afrofuturism initiates a multiform inquiry into the evolving dynamics of materiality, ecology, race, gender, historicity and culture among the Afro-diasporic communities and observes the community's interaction with American modernity, globalization, ecological policies, politics and technology leading to the creation of an interface of ideo-cognitive exchanges that has quintessentially hybrid (Afro-American) characteristics.

In 1994 Mark Dery coined the term "Afrofuturism" (Dery, 1994, p. 180) to emphasize the idea that the Afro-American diasporic population can articulate unique narratives about material imaginaries in which matter plays an agentic role in shaping future ecologies in the tropics and beyond. In her seminal work, *Afrofuturism: The World of Black Sci-Fi and Fantasy Culture* (2013) Ytasha L. Womack elaborates on the concept of Afrofuturism as "an intersection of imagination, technology, culture, and innovation" (Womack, 2013, p. 27) that uses the "elements of science fiction, historical fiction, speculative fiction, fantasy, Afrocentricity, and magic realism with non-Western beliefs" (Womack, 2013, p. 19). According to Womack, in Afrofuturist narratives the conventional strands of SF converge with ancient African totemism to register material,

symbolic, and ethnic signatures of African origin. In this context, it is important to understand that there are countless occurrences or events that are characterised by matter's physical, material and symbolic registers on nature and culture, which commingle together to produce the comprehensive history of humankind and the world. Womack's work reveals that Afrofuturist literary works in the 21st century engage with different avenues in order to cultivate the visualization of material-ecological imaginaries based on the contemporary predominance of matter's undeniable capacity to alter the environmental scenario. With the emergence of issues like climate change, global warming, and the impact of fossil fuel culture on ecology, contemporary African SF has entered a new phase of conceptualising eco-speculative narratives that engage with matter's entanglement in the Anthropocene. Activists, filmographers, artists, writers and individuals from various disciplinary backgrounds expressed their serious concerns regarding the declining conditions of the environment in Africa and the world. Their work portrays the ways in which the Afro-ecological understanding about matter's entanglement is evolving in the Anthropocene and in this process exploring the materiality of the world, particularly in the tropics. Through this perception, Afrofuturism has emerged as an integrated praxis and theory-oriented system that can engage with, address, and provide viable solutions to the concerns of matter's affective influence and material realities. Exemplary Afrofuturist writers like Nnedi Okorafor, Octavia E. Butler, and N.K. Jemisin, have created narratives of tropical ecological imaginaries which are fundamentally based on the idea of ecological remediation; a distinct eco-centric and revolutionary call to heal the earth. The trope of ecological remediation highlighted by the inclusion of external agencies like alien contact scenarios is key to the Afrofuturist SF tradition and its counter-anthropocentric perspectives. Butler's *Parable of the Talents* (1998) set in the dystopian US portrays the planetary collapse of Earth's environment and breakdown of the global institutional machinery. The novel concludes with Earth's remaining population boarding a starship to embark on a journey to establish a human colony in a distant galaxy. N.K. Jemisin's *The Fifth Season* (2015) set in a supercontinent is a classic eco-dystopia characterised by civilizational breakdown, severe climate change, and natural disasters. It is evident that a clear eco-speculative turn in Afrofuturist narratives can be observed in their works which opens up new directions for navigating the climate change crisis and ecological breakdown. Although these narratives focus on eco-precarity, they enable in tandem a synecdochal vision of earth's materiality.

### **Oceanic Material Entanglements and Tropical Eco(Aqua)-Speculation**

Geographical and spatial imaginations in the Anthropocene articulate specific understandings of the complexities germane to the materialities of ecologies—and the attendant problem of human survival. The tropical regions face frequent ecological problems in terms of natural disaster scenarios, climate change and pandemic



situations. With the rise of “oceanic Afrofuturism” (Jue, 2017, p. 175) in the 21st century, Afrofuturist narratives have speculated new pathways to redesign and reconstruct the oceanic realms by incorporating newfound science fictional perspectives and conceptual processes. Nnedi Okorafor’s *Lagoon* (2014) belongs to the category of a select few contemporary Afrofuturist narratives (also known as narratives of “Africanfuturism”)<sup>3</sup> where the stories have begun to address the rising concerns of matter’s affective, and to a large extent, environmentally harmful entanglements in the context of Africa’s tropical ecology.

