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Liam Kiehne
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Defining the Genre of Environmental Literature

How do you make someone think like a mountain? Aldo Leopold seemed to have the right idea: write a story about one. And so he inspired generations, and generations to come, to pursue conservation efforts and to fight for the just treatment of the land. Now, we are confronted with similar questions: how do you make someone think like an ecosystem? Like a climate? Like nature itself? The necessity of answering these questions is bearing down on the back of society, as ecological disasters like we've never seen before creep onto the world stage. Just as always, storytellers have lent their unique voices to the discussion of this looming crisis and its potential solutions. Their vigilance and moral aptitudes are commendable, and they have the skills to match both, but it is not enough to simply write environmentally-conscientious works of fiction. For them to be effective, we must determine what makes such fiction sufficiently "environmental." We must distinguish it from other socially-conscious works of fiction like *Native Son* and *The Absolutely True Diary of a Part-Time Indian*. There have already been great strides in understanding this kind of fiction, thanks to the work of ecocritics like Greg Garrard and Terry Gifford, and concerned writers such as Amitav Ghosh. I believe that we can and must go deeper than what has already been suggested, that we can find the essence of environmental literature rooted in the very foundations of fiction: among character, story, and theme. In this paper, I will contend that environmental fiction is distinguished by its reliance on what I shall call "strong setting-driven" writing, a method in which story, character, and theme are more influenced by the setting they play out in than by each-other or themselves, so much so that it is virtually impossible to discuss any of them without also discussing the setting. I will first discuss the several attempts to define the environmental genre and guide its development, and what must be accomplished in doing so. I will then provide my own definition of

environmental fiction (setting-driven writing), explaining how it is distinguished from other works of fiction and how it accomplishes the goals of environmental fiction, and then I will defend it by analyzing four works of environmental fiction—*The Hungry Tide*, *The Fifth Season*, *Annihilation*, and *The Windup Girl*—to prove that they make use of setting-driven writing to convey an environmentalist perspective.

Many authors and critics before me have pondered how to write about the environment correctly and effectively, such as Greg Garrard in his book, *Ecocriticism*, an exploration of how environmentalist literature in the past has been categorized and critiqued. Of particular interest to me are his chapters on pastoral literature and the concept of wilderness, two ideas that emphasize defining environmental literature in terms of place. He quotes Terry Gifford's distinction between three kinds of pastoral: "... the specifically literary tradition, involving a retreat from the city to the countryside ... 'any literature that describes the country with an implicit or explicit contrast to the urban'; ... and the pejorative sense in which 'pastoral' implies an idealization of rural life that obscures the realities of labour and hardship" (Garrard, 33). Garrard contemplates wilderness writing to have similar themes of escapism, but notes a key difference: "... wilderness fits the settler experience in the New Worlds ... with their apparently untamed landscapes and sharp distinction between the forces of culture and nature" (60). These are excellent definitions themselves, and help to distinguish between types of environmental literature. What I want to suggest is a way to find what is common among all works of environmental literature, and I think that the way these two types rely on place is a helpful way to start.

There is also the question of what purpose environmental fiction is meant to serve, especially in the modern day. Amitav Ghosh, who wrote in his recent book *The Great Derangement*—in regard to climate change—that future generations will not look kindly on today's publications:

In a substantially altered world, when sea-level rise has swallowed the Sundarbans and made cities like Kolkata, New York, and Bangkok uninhabitable, when readers

and museum-goers turn to the art and literature of our time, will they not look ... for traces and portents of the altered world of their inheritance? And when they fail to find them ... what can they ... do other than to conclude that ours was a time when ... art and literature were drawn into the modes of concealment that prevented people from recognizing the realities of their plight? (Ghosh 2016, 11)

Ghosh believes that there is a moral responsibility hanging on the shoulders of fiction writers, an obligation to confront readers with the realities of the environmental catastrophes facing the global population both in the present day and in the future. He even offers his own idea for writing effectively in this way, and for writing about the natural world in general, by placing emphasis on the uncanny elements within it (Ghosh 2016, 30). This perspective is corroborated by Yi-Fu Tuan in his book *Topophilia: A Study of Environmental Perception, Attitudes, and Values* when he writes on the concept of wilderness:

“Wilderness” cannot be defined objectively: it is as much a state of mind as a description of nature. By the time we can speak of preserving and protecting wilderness, it has already lost much of its meaning: for example, the Biblical meaning of awe and threat and the sense of a sublimity far greater than the world of man and unencompassable by him. “Wilderness” is now a symbol of the orderly processes of nature. (112)

This intrinsic mystery to what humans consider to be “wild” lends credence to Ghosh’s argument. But I believe we can go deeper. We need to ask what, exactly, gives a sense of the uncanny in environmental literature; this can be identified, if we consider what the genre is supposed to accomplish in the first place.

