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Embodied Climate Knowledge in African Cli-Fi: Alistair Mackay's *It Doesn't Have to Be This Way* (2022) and Nnedi Okorafor's *Noor* (2021)

Introduction

This article argues that embodied knowledge depicted in climate fiction novels by African authors offers insights into marginalized subjectivities; and that these perspectives can reduce epistemic oppression in climate change knowledge.[1] Two novels set in a future time characterized by climate collapse are analyzed: *It Doesn't Have To Be This Way* (2022) by South African author Alistair Mackay and *Noor* (2021) by American-Nigerian author Nnedi Okorafor. The novels foreground queer perspectives[2] and experiences with disability and discrimination, challenging hegemonic epistemology in climate change knowledge. An overview of the genre is provided to explain the selection of the two novels; followed by a conceptual discussion of epistemic oppression in climate change research and how embodied knowledge in fiction can counter it. Thereafter, econarratology is briefly introduced as a methodological approach. In the novels' temporal and spatial contexts of climate collapse, the characters reveal powerfully embodied accounts of subjectivity, offering understudied hermeneutical resources in African contexts.

An Overview of African Cli-Fi

There are a few ways to approach (rather than define) climate change fiction—or as it is popularly known, "cli-fi," a term coined by Daniel Bloom in 2007 (Milner and Burgman 1). Simply put, cli-fi is concerned with anthropogenic climate change. A more complicated disclaimer is that, by nature, genre is fluid (Johns-Putra, "Climate change in literature"). Some insist that cli-fi is a subgenre of science fiction, given the overlap between cli-fi texts and sci-fi conventions which often demonstrates a "structure of feeling" (the term for interaction between the individual and the social) that centers science and technology (Milner and Burgman). It might be more accurate to identify climate change as a *topic* found in many genres, not only in sci-fi but also in fiction, and one not easily identifiable with a given genre (Johns-Putra, "Climate change in literature" 267). Given this genre-uncertainty, I use the term 'cli-fi' as a placeholder for fiction where climate change is a central setting or motif.

As an imaginative device, climate change in fiction was initially dominated by hyperrealist texts featuring climate scientists arguing with each other or policymakers, or protagonists struggling with direct climate change impacts (usually floods, but also heat, desertification, food and water shortages, migration, or general social breakdown); however, the last decade has seen an explosion of climate imaginaries comprising varied plots, characters, settings, and themes (Death 244). These include the setting of environmental catastrophe as "a sudden irruption of the nonhuman into the space of the quotidian" (Caracciolo 60) and plots that grapple with the future. This focus on posterity is often figured by "dynamics of parental care ethics" (Johns-Putra, *Climate Change and the Contemporary Novel* 53), in terms of either environmental stewardship for generations to come or intergenerational conflicts. Despite this increasing variety, "African authors, settings, and characters have been largely absent from most research (and popular discussion) about the rise of cli-fi" (Death 245).

According to Derek Workman, the editor of Botswanan digital magazine *Kalahari Review,* book-length and print publications of cli-fi written and set on the continent remain relatively few, existing mainly online and in short form (Kayawe). There is however a long history of novels by African authors that both represent and resist the manifold environmental degradations of colonialism and extractive capitalism in Africa, as shown by Catejan Iheka's investigation of literature that re-engages with what it means to be human, attuned to "a vision of a humanity already aware of its imbrication with the nonhuman world,

a human community taking steps to respect and respond to the Other, who is not always human" (20).

This article analyzes *IDHTBTW* and *Noor*, set in South Africa and Nigeria respectively, because while both novels feature climate catastrophe as a central motif, the authors' formal narratological choices offer an opportunity to interrogate human subjectivity that Iheka calls for. Through their characters' bodies as agents of knowledge production, the authors not only amplify queer and disabled perspectives but also call attention to existing epistemic oppression in climate change knowledge.

Additionally, comparative climate analyses of South Africa and Nigeria are rare, despite numerous comparative political economy studies. This lacuna is significant, given expectations that the two economic powerhouses will lead the continent in terms of global climate action. Both countries have extractive-based economies; contribute to and are made vulnerable by anthropogenic climate change; and despite their continental and international economic might, are vulnerable to the power imbalances in Africa-focused climate-related research. These imbalances continue to reflect an overarching epistemic injustice in climate change research; despite the global climate knowledge infrastructure "constantly opening itself, re-examining every datum and data set, reanalysing its data, adding to its metadata" (Edwards xviii). This article thus contributes to these epistemic issues by offering an empirical contribution to climate change research that centers a comparative study of African case studies, using literature to expand what counts as climate knowledge.

Epistemic Injustice in Climate Change Research, Cli-Fi and Embodiment

Eyob Gebremariam tallies well the causes and manifestations of power imbalances in Africa-focused climate-related research:

> Structural and institutional inequalities in the allocation of resources, the extractive research partnerships, the dominance and imposition of research agenda, the use of academic research to pursue the economic and political interests of the global-north, the perpetuation of the unfair and exploitative relations between the global-north and Africa.