Donna Haraway, in her analysis of the Anthropocene has engaged with the aspect of “assemblages of organic species and of abiotic actors” (Haraway, 2015, p. 159) that construct historic-cultural and material-symbolic interconnections. Haraway’s focus on material factors and their capacity to shape material, cultural and symbolic perceptions leads to the enquiry, “what are the effects of bio-culturally, biotechnically, biopolitically, historically situated people relative to” (Haraway, 2015, p. 159), and how do they relate to “the effects of other species assemblages and other biotic/abiotic forces?” (Haraway, 2015, p. 159). In this context, Okorafor’s tropical and eco-speculative imaginaries are constructed in Nigeria with the oceanic material entanglement as the prime marine-matter that gives rise to the action. The construction of this imaginary facilitates the critical study of the oceanic dimension involving distinct materialities, identities and embodiments of marine ecology. It sets aside the dominant understanding of tropical and eco-speculative imaginaries from a species exclusive (human-centric) point of view and focuses on an aqua-centric or aqua-speculative approach. In her article, ‘The Aquatic Turn in Afrofuturism’ (2021) Daniela Fargione refers to Okorafor’s *Lagoon* (2014) as a narrative that “embeds multispecies agency to epitomise entangled networks that engage plural life forms beyond the human” (Fargione, 2021, p. 59). The narrative reconfigures “the boundaries of subjectivity” (Fargione, 2021, p. 59) within the petro-hydrographic dimension of the Atlantic. Okorafor situates the concept of eco(aqua)-speculation (ecology + aquatic + speculation) within *Lagoon*’s hydrographic imaginary via three functional aspects that interconnect with and interrelate to the progress of the narrative. The first two aspects deal with the depiction of toxicity in marine ecology and the metamorphosis of the ichthyological entity (swordfish) that plays a crucial role in conceptualizing the performativity of aquatic subjectivities in Okorafor’s narrative. The marine-scape contaminated with oil depicts an image of oceanic pollution that highlights the “slow violence” (Nixon, 2011, p. 11) of the marine and aquatic expanses. This ever-expanding toxic horizon of oil over the oceanic surface is a “hyperobject” (Morton,

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<sup>3</sup> Africanfuturism is focused on a distinct tropical African setting and is written by people of African descent. “It is less concerned with what could have been and is more concerned with what is and can be” (Okorafor, 2019). Okorafor, more recently, has defined her work as Africanfuturism.

2013) that underlines the new and evolving definitions of the toxicological (toxic + ecological) conditions in the Anthropocene. Fargione's critical understanding regarding the "aquatic turn" (Fargione, 2021, p. 56) in *Lagoon* underlines the emergence of aquatic toxicologies in which oceans become a part of the "hyperobjective" (Morton, 2013, p. 30) anomaly of oil spills. The conflict between the fossil-fuel culture, spearheaded by a manufactured matter like oil and the natural marine-scape (water) is directly linked with Okorafor's treatment of the swordfish that assumes the role of an avenger, a symbol of nature's vengeance against the human footprint. Crude oil represents the extractivist and rampant petro-capitalist motives of the human race that has engulfed the ocean while the swordfish becomes the symbol of aquatic resistance. This interspecies conflict between the aquatic animalia and the homo-sapiens also highlights the inter-zonal conflict between water and land. In the third aspect, Okorafor introduces an alien contact scenario within this inter-species and inter-zonal conflict which adds a completely different dimension to the tropical and eco(aqua)-speculative characteristics of the novel. The alien contact scenario; both in land and water commences a distinct science fictional engagement between the (terra-alien-aquatic) identities and subjectivities, followed by their unique interactive and evolutionary trajectories in the narrative. The arrival of aliens in an aquatic space within the jurisdiction of Nigeria, ushers in a very different form of aqua-speculative entanglement with sci-fi traditions. Evidently, Fargione's idea of an aquatic turn in *Lagoon* (2014) also highlights a significant turn in the genre specificities of SF that is more than just a shift in speculative and imaginary conceptualizations from land (terra) to water (aqua); the aquatic turn in the narrative reveals a paradigmatic shift in terms of geo-spatialities, Westerncentric SF identifications, and the idea of colonization. Fargione argues:

What if the aliens arrived from the Ocean instead of space and "invaded" a non-Western city (tropical city), for a change? What if they decided to settle in the ocean abysses of Lagos, Nigeria...? What if the aliens did not want to "rule, colonize, conquer or take" as in the most conventional tradition of the Empire, but simply "want a home?" (Fargione, 2021, p. 59)

Ayodele, the alien ambassador to Nigeria conveys the message, "We come to bring you together and refuel your future" (Okorafor, 2014, p. 93). Contrary to the popular imagination of alien conquest and colonization, the arrival of the aliens in the tropical land of Nigeria is linked with the hope of "change" (Okorafor, 2014, p. 47). The arrival of the aliens signifies the beginning of a grand and total act of ecological remediation; purification of the land, air and water. They act as external agencies who intend to find solutions to the terra-aqua conflict and be a force of utopian transformation. Okorafor portrays two separate interactive experiences of alien contact with humans and the

fishes. In the realm of water, the aliens transform the avenging swordfish into a Leviathan so that it can be the harbinger of change in the ocean. It has the potential to be a defender of the aquatic realm, a protector and saviour that possesses the capacity to preserve the marine ecology and exercise power to destroy any external non-aquatic matter (like oil) that threatens the peace, purity and diversity of the waterworld. During the course of their land-bound operations, the aliens transport Adaora, a marine biologist, Anthony, a Ghanaian rapper, and Agu, a soldier, to the ocean depths in order to transform their minds in a holistic manner which can in turn influence and pacify the macrocosm of Nigerian society and mitigate its conflicts and complexities. Ayodele, the representative of the alien race, shape shifts and mutates into any form. She can be considered a specimen of matter's physio-biological entanglement whose corporeality oscillates between the physical and the ethereal. Her ability to mutate her bio-material composition as an alien underlines the posthuman as well as the new materialist turn in Okorafor's narrative. During her interaction with Adaora, Ayodele says, "I am an alien.... We change with our bodies and we change everything around us" (Okorafor, 2014, p. 47). Ayodele's arrival can be observed as a form of *deus ex machina* that calls for a total revival, cleansing and remediation of Nigerian society and its surrounding marine ecology from the evils of petro-capitalism. From the very beginning, Okorafor situates the alien contact scenario in the oceanic environment to evoke her ancient Afro-cultural links with water that are cultivated by the contemporary Afrofuturist SF. Her portrayal of water in the novel highlights the contiguous existence of an alien species with the tropical "aqueous environment" (Lundberg et al., 2022, p. 16) of the lagoon where the inter-species presence is influenced by the material flows of water in the Niger delta. She uses the overarching Tuareg metaphor of "Aman iman" which means "water is life" (Okorafor, 2014, p. 23) and infuses the spiritual and material Afro-marine belief systems within the science fictional narrative design of the novel. The invocation of the materiality of the water spirit is linked to Ayodele's persona as the humans observe her as a "strange woman creature who silently ran back to the water and dove in like mami wata" (Okorafor, 2014, p. 25). Mami Wata, the African spirit deity of water is contextualised in *Lagoon's* alien contact scenario to create a "material-semiotic characterization of the aliens" (Jue, 2017, p. 175) that connects with the narrative's hydrographic imaginary and the eco(aqua)-speculative construct. Ayodele's presence identifies with the belief that Mami Wata (mother of waters or the water goddess) presides over the realm of waters and delivers ancient wisdom to a confounded world. Although Ayodele's shape shifting capabilities incline toward a fantastic and magical bent in the narrative, the understanding of Ayodele as an alien entity can be directly associated with Csicsery-Ronay's idea of "fictive novum" (Csicsery-Ronay, 2008, p. 5). Ronay describes fictive novum as something, "whose unexpected appearance elicits a wholesale change in the perception of reality" (Csicsery-Ronay, 2008, p. 6). The alien emissary, Ayodele acts as this fictive novum or what Darko Suvin calls the "new thing"