Most writers of environmental fiction are clearly driven to encourage a deeper appreciation of the natural world, for its beauty, its relevance to human needs, and for the dangers that threaten both it and those who live within it. And like all stories, environmental fiction places the reader in a new perspective. This may be the perspective of another sex or gender, of anyone belonging to any race and ethnicity, culture, or moral code, and even of another species. Whatever perspective is taken, it has the power to inform the reader of a new way of thinking if the details of that

perspective are appropriately exploited, such as exposing the reader to an everyday reality of a particular group by putting the protagonist through that very same experience. In environmental fiction, what tends to be most relevant to the new perspective is the place in which the story is set; a forest, a city, a marsh, a wasteland, and so on. So environmental fiction seeks to inform the reader of a way of thinking which reflects the experience of those who actually endure the realities of living in the depicted place. There is a subtle and important difference between the endured realities of environmental fiction and the endured realities of other fiction: the endured realities of the former only exist due to the relevance of the place, while the places of the latter perspectives have no such critical impact on their endured realities. This endured reality may stem from the place itself, like a natural disaster, or may be the result of another character or group of characters acting upon it, like an oil company. So through the new perspective, the reader is encouraged to be more considerate of a place's role in the lives of others, or even of themselves. This does not require that the work be written from the place's own point of view, only that the place be relevant to the point of view taken. Either way, the goal of writing such a perspective is to degrade narrow anthropocentric thinking, to make the reader more aware of how inhuman forces (specifically places) can play a greater role in the affairs of humans than humans themselves. A book written in this way is setting-driven, and that is what it means to be a work of environmental fiction.

When I say that a book is “setting-driven,” what I mean is that the place inhabited by the characters and story (the anthropomorphic elements) is more relevant to either of those two than they are to each other. So a protagonist's actions may be shaped by what the environment has conditioned them for, and the central conflict may only arise as a direct consequence of that same environment. Let me tell a story to show what I mean, the story of Dave the Lumberjack: Dave was taught as a young boy to never venture too far into the dark forest, for it was ill-tempered and hungry. It was the forest that made his mother a widow, and it would make her childless too if he

fell for its tricks. So Dave only cut down the poor-quality wood on the forest's edge. Still, his persistence made him into a powerful man. A blizzard came one winter, so cold that Dave had to exhaust every scrap of wood in the house to keep his fireplace hot enough. He barely saw the end of it, and his bones told him there would be more to come. Dave leaped out into the windswept drifts with his axe and trudged deep into the forest, where the hottest-burning wood could be found. He got his sled loaded up, and turned to leave; but glimpsed, in a fatal moment, a tattered thing tossed by the wind. He narrowed his eyes and figured it for a hat, like the one his father wore. Knowing he could not leave a part of his father unburied, he stuck out his chest, and marched deeper in. The hat fluttered and bobbed away in the building wind, and he chased after it. He charged through banks and flurries of snow until he finally caught up, but looking closer, he saw it was not the same hat. It seemed it was still a ways off, but he was disappointed again when he caught that one. After another few attempts, he rested against a tree in dismay. And then, before his feet, fell a torn old hat. This time, Dave had the presence of mind to look above him; and there, in the heart of the forest, were hundreds of hats filling just as many trees, and he saw his own hat up there with them.

The tale of Dave is entirely driven by its setting. Dave's actions as the protagonist are all affected by, and directed toward, the world in which he lives: getting wood from the forest, taking shelter in the blizzard, and staying away from the forest's heart (until his unfortunate end). The story is driven by the setting in its own turn, as room is made for conflict only when the setting changes (Dave would have happily kept to the forest's fringe, had a blizzard not compelled him to go deeper). It is critical to note that the story and character could not be the same without the setting. If there were no forest, no blizzard, and no lodge, then it would be impossible to set up the same conflict, because the conflict requires that Dave occupy some kind of space, and that the characteristics of the said space pose some kind of hazard to him. All we would be left with is the story that Dave was a lumberjack (if he can even be called a lumberjack with no forest) who