Scholars have identified the key role of funding in directing research and thereby informing responses to climate change. Only 3.8% of global funding for climate-related research was allocated to Africa-

focused themes; and 78% of this funding went to research institutions based in western Europe and the United States (Intergovernmental Panel on Climate Change; Overland et al. 710). In addition to funding disparities, scholars have identified other variations of epistemic injustice. Elizabeth Allison identifies what Miranda Fricker has called "hermeneutic injustice" in climate change research whenever the dominant research paradigm, for example climate science, lacks an interpretive framework for studying and analyzing subjective responses to climate change (495). Fricker's popularly cited work on epistemic injustice proposes two forms: testimonial injustice (when prejudice causes a hearer to give a deflated level of credibility to a speaker's word) and hermeneutic injustice (gaps in collective interpretive frameworks).

Kristie Dotson's work on epistemic oppression is useful for situating Fricker's formulations as examples of pervasive epistemic oppression, or "epistemic exclusions afforded positions and communities that produce deficiencies in social knowledge" (24). Additionally, Dotson identifies an important third form of epistemic injustice: contributory injustice, caused by "wilful hermeneutical ignorance" that utilizes (and thus maintains) structurally prejudiced hermeneutical resources (31). This concept is valuable for thinking about climate change meaning-making because it counters Fricker's assumption that there is only one set of collective hermeneutical resources that humans are all equally dependent on and instead advocates for the "alternative epistemologies, countermythologies, and hidden transcripts that exist in hermeneutically marginalized communities *among themselves*" (Dotson 31, emphases added).

Contributory injustice simultaneously concerns the role that power plays in hindering hermeneutical resources and recognizes that "the power relations that produce hermeneutically marginalized populations do not also work to suppress, in all cases, knowledge of one's experiences of oppression and marginalization within those marginalized populations" (ibid). In other words, *multiple* sets of hermeneutical resources are always available; but the situated ignorance that stems from one's social position and/or epistemic location (i.e., only recognizing knowledge derived from climate science because one is a climate scientist) thwarts recognition of this fact.

Addressing contributory injustice thus requires an awareness of differing sets of hermeneutical resources and "world-travelling" to "experience what others experience" (Ortega 69). Fiction is especially well-suited to making this vicarious experience available since narrative comprehension relies on the same brain machinery used for real-world action and perception, enabling readers to internally perform events and actions referenced by texts as "embodied simulations"

(Gallese 23). Moreover, the diverse supply of epistemic counterpoints (ideas that counteract hegemonic concepts in the social imagination) has been shown to provide epistemic correctives by developing both open-mindedness and nondominant hermeneutical resources (Cunliffe 169).

Where better to think about new sets of hermeneutical resources about African contexts than through the bodies experiencing climate impacts, an often-neglected locus? Two caveats before approaching the body as what Michael Taussig describes as "the ultimate territory": focusing on bodies does not suggest neglecting environmental degradation, pollution, biodiversity loss, or the immediate violence of extreme weather events as a site of study for climate change. Second, attending to "embodied" knowledge risks overemphasizing sensory bodily knowledge at the expense of subjectivity. Instead, my investigation aims to deepen an understanding of queer and disabled subject positions through the novels' literary environments of climate collapse.

Many routes to embodiment theory exist, from anthropologist Thomas Csordas' foundational essay to feminist theory's attention to the body's epistemological value (Butler *Undoing Gender, Bodies That Matter;* Haraway *Simians, Cyborgs, and Women*). As Judith Lock and Margaret Farquhar explain, bodies can be "comprehended as assemblages of practices, discourses, images, institutional arrangements, and specific places and projects" (1). In this vein and following Katherine McKittrick's work on embodied human geographies, I consider how temporal and spatial conditions of climate change embody climate knowledges. These conditions situate bodies in relation to environment, offering access to sets of hermeneutical resources that complicate our understandings of lived experiences. Writing specifically about Black embodied knowledge, McKittrick laments how the Black body often signifies the "what, when, where, why, and how" of racial violence; and questions if the Black body as an analytic, can be imagined outside violation (49).

Similarly, I want to visualize African bodies *outside* of the default "most vulnerable" narrative, a now hegemonic hermeneutic resource. We *know* that Africa is disproportionately the most vulnerable region in the world, despite having contributed negligibly to climate change (2–3% of global emissions) (UNEP). This knowledge has come to represent a mere "hardening of the categories" (Wapner 2)—the reification of an understanding so well known that it has retreated into the background, narrowing the range of possibility for thought and action. Moreover, while "embodiment" has traditionally been used in literary studies in reference to the sense of an abstract notion becoming

actualized (Caracciolo et al. 2); climate change unsettles both physical and abstract projections about what *being* a body in the context of climate impacts means. Climate change undermines what Anthony Giddens calls "ontological security" or, "the confidence that most human beings have in the continuity of their self-identity and in the constancy of the surrounding social and material environments of action" (92).