(Csicsery-Ronay, 2008, p. 6) in Okorafor's narrative. In this context, it is important to refer to Keimer and Moore's work on 'The Physics of Quantum Materials' (2017) where they observe the close interconnections between materiality and quantum physics. Materiality is philosophised in quantum physics terms as energy that is in a constant state of flux. According to them, "Topology and entanglement lead to new kinds of quantum order that are sharply distinguished from conventional states by the existence of phase transitions" (Keimer & Moore, 2017, p. 1045). In the novel, Ayodele passes through subjective phase transitions that highlight an amazing posthuman shapeshifting capacity to inhabit "remarkably complex quantum states of matter" (Keimer & Moore, 2017, p. 1045). Nnedi Okorafor dexterously coalesces the ancient Afro-symbolic character of Mami Wata with the science fictional narrative element of fictive novum within the alien character, Ayodele. This unique symbiosis between sci-fi and ancient Afro-symbolism also underlines the symbiotic development of the marine and land ecologies in the narrative. *Lagoon* portrays a co-remediative characteristic of marine and land ecologies. The alien arrival initiates an omni-cleansing agency in the tropical scenario that promises to strike a balance in the scale of manufactured and natural matter.

### **Hydrographic Imaginary and the Anthro-Marine Confrontation**

The narrative development in the novel revolves around the significance of water, not just in terms of its elementality qualities, but specifically in the context of its ecological and speculative performativity on multifarious levels as an agent of constructing tropical hydrographic imaginaries. It is important to recognise water as an assertive force, a matter of nature (that channels the narrative trajectory) as well as a site of action in order to bring out the centrality of its presence in Okorafor's novel. The narrative commences in an aquatic realm (the waters of the Atlantic surrounding the Lagos Bar Beach) where a swordfish is swimming through the waters, set on a collision course with an underwater crude oil pipeline. The role of a swordfish as an agent of vengeance, determined to penetrate the oil pipeline with her spear, constructs an anthro-marine confrontational scenario from the very inception of the narrative. Okorafor creates a powerful and dynamic image of the swordfish. She writes in the prologue:

She slices through the water.... She is on a mission. She is angry. She will succeed and then they will leave for good. They brought the stench of dryness, then they brought the noise and made the world bleed black ooze that left poison rainbows on the water's surface. She often sees these rainbows whenever she leaps over the water to touch the sun. Inhaling them stings and burns her gills. (Okorafor, 2014, p. 17)

This direct confrontation between crude oil, the most important resource in the Anthropocene; and a swordfish, a key ichthyological predator in the waters of the Atlantic in and around Lagos, portrays a conflict between nature and human utilitarianism. Okorafor uses water in all its material properties, physical and metaphysical, as a fundamental substance of nature to study and highlight the element's rapidly changing relationship with humans in the Anthropocene. The author, like the swordfish, attempts to navigate through the complex and ever-expanding human footprint of oil on water, and to pierce through the mass capitalist delusion of resource extraction at the cost of the marine ecosystem. Instances of matter's encroachment have emerged as an alarming reality in the 21<sup>st</sup> century. "Plastisphere" (Davis, 2015, p. 236) is a term used to refer to marine ecosystems that are clogged with human-made plastic environments. In her essay, 'Toxic Progeny: The Plastisphere and Other Queer Futures' (2015) Heather Davis states: "the fact that plastic is radically reshaping the ecological communities of the oceans will have significant impact on the rest of the oceanic ecosystem, and the earth as a whole" (Davis, 2015, p. 235). Plastics, and their breakdown into ubiquitous microscopic particles has been described as a microplastic monster (Glade-Wright, 2019). These emerging concepts of manufactured monstrosities and a plastisphere are actual realities in the Anthropocene and are glaring examples of how there is a gradual evolution of toxic-materiality in the global ecological scenario. Okorafor's novel reflects on these realities of the Anthropocene and uses the SF tradition to create a hydrographic imaginary based on a toxic marinescape in which crude oil poisons the oceanic ecosystem surrounding the Nigerian Delta and further contaminates the waters along the Nigerian coastline. Along with the expanding plastisphere and microplastic contamination of oceans, multiple oil spill scenarios and their continued presence on the water surface are the most harmful examples of toxic marinescapes. Contemporary SF writers and enthusiasts have portrayed their rise in order to emphasize the deteriorating conditions of Earth's water bodies. Hydrographic imaginaries are the most potent modes of addressing the conditions of toxic marinescapes in literary studies specifically in the genre of SF. In his novel, *Ship Breaker* (2010), Paolo Bacigalupi describes a post-petroleum future set in the coastal city of New Orleans. His novel shows how petroleum tankers have become obsolete and function as material reminders of a lost time when oil was the most valued material resource in the world. The water bodies and sea shores in Bacigalupi's narrative are covered in crude oil, the coastlines and the sandy seashores are murky black due to the oily content of the water. The toxicity in Bacigalupi's novel is very evident as the marine ecosystem has fallen apart and the once blue waters of the ocean looks pitch black accompanied by a sea breeze that brings a strong, pungent and nostril burning smell of crude oil. Okorafor's novel relates a similar kind of hydrographic imaginary. However, unlike Bacigalupi's narrative that follows the grievances and difficulties of humans as a foraging population in a post-petroleum dystopian future, Okorafor's