neglected his mother's warning, and was never heard from again because of it. The essence of the story and character is there, but without a place to put them in, it seems meaningless and generic; it could refer to a warning about a certain character, or an item. But neither characters nor items are like settings, since they are implicitly subject to the universe's rules, while a setting avoids this subjectivity because it is the universe and therefore determines these universal rules. There is no way to fundamentally change the universe, there can only be actions that persuade it to enter a state it was predisposed to become in the first place. Think of it like climate change: humans may be responsible for the majority of it today, but that does not make them its creators, and that is not just because it existed prior to their carbon footprint. In the laws of the universe of humans, it was always possible for climate change to occur, and so it did when the conditions for it came about as a result of human activity. It is also worth mentioning that the setting is not just some sort of plot device, like a macguffin, supervillain, or herald. It may be manifested or symbolized as such, but its influence is further-reaching than just any one of those things. The rules it sets for the universe dictate how plot devices behave, thus elevating it beyond anything which can be changed (the hero can slay Lord Voldemort and destroy the One Ring to Rule Them All, but he or she cannot impact the cosmic rules that allow for the same slaying and destruction).

Henceforth, I will use the terms "setting-driven writing" (and all its variants) and "the environmental genre" interchangeably. By genre, I refer to the broader range of approaches to analyzing works of literature, such as analysis of fantasy, or analysis of science-fiction. It is here treated as an interpretive lens rather than as a set of conditions for qualifying as a given kind of fiction. Under this view, a work of fiction's genre is not fixed (as is appropriate, given the history of defining genres), and the work can be considered under many different lenses of genre at once; some may be effective at deconstructing and categorizing a work, others may not be. Character-

driven writing is one such genre in this sense, and so is setting-driven writing. The importance of treating setting-driven writing as an interpretive lens will be clear soon.

One concern that could be raised against this theory of the environmental genre as setting-driven writing is the broad range of fiction such writing is found in. If a setting is defined as the universe of a fictional world, then it seems that every novel, comic, and short story ought to be called setting-driven. Descriptions of lackadaisical countryside and ghastly woods make *The Legend of Sleepy Hollow* setting-driven. The laws of hydrodynamics supposedly underpin Huckleberry Finn's escapades and the homeward voyage of Odysseus. Even *Pride and Prejudice* has to obey the universal laws dictated by its setting. And that just accounts for the laws a setting creates for nature; should social laws also count? If so, then *1984*'s iron-fisted totalitarianism easily makes for a setting-driven book. And so on and so on, until the last work of fiction in the human canon is named. This seems like the necessary consequence of the setting theory as-written. But it is possible to narrow its breadth with as little alteration as possible.

Let's make one concession: that every work of fiction with universal rules is setting-driven, at least in the way just defined. That means we'll have to narrow down the characteristics of traditional environmental fiction to determine what subset of setting-driven literature is environmental. One way to do this is to add a requirement that the rules dictated by the setting be entangled with the themes of the story, in such a way that the same message could not be conveyed were the setting different. Imagine Dave's story again: if we were to try and discern a theme from it, a good one might be the give-and-take nature of the wild, as Dave and his predecessors all become resources for the forest just as the forest was once a resource for them. Such a theme would be ingrained into a rule of the universe, that lumberjacks and forests try to consume each-other, and would thus make the story "weak setting-driven." This conforms well with the view of the environmental genre as an interpretive lens and narrows the breadth of literature the lens can be

effectively applied to, although it still encapsulates non-environmental books which include fleeting moments of weak setting-driven writing. Environmental fiction can be singled out from this grouping if we require that nothing in the book—not the characters, or story, or themes—can be analyzed without including some amount of discussion of how the subject of analysis relates to the setting. This “strong setting-driven” writing is far more accurate, as it reflects the tendency of environmental fiction to represent realities which could not exist without the influence of the place the perspective occupies.

It’s one thing to write an original story to demonstrate how the setting-driven theory works. If we were just trying to guide authors towards creating more effective environmental fiction, then that would be enough. But we have to do more. Specifically, we have to provide convincing evidence that works of fiction which have already been published, and which have been accepted as environmental by audiences, critics, and writers, can still be considered as environmental under this framework. If the framework can’t succeed in doing so, it may need to be seriously revised; but the setting-driven theory seems applicable. To test it, I’ll analyze four works of fiction which are widely accepted as environmental: *Annihilation* by Jeff VanderMeer, *The Fifth Season* by N.K. Jemisin, *The Windup Girl* by Paolo Bacigalupi, and *The Hungry Tide* by Amitav Ghosh. I have selected these four books for three reasons: they represent a diverse range of fictional genres, including fantasy, weird fiction, speculative (or science) fiction, and realist fiction, and so they demonstrate how environmentalist perspectives can be effectively incorporated into multiple genres; they were all published within a decade of each-other in the 21st century, and thus reflect the challenges of contemporary environmental issues; and together they build a cohesive argument for the relationship between humanity and the planet (which is particularly relevant in the anthropocene) using the theme of catastrophe.