This uncertainty thus requires embracing Eduardo Viveiros de Castro's idea of a world "comprising a multiplicity of subject positions" (471) if one is to meaningfully grapple with climate change; mindful of Iheka's vision for an environmental-aware humanity, respectful and responsive to both the more-than-human and what Sylvia Wynter terms the "archipelago of Human Otherness" (321). To begin, it would help for hermeneutic resources in Africa, the tools used to make sense of climate change, to embody more than the "narrow, ethnocentric, patriarchal, and white version of the human" (Vint 11) that "overrepresents itself as if it were the human itself" (Wynter 261). The following section briefly introduces how econarratology can facilitate this embrace of diverse African subject positions.

Analyzing Embodied Subjectivity Using Econarratology

"Econarratology" pairs ecocriticism's interest in literary representations of physical environment with narratology's formal sensitivity to structures and devices used to communicate those representations (James 23). This approach to how the mechanics of narrative (characterization, time and space organizing etc.) convey environmental understanding offers new methodological possibilities for facing the "planetary challenges of the Anthropocene epoch" (James and Morrel 27). According to Erin James, storyworlds "provide readers access to highly subjective understandings of what it is like to live in, conceptualize, and experience a given space and time" (xii). And while "storyworld" has come to be shorthand for narrative settings, David Herman offers a more expansive definition: "storyworlds are mental models of who did what to and with whom, when, where, why, and in what fashion in the world to which (temporarily) recipients relocate . . . as they work to comprehend a narrative" (5).

Marco Caracciolo however cautions that *representing* climate change through plot and character differs from *negotiating* the meaning of climate change through narrative (11). Importantly, this observation reminds that form is more than "a shell to be discarded to reveal the "content" of narrative" since it is only through the intervention of forms—understood broadly to include everything from the macro-

level (i.e., genre) to the micro-level (i.e., spatial description)—that narrative can meaningfully engage and negotiate the meaning of climate change (7). Using temporality and spatiality, the foundational narrative parameters, as a starting point, the next sections discuss different intersections of embodied subjectivity in the two novels.

Discussion: Embodied Climate Knowledge in *IDHTBTW*

Mackay's debut novel set in Cape Town layers two-time spans, near and far future. The novel begins in the far-future with Milo, a young child growing up on fictional Kapelitsha Island (uncannily like real-life Khayelitsha, Cape Town's largest informal settlement). Kapelitsha is nearly inhospitable: oceans have risen, water has run out and unbearable heat governs the sprawling slum outside "The Wall." On the other side of this divide, privileged citizens have either retreated to "The Citadel," a heavily guarded climate-controlled dome city on Signal Hill (a real-life landmark) or immigrated to "the New Temperate Zones", countries like Greenland, Alaska, Norway. Mackay's fictional depiction is not far removed from prevailing urban realities: conditions in Khayelitsha township are dire for many and the area is highly susceptible to flooding and shack fires.

After introducing readers to Milo on the island, the narrative rewinds to approximately 15 years into the future and is organized as a countdown to "The Change", an unnamed apocalyptic event. This countdown is broken into sections narrating the different stories of three queer friends as they navigate an increasingly unstable world before the impending climate collapse. Interspersed throughout are flashforwards to Milo on the island. This fractured temporal context and the spatial divide between Kapelitsha and the Citadel hints at a "dyadic world": "two spatial domains governed by profoundly different rules and standards in terms of what is physically possible, lawful, morally acceptable, what can be known and what cannot" (Caracciolo 75).

Fifteen years before "The Change": friends Luthando and Malcolm meet Viwe at a "Reforestation festival," which Luthando describes as "hippie nonsense, typical white people stuff" (17)—incredulous that people pay to do manual labor. Heterosexual-identifying Viwe first struggles with his attraction to Luthando's "boisterous finger-clicking sassiness," reminding him of how he was bullied as a sensitive adolescent at an all-boys school (39). Nonetheless, after the festival he breaks up with his girlfriend, Noxolo, a first step in embracing his homosexuality. Here, Mackay introduces readers to the profound racializing of environmentalism in South Africa[3] and the challenges of disclosing

sexual orientation, laying the foundation for "an understanding of the human body as a site of intersection between social, political, and environmental dynamics" (Mendez).

Twelve years before "The Change": Luthando and Viwe have been happily dating for two years. Luthando begins a guerrilla tree-planting campaign on public land "to green the city" (52). Despite Viwe's mounting climate anxiety,[4] Luthando's climate activism escalates and soon he organizes a mass protest, a series of virtual reality campaigns designed with Malcolm and finally, a fateful attack on Medupi power station, "one of the world's largest and dirtiest coal-fired power plants" (101). Luthando's climate activism is presented as a dangerous but enlivening social struggle to communicate the impending climate collapse while Malcolm's passion for coding complicates perspectives on meaningful work. Here, Mackay's inclusion of office scenes are an early indicator of capitalist critique: exploring perceptions that people are only seen as valuable if producing or consuming; and the morally grey area of doing fulfilling work while simultaneously questioning whether that work is being used for the right purposes. These protest and workplace scenes are epistemological valuable for reminding that African workers are more than work and activists more than their struggles; that both work and activism encompass much that is believed to be absent from it.