narrative offers a more-than-human perspective that immerses itself in the underwater world of marine animals and studies their subjective and confrontational experiences with the toxic seascapes of the Atlantic. Okorafor's narrative clearly attempts to emphasize the hydrographic imaginary in the narrative by a counter-heterogeneous approach that forcefully blurs the division between oil and water. In this tropical materiality, the author destabilizes the commonly held notion that oil and water occupy watertight silos in the physical world and demonstrates how oil, as a major driver of anthropogenic change, has altered the properties of water, a cardinal element of nature.

### **Conclusion: An Eco-Speculative Remediation**

The combination of petrofictional characteristics, via the exploration of a marine ichthyological subjectivity and the alien contact scenario, comprehensively structure the hydrographic and eco-speculative visualization of tropical materiality in Nnedi Okorafor's *Lagoon* (2014). Instead of an episodic and sequential progress, these aspects are intertwined to focus on the non-linear and multi-directional progress of the narrative. It is interesting to observe the symbolic and trans-material relevance of crude oil, swordfish and aliens (shape shifters) in the context of their causal interactions within the vast and unending reservoir of water. Okorafor assigns specific roles and bestows agentic powers to the characters in her novel in order to articulate her opinions about crude oil extraction from the seabed and warn the reader about how this unrestrained extraction can lead to the unprecedented annihilation of marine ecosystems. Crude oil, a matter extracted by humans, is symbolically set in direct collision with the swordfish, the largest predator in the waters of the Atlantic surrounding the Lagos Bar Beach in Nigeria. She introduces a fascinating human-alien imaginary in which the human and non-human are participants in a field of co-being and co-becoming. Ayodele, the alien ambassador to Earth conveys the message of remediation and ecological cleansing. Contrary to the popular imagination of alien conquest and colonization, the arrival of the aliens in Nigeria is linked with the hope of change. The arrival of the aliens signifies the beginning of a grand and total act of ecological remediation; purification of the land, air and water. As unique alien mediators, they endeavour to resolve the terra-aqua conflict and function as a force of utopian transformation in the novel. Okorafor's narrative charts a unique trajectory of sci-fi storytelling where traditional and ancient Afro-cultural symbols (which are always material, embodied and agentic) link with futurism in order to heal the chaotic present and assert a hope in creating a future of peace and prosperity.

The significance of matter and its overarching influence in *Lagoon* are also closely related to the topographical or cartographical mapping of the narrative's setting. This establishes the presence of manufactured matter as a topographical determinant that

plays an integral role in contextualizing the idea of tropical materialism in Okorafor's novel. Furthermore, Okorafor's narrative actually subverts the dichotomous relationship between matter (oil and water) in order to highlight the "morphology of change" (Dolphijn & Tuin, 2012, p. 93) through the presentation of a tropical eco-speculative imaginary. However, it is not sufficient to analyse this narrative's eco-speculative performance purely on the basis of matter's entanglement in the tropics. For here, Okorafor portrays the narrative through the lens of a material world marked by hyperobjects. The eco-speculative and hydrographic imaginaries of this novel facilitate the overarching understanding of the 'dark ecology' of the material 'mesh' in the tropical marinescapes of the Anthropocene as impinging the entire Earthly sphere. Narratives like *Lagoon*, partake of a new innovative trend in planetary narratives that "has increasingly allowed nonhuman things to shape narrative" (Trexler, 2015, p. 26).

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## Acknowledgements

We extend our gratitude to the anonymous reviewers who gave of their time and expertise. We also thank them for their insightful comments that helped this paper to become more compact and thorough in its argument.

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