I will begin with *The Hungry Tide* by Amitav Ghosh. It is a work of realist fiction set in the Sundarbans, an island group off of the Bay of Bengal which is home to fishermen, river dolphins, and deadly tigers. It is told from the perspectives of two protagonists: Piya, an Indian-American girl, who has traveled to the Sundarbans to research the local dolphins, and Kanai, a native-born Indian, who is visiting family at the same time. The two begin their stories together in a chance encounter, and they end up in a disaster no one could have anticipated.

The setting of the Sundarbans works its way into virtually every aspect of *The Hungry Tide*. The expertise with which the natives navigate the rivers, and their relationship with the local wildlife, are two of the best examples of how pervasive the setting is. Fokir, the fisherman who helps Piya with her research, teaches her all the tricks there are to surviving and thriving on the water. She is a quick learner and they become fast friends, but the same cannot be said for Piya and many other of the Sundarbans' natives; she cannot stand their treatment of the local tigers, for they are killed at every opportunity after a lengthy ritual of mockery and torture. Piya finds this appalling, but Kanai and Fokir know better: for the tigers of the Sundarbans are more than the romantic fiction that Westerners enjoy, being voracious, merciless, and more powerful than any human can handle. These two distinct elements represent how *The Hungry Tide* uses its setting: to shape the actions of characters and the path of the story. Characters have to make decisions based on the conditions imposed by the environment, such as choosing when to sail, how to deal with tigers, where to find dolphins, and so on. Whenever the stakes are risen, the environment's condition is always at the heart of the conflict's resolution: characters sail in the morning, kill tigers when the opportunity presents itself, and wait for dolphins in the lagoon. These interactions tend to be very subtle and unimpressive, until the final chapters.

A storm picks up in the Sundarbans, the strongest one in years. Piya and Fokir find themselves in the middle of it, and secure themselves to a tree to brave the winds and flooding. For

hours they stay there in the cold and wet, hanging on for dear life and watching the land and animals around them perish. When dawn breaks, Piya descends, thankful for her narrow survival; but Fokir is dead from a split spine (323). This is where *The Hungry Tide* earns its stripes, by creating a scenario in which the setting is not just pervasive, but ambivalent. The only power Piya had to confront the problem was that given by her environment, and that very same environment spelled the demise of her friend. The point isn't that the environment is hostile, but that it is indomitable. The characters may seem to have won the battle of man versus nature at times, but the storm upends their power by reminding them—and the reader—that nature always spells out the rules of the fight. In fact, to even suppose that the conflict presented is a struggle against nature itself seems like a fluke of logic; as already repeated ad nauseam, story elements cannot change universal rules because they are immutable. There is no defying nature, only living with it.

Ghosh's personal ethic on writing for environmentalist perspectives shines through in this scene as well. That the waters of the Sundarbans should only now become so violent, when they were so tranquil throughout the rest of the story, is unsettling, and contributes to the greater unease of living within an environment one ultimately has no power over. It somehow brings the collective setting to life, animated with destructive and invigorating force, like he describes in the beginning of *The Great Derangement*: "Who can forget those moments when something that seems inanimate turns out to be vitally, even dangerously alive? As, for example, when an arabesque in the pattern of a carpet is revealed to be a dog's tail, which, if stepped upon, could lead to a nipped ankle?" (3). This strikes on what Ghosh, and other environmentalist writers, try to do with their settings: to liberate them from being mere background for characters and plot, and bringing them into the forefront where they cannot be ignored. Though politically neutral, this is a crucial step towards awakening concern for the environment around us, as Ghosh implies in an anecdote concerning his trip to the tsunami-ravaged Andaman and Nicobar islands: "Not long afterward, while flying into New York's

John F. Kennedy airport, I looked out of the window and spotted Far Rockaway and Long Beach ... Looking down on them from above, it was clear that those long rows of apartment blocks were sitting upon what had once been barrier islands, and that in the event of a major storm surge they would be swamped ...” (Ghosh 2016, 36). From that perspective, where the environment appropriately fills his vision, Ghosh—and anyone—can clearly see the need to foster concern for what we normally dismiss as passive, and other writers of the 21st century seem to agree. The other three books and authors I will discuss take a similar stance on using the setting as the stage and agent of catastrophe, adding their own spins on what the environment means to us as individuals and as a species.