Through Luthando's activism and relationship with Viwe, Mackay presents readers with two nondominant hermeneutic resources: a stable (albeit homonormative[5]) queer partnership between two young African men; and a passionate Black environmentalist. These atypical subjectivities are however constructed in a context familiar to most South Africans, juxtaposing the unfamiliar with the familiar: public protest and violent police response to protestors. Furthermore, the activists' subsequent attack on an electricity power station built by Eskom, South Africa's embattled public electricity utility, is especially timely given the worsening power supply challenges in the country.

Nine years before "the Change": the optimism of Luthando's environmentalism has been negated by his imprisonment for terrorism. This event marks the start of a negative enumeration of both the material and relational conditions of the characters, an "emptying out" (Caracciolo 73) of their shared storyworld that mirrors the dying ecology around them. Weather conditions have also deteriorated, and wildfires result in emergency evacuations. Prisoners are unexpectedly released, but Luthando is not the same: uncommunicative and depressed, his mental state worsens when his criminal record prevents him and Viwe from entering The Citadel. They are forced to move in with Lindiwe, Viwe's religious mother.

As fires rage and the oceans rise ominously, Lindiwe tries to persuade them that "the bible is quite clear" and they are both "sick" asking: "do you want to be caught sleeping with men when judgement day comes?" (128). Lindiwe's harassment leads Luthando to further retreat while Viwe, already susceptible to anxiety and possibly schizophrenia, struggles with declining mental health. As he fixates on the Christian fanaticism with which he grew up, he begins to reject how "the scientists on TV talk about The Change in detached language" and believe his mother: "This is all straight out of Revelations. Scientific language only obscures the truth. It downplays the cause of destruction, which is the sinfulness of man" (135). Lindiwe's condemnation of his sexuality accompanies the worsening climate conditions; culminating in a dramatic uptick of guilt for Viwe when she reveals that she has cancer. Wildfire smoke outside mirrors these conversations in Viwe's mind as "the darkness gathers," "wraps around his throat," and "pours into his eyes" convincing him that "dark forces are fighting for his soul" (129).

The fires burn out after three days, but "burnt decomposing corpses litter the hiking trails for weeks" (130), an apt prediction of what is to become of Luthando and Viwe's relationship. Upon their return home, Viwe hosts a homecoming party to celebrate Luthando's release from prison but the "small accumulated harbingers of scarcity" like frostless cake that Malcolm brings lead him to obsess about food insecurity after the fires. Luthando is similarly taciturn: Malcolm hugs him only to wonder "what do you call a hug without pressure?" (132). All three are called to attention by doomsday marchers towing lewd effigies of men in dresses and chanting "Repent!" and "It's un-African!" before throwing a brick painted with the word "SODOMITES" through their window (133), shattering both the celebration and their relationships.

Choking on his grief at the prospect of losing everything from his mother to "any sense of a future" (139), Viwe begins wandering the streets of Cape Town. Before long, he is living amongst the homeless in the Company Gardens, hearing voices and talking to himself. Viwe ends their relationship, insisting that gay men "don't get to be loved" despite Luthando's assurance that "gays are the best thing to happen to this planet" for reducing overpopulation and saving the world from "the toxic masculinity that got us in this mess" (156). In one of the novel's most brutal depictions of this toxicity, Viwe returns to his ex-girlfriend Noxolo believing that "only she can drive out the darkness" (149), resulting in a twisted instance of self-corrective rape.

Mackay brings into conversation homosexuality with religion (Lindiwe's fanaticism), mental health (Luthando and Viwe) and activism (doomsday marchers) but it is through Lindiwe's cancer that the

corporeality of their shared situation manifests most clearly. Lindiwe's cancer acts as a literary stand-in for the excesses blamed for climate change, a metaphor for capitalism with numerous references like "infinite growth is the ideology of the cancer cell" (188). Her disease and the declining mental wellbeing of Luthando and Viwe reveal the body as a barometer reflecting interpersonal relations, the city's social fabric, and environmental conditions. At Lindiwe's funeral, Viwe submits to an exorcism, encircled by church elders shouting at demons to leave like "a spiritual squeezing of a boil" (153). This event spurs Viwe into religious fanaticism, which radically reshapes the social landscape of the city.

Living full-time in the park, Viwe helps establish a spiritual guidance group for navigating the climate collapse—it includes a re-education program that punishes adultery by death and homosexuality by corrective rape. "The Shepherds" eschew the popular biotech implants used to luxuriate in virtual reality and ignore the urban realities of the change. They also look after new "Believers" recovering from "disconnection sickness" after removing their implants while their bodies jerk around on the floor as their brains try to learn "how to construct meaning from only five senses" (44). Viwe interprets the arrival of a new Believer, Greg, as "a test from god to see if he can handle temptation because the man is so beautiful" (167). He begins worshipping Greg as "everything a man is meant to be – strong confident straight" despite Greg's growing cruelty as a Shepherd, often enlisting Viwe to watch as he performs corrective rape on "sinners" to "help" Viwe's own re-education (167). Eventually, to prove to Greg that he is in fact reborn, Viwe leads the Shepherds to a gay man, Luthando. Once more, Mackay mediates queer subjectivity through embodiment, this time via desire. Viwe's repression of his desire leads to reprehensible acts, representing a dystopian outcome of suppressing sexuality: while physically healthy, his mental and social wellbeing is severely depleted. This depletion calls attention to the relationship between mental health and sexuality, through the interplay of climate anxiety and queer identity.