The next book is *The Fifth Season* by N.K. Jemisin, who describes her setting, the “Stillness,” in the prologue: “It is ordinary, as lands go. Mountains and plateaus and canyons and river deltas, the usual. Ordinary, except for its size and its dynamism. It moves a lot, this land. Like an old man lying restlessly abed it heaves and sighs, puckers and farts, yawns and swallows” (2). The supercontinent her story plays out in is an exaggeration of the planet we ourselves call home, being host to a plethora of geological catastrophes. Just as in *The Hungry Tide*, these catastrophes arise out of nowhere to the great alarm of the Stillness’ unsuspecting inhabitants, who have no choice but to live with a planet that seems to have a cruel mind of its own. The villages these inhabitants live in, called comms, are governed by strict utilitarian conduct: they hoard resources to survive global winters that may stretch into decades, they organize their citizens into working castes through selective breeding, and when times of crisis do come they turn away anyone who can offer nothing of use to the comm’s survival. It sounds like a post-apocalyptic setting from science fiction, but really, it’s fantasy. For it is not just natural geological processes that disturb the Stillness, but a mysterious magical force known as orogeny (and perhaps other supernatural things besides). This magic is wielded by orogenes, mutant humans with the ability to extend their consciousness and

force of will beyond their own bodies, and into terra firma itself. This makes them highly valued, but also feared, as the protagonist—Essun—could say for herself. Through her adventures outside of the empire’s academy, she learned about its dark secrets, such as the inhumane treatment of failed orogene children and the distortion of its founding myth. She was reluctant to concede at first, but a succession of revelations, betrayals, and losses compelled her to ultimately question her empire’s authority, and to softly reject it.

In a “normal” setting, this would seem like a standard character arc: the protagonist learns through experience to distrust a familiar authority. But the Stillness is no ordinary setting, and this somewhat complicates the moral dilemma Essun is faced with. She is familiar with the dubiousness of the empire from the very beginning, knowing full well that it treats orogenes like her in all kinds of dehumanizing ways, but she is convinced that doing so is necessary for humankind’s good as a whole. But this conviction erodes as both the extent of the empire’s crimes and the frivolity of its aspirations are exposed to her. This is especially so when she meets a comm outside of the empire’s control, which has persisted for centuries (an unheard-of lifespan for any comm) by making orogenes its leaders.

This comm makes all the difference by offering a counterpoint to the tyrannical response to ecological catastrophe. The setting of the Stillness builds upon the theme of reacting to uncanny and abrupt catastrophes started by Ghosh by making the disasters it hosts common knowledge to the characters, rather than freakish twists of fate. Its land is frequently referred to as “Evil Father Earth,” having been demonized by everyone who struggles to make a living off of it, and the constant natural disasters and shifts in climate do not make it a mystery as to why this is so. Virtually no human holds the earth in admiration, but rather treats it to a pessimistic cost-benefit analysis. This leads to a divergence in ethics where, on the one hand, there are those who wish to secure as much control as possible over the land (represented by the empire), and those who just live with its

relentless upheaval (represented by the independent comm) on the other. The treatment of orogenes is an excellent measure of how the empire and the comm exercise these ethics. The empire treats its orogene population like a mere commodity, which is bred, dissected, and indoctrinated as a caste of perfectly compliant servants. As a commodity, they are only useful so long as their agenda aligns with the empire's; any orogene that goes unclaimed by the empire, or who rebels, is likely to be marginalized—or worse—by a society which reviles them. The independent comm is about as opposite of this as it can get, as the orogenes maintain the highest leadership positions within the comm while not treading on the rights and dignity of non-orogenes. The comm is not nearly as powerful or as advanced as the empire, but is arguably more effective, as it is supposedly much older and has far less to lose (while the empire loses things quite regularly). In this orogene-centric perspective, the two ethics are reducible to divergent beliefs on what role environmental knowledge (such as that naturally possessed by orogenes) plays in society: either as a tool for fulfilling the priorities of society, or as the fundamental guiding principles of what society's priorities ought to be. It takes only a small imaginative leap to suppose how this relates to our own world, where catastrophe may just be waiting to happen.

So Jemisin builds upon the simple foundations established in *The Hungry Tide*, taking the idea of a pervasive, ambivalent, and catastrophic setting and wondering how such an environment is best inhabited: should it be controlled, or should it be adapted to? This question will appear in another book and under slightly different circumstances, but before that can be discussed I must analyze what Jeff VanderMeer has to offer in *Annihilation*. His story takes place within the enigmatic wilderness of Area X, and VanderMeer wastes no words for describing its strange landscapes and inhabitants. It is a region in constant flux for indiscernible reasons, and which affects the minds of those who visit it in ways that vary from one expedition to the next. It is a place not meant for humans, as the reader is keenly aware of in a particularly vivid scene within an abandoned village:

Some outer walls still stood, dark rotting wood splotted with lichen, but for the most part these walls had fallen away and left me with a peculiar glimpse of the interiors: the remains of chairs and tables, a child's toys, rotted clothing, ceiling beams brought to earth, covered in moss and vines ... I also saw a few peculiar eruptions of moss or lichen, rising four, five, feet tall, misshapen, the vegetative matter forming an approximation of limbs and heads and torsos. (VanderMeer, 96)

This is just one of many descriptions of a wilderness run wild, where the old, safe and stable are hard to come by (if they exist at all), and where the new and incomprehensible whisk them away like a bad memory. As weird fiction, *Annihilation* is committed to the subversion of human reason by exposing it to the uncanny. In popular cases, as with H.P. Lovecraft and Edgar Allen Poe, the uncanny is represented by characters and objects, like ghouls, gods, and vital organs. When engaging in environmental fiction, VanderMeer expands this range of representations to include the very setting of his book. He does not shy away from representing the uncanny in objects and persons, but whenever he does so, it is overshadowed by the weirdness of Area X itself, as the mysterious forces of the region shape all things—living or not—into something that better suits its true nature.

There are four major characters in the story of *Annihilation*: the psychologist, the surveyor, the biologist (also the protagonist), and the anthropologist. They are members of a government research team meant to investigate Area X, to build on the findings of past expeditions so as to begin to understand how it functions. So from the very beginning, their actions are set up to be oriented towards the very setting *Annihilation* takes place in. Moreover, they do not go unchanged during their time there: the biologist recounts in her journal how her husband, having gone on an expedition into Area X himself, had returned to their home some time after going missing, and was nothing like the man she had previously known: “we sat in the living room, him on the sofa and me in a chair opposite. I needed some distance from this sudden apparition ... There was an odd calm about him, punctured only by moments of remote panic when, in asking him what had happened, he recognized that his amnesia was unnatural” (56). By the book's end, the biologist herself realizes that

she has changed, though not in the same way as her husband had. She finds herself drawn further and further into Area X, falling for its mystery as everyone around her falls to its terrors; the psychologist, driven by her status as leader to exercise more and more control over her team, inadvertently causes the expedition to fall apart when she begins to go delirious. She keeps information about Area X and the missions into it secret, relying on hypnotic suggestions to keep her underlings trustworthy and in the dark, but this only leads to chaos when she fails to anticipate what will happen in Area X.

This leads into how the themes of *Annihilation* are developed through its setting, which are expressed in how the biologist and the psychologist interact with Area X: the psychologist predicates her role as leader on total control, struggling to keep everyone under her hypnotic sway and to reduce Area X into information that she and her superiors can comprehend. As already discussed, this results in her ultimate downfall. The biologist, on the other hand, is an independent spirit, and doesn't seek power over either her companions or her environment. She lets herself be guided into Area X by a combination of her need to understand what happened to her husband and her child-like curiosity; these are distinct from the psychologist's cravings for comprehensible knowledge, since they implicitly reflect the biologist's acceptance that not all of the inner workings of Area X are meant for her to know. Her past experiences with the natural world inform her that some things are too intricate for total comprehension, as she explains when describing a chance encounter with a rare species of starfish: "... the longer I stared at it, the less comprehensible the creature became. The more it became something alien to me, the more I had a sense that I knew nothing at all— about nature, about ecosystems" (175). This may seem dissonant with environmentalist perspectives, but contrasted with the psychologist's obsession with categorizing, manipulating, and simplifying, it reveals what *Annihilation* is all about. "Area X" isn't that much different from any other wilderness under VanderMeer's view, its innate incomprehensibility is just more on-the-nose. As such, it is only

in Area X that the fundamental flaw of unquestioned faith in human understanding is revealed, when the only survivor of the expedition is the scientist who accepted that not all of the world can be broken down into mathematical formulas and scientific names. Her rival, who could not adapt her controlling approach to such a reality, dies because of it.