Research on climate change and its relationship to mental health is growing as more people directly experience climate change via both acute events, like wildfires, and slower environmental changes like sea level rise. Additionally, many people are impacted by indirect exposure pathways like observing or thinking about climate change (Ma et al). Research into the relationship between climate change and mental health in Africa is, however, very limited and consequently not attuned to the different combinations of suffering (i.e., negative intersecting

impacts of religion and sexual discrimination) that Viwe's character represents.

Two years before "The Change": Malcolm is ensconced in the luxury and safety of The Citadel, but he has no social life; all his time is spent in virtual reality or at work where he develops software for bio-tech implant companies. Despite living in the utopian Citadel, Malcolm is disconnected from other people and unable to forge relationships at work. His only stirring human interactions take place on the automated public transport system. Once, he turns to a man seated next to him—"an old habit that kicks in sometime, the urge to smile and say goodbye"—only to realize that the man, lost in virtual reality, "is stabbing himself repeatedly in the thigh with a short blunt knife" (201). Malcolm is unable to stop him from self-harming, or to rouse a response from other passengers.

Despite his success with online dating apps, his romantic life is similarly stilted: turning to sex for human connection, regretting it as soon as he orgasms. This monotony is broken when "a Ghost" (messengers who move things through the Wall) delivers a stash of old undelivered mail from Luthando. The letters reveal that Milo, the child on Kapelitsha island, is Viwe and Noxolo's son, and that Luthando is helping to raise him. Through this epistolary exchange, Malcolm's perspectives on his life in the Citadel, his work, even his already-paid for migration to New Washington, Antarctica where "mild weather is marketed as 'the new fairest Cape'" (183) begins to shift. During an attack on The Wall, a small hole penetrates the glass and Malcolm braves the security officers so he can feel real air from outside. Faced with the scalding air, he is reminded of sitting in his mother's parked car as a child, where oozing sweat made him feel "like he was dissolving, the boundaries falling away between himself and the world outside" (240). This physical encounter with reality is a fateful one: soon Malcolm leaves the Citadel forever and once on the other side of the Wall, a Shepherd permanently removes his implants.

Interspersed throughout the sections about Luthando, Viwe, and Malcolm's, Mackay details Milo's anxious wait for his parents to return from searching for food and water. A child alone, Milo is dangerously thirsty, and hungry in a dire climatic environment, worrying about his parents. His distress flips the script of concern for future generations being represented by parental concerns; instead of a parent worrying about a child, it is Milo stressing about the wellbeing of his missing parents while trying to survive the deadly heat. Whereas Luthando, Viwe, and Malcolm's struggles are psychologically and socially complicated, their experiences as queer men intersecting with the impending climate apocalypse in nuanced ways, Milo's struggle serves as a

visceral reminder of an essentialist struggle for survival in extreme weather conditions. While waiting, Milo encounters a "Believer" who has recently had his implants removed, his body twitching uncontrollably and his eyes vacant. Milo cares for him throughout the novel, a pertinent reminder that in many African countries, the care of ill, disabled, or elderly relatives is usually regarded as the responsibility of family members, often falling not only to women but also children and youth.[6] This invokes a consideration of children's care work in Africa, calling attention to climate change as an intergenerational concern.

Through this dynamic between Milo and the Believer, which the reader can assume to be newly arrived Malcolm, Mackay presents his most important contribution to climate knowledge: an alternative to the "anthropocentric, gendered, and heteronormative" idea that "environmental responsibility involves preserving the world for posterity" (Caracciolo 12) basing emotional investment in the future on the obligation to reproduce and care for one's own children. In addition to presenting an ironically hybrid family—for example, Luthando, who Viwe first derided for being "so obviously gay" (39), has stepped in to raise Viwe's son, "trying to be a good male role model" (194)—Mackay also offers a powerful example of "queer time" (Seymour 10). By moving between the "dyadic world" of a spatially and materially divided future Cape Town, split between the haves (in the Citadel) and the have-nots (on Kapelitsha island), *IDHTBTW* complicates hegemonic accounts of futurity, through the characters' embodied boundary-crossing as they navigate both queer subjectivity and climate collapse.

Discussion: Embodied Climate Knowledge in *Noor*

Noor is also set in the future, but unlike *IDHTBTW*, the plot unfolds over one fast-paced week, primarily in northern Nigeria. The country has been totally transformed by an international megacorporation, the unsubtly named "Ultimate Corp." This is a future where public and private, business and government, synthetic and organic are inextricably intertwined. The novel begins in the desert, with protagonist AO (given name Anwuli Okwudili, legally changed to "Autobionic Organism") in awe at the sight of a "Noor," Ultimate Corps' famous wind turbines as it harvests energy from "The Red Eye." This enormous never-ending sandstorm, or "*aejej*", has been swirling over Northern Nigeria for nearly thirty years as the massive turbines generate "energy for the evil corporation from the whipping sands" of the "natural" disaster (3). Temporary protection from the storm is provided by an electromagnet shield called an anti-*aejej*; and hidden within the Red Eye lives a mythical city protected by a gigantic anti-

aejej, known as "The Hour Glass," a place where "there is law and order but there is no Ultimate Corp or Nigerian government" (123). Like Mackay, Okorafor offers a dyadic world, governed by different regimes on either side of the Red Eye. Both worlds are equally but differently dependent on "one of the world's worst environmental disasters" (3) for their continued existence. The Red Eye is thus simultaneously representative of Ultimate Corp's extractive exploitation and a boundary marker separating the world that AO knows and that of a renegade community of "desolation dwellers" that has survived "fires, droughts, floods, bloody massacres and global pandemics" (5).

As plot devices, Okorafor draws both the *aejej* and the Noor from African contexts: *aejej* is the name of a whirlwind in southern Morocco and Ouarzazate Solar Power Station (known as Noor Power Station, also in Morocco), is the world's biggest solar plant and inspired the name and many of the novel's ideas (Okorafor, Twitter). These are examples of "Africanfuturism", a literary, aesthetic and cultural movement that Okorafor ("Africanfuturism defined") defines as "directly rooted in African culture, history, mythology, and point-of-view" without privileging or centering the West ("Africanfuturism defined"). Unlike Africanfuturism, the more popularly-known "Afrofuturism" addresses "more generally, African–American signification that appropriates images of technology and a prosthetically enhanced future" (Dery 180). When considering African cli-fi as climate knowledge, the fact that Okorafor distances herself from Afrofuturism is important: "I was being called this word [an Afrofuturist] whether I agreed or not (no matter how much I publicly resisted it) and because most definitions were off, my work was therefore being read wrongly" ("Africanfuturism defined").

As with the genre-quicksand of trying to define cli-fi as separate from sci-fi; some people see Africanfuturism as a subset of Afrofuturism but by staking claim to and defining Africanfuturism, Okorafor has offered "an anchor point, a clearer signpost" for the efforts of many African authors "when they write certain kinds of science fiction – not just *from* Africa, or *set in* Africa, but *about* Africa" (Talabi). In the context of an investigation into epistemic injustice in knowledge about climate change in Africa, Okorafor's awareness that she is being misread and her intentionality to correct this is significant; her insistence on identifying Africanfuturism as a different hermeneutical resource is important for also revealing how this difference had been wilfully ignored until she insisted on it. This provides a powerful example of foregrounding African perspectives in knowledge production.

Narratively, *Noor's* primary perspective is provided by AO, whose body is as powerful a force as the Red Eye. Born with "a gnarled

stump" where her left arm should have been, "withered and mis-
shaped" legs and "intestinal malrotation", she was given a "prosthetic
arm and intestines made of genetically grown and enhanced spider
silk" and "leg exoskeletons" that allowed her to walk (19). When she
was fourteen however, she was involved in a rare automated-vehicle
accident, the only one of its kind, and was forced to replace both legs
with fully automated transplants. Key to the plot is the chilling discov-
ery of the real cause behind AO's disabilities; but it is her body modifi-
cations that move it along: "If you could, wouldn't you replace your
damaged legs with cybernetic ones? Why hold onto malfunctioning or
poorly formed flesh and bone only because "we were born with it?"
(15). Mirroring her profession as a mechanic, AO has been working on
her body as long as she has legally been allowed to do so. Her latest
augmentations are neural implants to manage memory issues after the
car accident, attributed to "feedback from artificial neural connections"
(13) in her cybernetic limbs mingling with the natural ones in her brain
and the digital connections all around her.

While shopping for groceries at her local market, a place where she
was certain that she was safe and known to her neighbors, AO "tasted
the environment" (11) sensing "something in the air was hot and
charged" (13) but assumed it to be her neural implants acting up. A
group of men begin harassing her, repeatedly asking: "What kind of
woman are you?" (16), a question repeated throughout the novel as
other characters question not only her humanity, but her gender too.
When AO refuses to answer them, one of the men slaps her hard
enough for her world to "burst into silver" activating "a warm itchy
pain, like something had ruptured" (17). A violent attack ensues, and
empowered by her augmentations AO responds in self-defense, killing
five men.