An important way in which *Annihilation* ties into the themes of catastrophe in the other books is the cause behind the specific weirdness of Area X. It is unknown what the trigger of the massive changes to the natural landscape is in the book, only that there was one, which served to reveal the incomprehensible mystery underlying the wild. What is known is that humans were at the center of it: “When Area X first appeared, there was vagueness and confusion, and it is still true that out in the world not many people know that it exists. The government’s version of events emphasized a localized environmental catastrophe stemming from experimental military research” (VanderMeer, 94). This adds a twist to the original formulation of catastrophe provided by Ghosh and Jemisin, who make catastrophe seem like a plain-cut problem of failing to foresee the consequences of human or ecological behavior; VanderMeer’s catastrophe is the centerpiece of the book despite never being clearly defined, because it exists to reveal how human meddling can cause environmental catastrophe on its own, and how such catastrophes are deepened by the incomprehensibility of the wild. There is no foresight into the consequences of human action like the psychologist would like, nor are the consequences abrupt like they are in *The Hungry Tide* and *The Fifth Season*. This is a kind of catastrophe which is an even better analogy to the challenges facing humankind in the anthropocene, one which represents the full mysteriousness of what is to come given the path industrialized society has taken.

That is VanderMeer’s contribution, to frame the natural world as something which eludes human comprehension. That, along with the baseline which Ghosh sets and the dichotomy Jemisin suggests between control and conceit, helps to prop up the discussion of a greater topic in the last

book, what humanity ought to do in the wild frontier of the anthropocene. Paolo Bacigalupi sets *The Windup Girl* in a dystopia of technological irresponsibility, unfolding the story within the sweltering grit of twenty-third century Bangkok, capital to one of the last countries on the planet which has thus far rejected the corruption of gene-hacking “calorie companies,” although the struggle to keep a hold on the last shreds of its independence is one that it seems to be losing. The world around it has succumbed to the depletion of fossil fuels and the onset of climate change, turning to corporations that offer the most advanced breeds of genetically-engineered crops, domestic animals, and even humans. The world learns, of course, that these advances are entwined with new problems of their own: diseases threaten to eradicate the artificial monocultures, the animals run rampant and breed into inextinguishable pest species, and the flourishing of the “New People” market results in a humanitarian crisis no one pays heed to. And behind all of the achievements and all the shortcomings is the overbearing need for energy, the need that drives all the story’s players into a downward spiral of loyalty, conspiracy, and the pursuit of happiness.

The Windup Girl provides a critical test for the setting theory with its anthropocene-era world. Neither *Annihilation* nor *The Fifth Season* take place in a setting that is so heavily impacted by human desires and actions as *The Windup Girl* is (*The Fifth Season* comes close, in some respects, to representing a human-controlled environment, but orogenes only accelerate or decelerate geological processes at best). This seems to make the theory indefensible, as the book clearly falls under the banner of environmental fiction (a cautionary tale of tampering with the natural order, such as this one, is unlikely to be accepted as anything else). But the theory can be saved, if we recall a caveat in what a setting does in stories: it determines the rules of its universe. No story element, be it character or object, can defy universal rules, and if an established universal rule appears to be defied, it is rather being more clearly defined (that is, the setting is revealing that there is an exception to the norm, such as the One Ring’s rule of invulnerability except in conditions where it is exposed to the

fires of Mount Doom). In this way, the anthropocene does not challenge the setting theory because it still abides by universal laws, instead of changing them to reflect the powers of a story element (change would imply control, an illusion which *The Windup Girl* seems keen on dispelling). Human activity did not change universal rules in any way to cause sea level rise, ecological collapse, or famine; the universe was always disposed to these occurrences, and needed only receive the appropriate input of action, which could have come from any number of sources.

It's crucial to ensure that the anthropocene does not represent a genuinely human-caused change in universal rules, because it would otherwise pose a serious challenge to the themes of *The Windup Girl* rather than support them. Like *The Fifth Season*, *The Windup Girl* explores the idea of control at a civilizational scale by representing how anthropocentric organizations (be they empires or corporations) attempt to use knowledge of the environment to further their own agendas, rather than shape their agendas to conform with what they know of the environment. While Jemisin focuses her work on exploring the human costs of this practice, and how those costs ultimately result in downfall, Bacigalupi explores how such practices are ultimately self-defeating because their perpetrators refuse to adapt to changes they themselves created, fallaciously equivocating change with control. The five protagonists all open up windows for the reader to look into this setting, each with a different perspective: Anderson Lake, the businessman, represents the calculating and competitive world of trade and the agricultural industry; his accountant, Tan Hock Seng, navigates the criminal underworld as a second-class citizen and refugee; Jaidee Rojjanasukchai, a retired competitive fighter, and his lieutenant and apprentice—Kanya Chirathivat—loyally serve the Thai government's environmental ministry; and Emiko, one of the genetically-engineered humans (or “windups”) owned and operated by gangsters and pimps, struggles against both her masters and her genes in a bid for freedom.