This event is narrated in tandem with AO's explanation of why and
how she came to have the body she does, and throughout the novel,
the melding of artificial and natural is both the source of her pride, a
spirited defiance of her difficult childhood—"I am part machine. I am
proud to be part machine. I was born twisted and strange by their
standards. And after so much recovery, I was somehow amazing"
(19)—as well as the site of extreme discrimination:

> "To many Nigerians, I was trouble... An abomination.
> Priests, reverends, bishops, pastors and imams, holy
> men all over West Africa said so. To replace an organ or
> two with cybernetic, 3D printed, non-human parts was
> fine. People needed pacemakers, new limbs, skin grafts
> etc. but if you were one of those people who *seemed* to be

'*more* machine than human' for whatever reason, one of
those who 'refused to obey the laws of nature and die,'
you were a demon." (10)

Just before the attack takes place, AO notices a news stream reporting
that "four Fulani herdsman armed to the teeth stormed [a] small
Nigerian village on the edge of the Sahel desert, pillaging and raping
as they went" (11). After the attack, AO flees the scene, petrified that
she will be vilified for killing her attackers because of the widespread
discrimination against people with augmentations. Thus begins her
week on the run, away from the market where nobody helped her dur-
ing the attack, away from the society that she trusted accepted her "as
well as they could", until she stepped out of line and "out of their
knowledge" (20). While on the run, she meets a Fulani herdsman who
also goes by his initials, DNA (a cute parallel nickname to AO) and his
cows, GPS (named for his impeccable sense of direction) and Carpe
Diem (who always wakes up first). DNA is also on the run—he is one
of the Fulani herdsmen who allegedly attacked the village, an event
AO saw reported in the market on the day of her own fateful attack.
DNA is the sole survivor of his attack. Together, they brave misinfor-
mation campaigns, murderous drones, and continued state-sanctioned
attacks by Ultimate Corp.

Okorafor calls attention to historical tensions between Fulani herds-
men in the North and other groups in Nigeria. She also offers an opti-
mistic view of climate migration. The renegade Hour Glass
community living peacefully inside the Red Eye have fashioned "a ref-
ugee city in the shadows" (130) of the disaster. This echoes Gaia Vince's
research on migration as historically key to the success of the human
species and her call for facilitated mass migration as a humane
approach to managing the massive dislocation caused by climate
change.

In this tightly plotted narrative, it is however through the figure of
AO's bionic body that Okorafor offers a powerful account of how cli-
mate change will affect everyone, but some more than others. In craft-
ing AO's character, Okorafor drew on her own experiences with
disability: in an online interview, she discusses how spinal surgery for
severe scoliosis left her paralyzed and mentions the growing trend of
people who identify as cyborgs in the disability advocacy community.
She states: "AO is born with all of these issues, and she's born within a
culture that judges those things. That part is real" (Colyard).

An improved understanding of the structural and historical condi-
tions of how people with disabilities are marginalized has led to theo-
retical shifts from the body (impairment) to society (disablement)

(Goodley and Runswick-Cole). These changes in disability studies demonstrate how the body may serve as a site, target, and vehicle for both ideology and creative expression (Millett-Gallant 7). While the currently prominent social model of disability is a welcome progression from "the impairment-obsessed focus of dominant disability discourses associated with medicalization, psychologization and rehabilitation," it is important to also consider the ways in which "nonnormative bodies provide opportunities for emancipation" (Goodley and Runswick-Cole 3). This is especially key in the context of climate change research where the disability community has been largely overlooked by efforts to study and remedy environmental and climate injustice, despite its heightened vulnerability.[7] Even before the violence at the market, AO's nonnormative body offers a dense account of disability and discrimination, and her determination to overcome both is an example of wounded selfhood that revolves around "the image of the wound as a traumatic event that leaves a mark on someone's body and soul and prompts him to investigate its causes and the solutions to fix it. In its specific temporality, the wound creates subjectivity in that it activates a signifying power" (Bondi et al 5).

In AO's case, she has focused on solving instead of investigating, emancipating herself through body augmentations only for this to lead to further ostracization and crippling headaches from her neural implants. Approaching AO's body as the space where self and society interact reveals how Okorafor has embodied Donna Haraway's argument for "the cyborg as a fiction mapping our social and bodily reality and as an imaginative resource suggesting some very fruitful couplings" (5). Through the short space of one week and the setting of AO and DNA's journey through the vast desert to enter the Red Eye, Okorafor couples AO's body with discrimination, sexuality, pain and finally, powerfully, with radical challenges to imperialist capitalism.

Discrimination against AO's body often demonstrates prejudice, both religious and social, as when AO's parents denounce her actions online: "We certainly never wanted her to get those augmentations... We are good Christians. What God gives is best. Now see the devil working through her" (166). Or when an elder at DNA's village of Fulani pastoralists assumes that AO has augmentations because she has sold her original limbs: ""Look at this one's body. These Igbo people hold nothing sacred. They'll sell anything" (79). There are however moments of pleasure, as when AO and DNA share an intimate scene, both revelling in her power and femininity. Meanwhile, the constant depictions of AO's debilitating pain – from her childhood while adjusting to her cybernetic legs to her current headaches, which escalate in intensity after the market attack – make readers "excruciatingly

conscious of what it means to have a historically constituted body" (Haraway 20).

State complicity in Ultimate Corp's actions facilitates Okorafor's engagement with questions of biopower, characteristic of her oeuvre; Carl Death for example draws on the concepts of biopolitics and necropolitics to show how Okorafor's previous novels contribute to imagining new forms of human being and becoming in the context of climate change. This thread emerges again in *Noor*, when AO discovers that Ultimate Corp (with the complicity of the Nigerian State) is responsible for her birth defects (through genetically modified foods eaten by her pregnant mother), her near fatal car accident, as well as the violence leading to the deaths of the Fulani herdsmen in the attack on DNA and his friends. After Ultimate Corp forced AO to need the augmentations and gave her access to them (seemingly by choice), it then monitored her closely. Ultimate Corps's approach backfired, since her neural implants ultimately gave her control over all technology.

Throughout the novel, Okorafor offers glimpses of alternatives to this corporate omnipotence that has dominated both AO's life and ruined the planet. Pairing the utopian Hour Glass community with the cyborg imagery of AO—born disfigured but now all-powerful as she masters control of digital technology with her mind—Okorafor challenges dominant narratives about both disability and capitalism. AO ultimately publicly exposes Ultimate Corp, holding them accountable for harms done to the environment, the Fulani herdsman and her own body.

Her call to challenge the company is greeted by cheer from the crowds of supporters at a market at the Hour Glass, until another attack by Ultimate Corp soldiers who have infiltrated the community forces her to escape. This action leads her to shut down all the Noors while "crying tears of blood" for her own body and "for everyone Ultimate Corp had stunted deformed, exterminated and displaced" (208). As the turbines generating power from the swirling sandstorm stop, so too does the so-called natural disaster and "as the sands fell, so did the bones"—finally granting rest to those unlucky to have been caught in the deadly winds and "stripped of life, then of all flesh and left to fly" (208).

That the narrative begins and ends at the market as a site of violence, in both storyworlds—the known world controlled by Ultimate Corp and the free world of the Hour Glass—calls for closer attention. Following Haraway, if the figure of the cyborg is indeed human ontology, "a condensed image of both imagination and material reality" (2016, 7) then AO's challenge to Ultimate Corp can be read as a challenge to the all-powerful market. In the space of one week—moving

among the city, open desert, nomadic village, and a utopian society—Okorafor shows that "bodies are also the primary means by which capitalism does its job" (McLaren xiii) and counter to the popular saying attributed to Mark Fisher, she proves that imagining the end of capitalism can in fact be easier than imagining the end of the world.

Conclusion

Like all environmental change, climate change is an embodied experience. Temperature shifts, weather patterns, and policy negotiations "act on, with and through human bodies" (Sasser). This analysis of African cli-fi points to the myriad seen and unseen impacts on both the physical body and "the body as an interface, a threshold, a field of intersecting material and symbolic forces" (Braidotti 44). The characters in *IDHTBTW* and *Noor* reveal powerfully embodied accounts of subjectivity as the novels' temporal and spatial contexts of climate collapse are mediated by factors like sexuality, religion, activism, mental and physical health, disability and discrimination. Mackay's consideration of queer identity, mental health, and climate anxiety queers environmentalism's heteronormative preoccupation with posterity; while Okorafor's crafting of AO as a biopolitical figuration simultaneously embodies and transcends the many ways that capitalism subsumes subjects. Together, the authors offer rich alternative hermeneutic resources for queer characters, characters with disabilities and climate change as a central motif in fiction.

These examples of embodied knowledge situate theoretical insights of subjectivity within the novels' material context of climate change; examples of what Anna Lowenhaupt Tsing theorizes as "third nature," or that which "manages to live despite capitalism" through strategies of "collaborative survival" across difference (viii). Beyond concretizing the abstract nature of climate change, the authors challenge hegemonic epistemology in climate change knowledge through dyadic story-worlds and nuanced characters that offer exactly the kind of "world traveling" that Dotson suggests as a solution for addressing contributory injustice. Divided by "The Wall" (*IDHTBTW)* and "The Red Eye" *(Noor)* both narratives compellingly represent the forced demarcations that climate collapse exposes and imposes—haves and have-nots, queer and straight, able-bodied and disabled and more. This analysis of African cli-fi novels thus allowed for an interdisciplinary conversation, bridging the divide between the natural sciences and humanities. Climate science and literature might attend to different conventions, in the claims made or audiences addressed, but the divide between them "melts in the heat of global warming" (Thomas 1587), complicating the

view not only of who is threatened by the transformation of key earth systems but also of what is taken for granted as climate knowledge.

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2. 'Queer' is used as an adjective by people whose sexual orientation is not exclusively heterosexual or straight; and popularized as an umbrella term that includes people who have nonbinary, gender-fluid, or gender nonconforming identities. It is acknowledged that this is not a universally accepted term even within the LGBTQIA+ community, given the term's pejorative origins. Following Mackay's use of the term in the novel's blurb, 'queer' is used throughout in reference to the three main characters, who identify as gay men.

3. See Lesley Green.

4. Climate anxiety, or eco-anxiety, refers to distress related to worries about the effects of climate change.

5. Homonormative refers to the privileging of heteronormative ideals and constructs onto LGBTQIA+ culture and identity.

6. See Ruth Evans.

7. See Sarah L. Bell et al.; Gregor Wolbring; Molly M. King and Maria A. Gregg.

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