Of these five, Anderson and Kanya are the most relevant to the setting as it relates to human institutions. Anderson's work keeps him detached from much of the world's lower class, but he is not shrewd or cold-hearted. In fact, one could call him a romantic, given how he dwells on little things not many others can see the significance of:

Not a single one of these furry fruits should exist; he might as well be hefting a sack of trilobites. If his guess about the *ngam*'s origin is correct, it represents a return from extinction as shocking as if a Tyrannosaurus were walking down Thanon Sukhumvit. But then, the same is true of the potatoes and tomatoes and chiles that fill the market ...⁽⁴⁾

Ironically, the character most likely to view the fruit as a mere commodity is one of the only people who dwells on how special it is, and in ways beyond the monetary. And not without reason, for it reflects his humanitarian bent: he tries to help the titular character in her struggle in a society disgusted toward her, and is determined to find undiscovered genetic material that could save the world from catastrophic famine. But to do so, he has to overcome the resistance posed by Kanya and her environmental ministry. Kanya, too, is fairly sentimental, and where Anderson is fixated on values such as beauty and utility, Kanya observes loyalty and honor, especially to her superiors. She develops an almost familial bond with Jaidee which compels her to save a Thailand seen by both of them as slipping further and further into corruption and decay. Described as joyless, she is nonetheless fierce and grounded when it comes to matters that are close to her heart.

The two of them never directly meet, although their actions have enormous consequences upon each other. Jaidee and Kayla interfere too much with Anderson's trading operations, prompting him to take a more underhanded response. Joining a conspiracy, Anderson and his allies push too far and compel the environmental ministry—including Kanya—to crack down on trading. The conspiracy counters with a coup, and even a paramilitary invasion. The environmental ministry in ruins, Anderson seems victorious; but a defiant Kanya rebels against the occupation, and drowns Bangkok by destroying the levees surrounding it. The very result of this conflict is a representation

of the theme of change versus control, with both characters using as much power as they can to get their way and undercut the other, ultimately destroying each other. But this is not merely a story of downfall due to a refusal to cooperate. The setting itself ensured that Kanya's and Anderson's plans were always doomed to fail: it was only a matter of time before the levees gave out; a new strain of crop disease would eventually overwhelm new genetic variants; resource scarcity and a growing and divided population would have degraded Thailand's integrity over time; and so on. The effects of the centuries before their time had already determined the course of history for Anderson and Kanya, but neither of them accept it. They try to resist impending crisis, and only make things worse for everyone by doing so. One may object by asking what else they are supposed to do, and another key character, Gibbons, has the answer.

Gibbons is a generipper, a genetic engineer. He hides from the agricultural industry, working to resurrect old crops for the Thai government in exchange for his protection. He serves as the mutual antagonist of Anderson and Kanya, representing the kinds of changes that made the world the mess it is, and which they try to resist. Gibbons finds this resistance to be completely futile, as he explains to Kanya:

“Blister rust is our environment. Cibiscosis. Genehack weevil. Cheshires. They have adapted. Quibble as you like whether they evolved naturally or not. Our environment has changed. If we wish to remain at the top of our food chain, we will evolve. Or we will refuse, and go the way of the dinosaurs and *Felis domesticus*. Evolve or die. It has always been nature's guiding principle, and yet you ... stand in the way of inevitable change.” (265)

Gibbons is a radical. He is the mad scientist playing god with all the DNA he has access to, while also the wise man who sees the error in his youngsters' ways. Anderson and Kanya struggle to preserve their own outdated systems, but even if they succeed, they or their successors will be confronted with the same problem in the future. This is because the physical manifestation of the setting—the ecosystem, if you will—has been modified. Every victory the old system has in its

resistance to this encroaching ecosystem is fleeting, and inevitably unsuccessful because the ecosystem remains undeterred. It is only by following Gibbon's advice to fundamentally change human society, and even humans themselves, that the ecosystem's encroachment can be survived, just as one changes course before a head-on collision rather than trusting the vehicle to be more powerful than the obstacle.

Enough of Anderson and Kanya, though, and the stagnant bureaucracies they represent. What does this future hold for humans as individuals? Emiko, the windup girl herself, provides some insight into that side of the story. A product of genetic engineering, she is a young woman habituated through ruthless training and specialized DNA to defer towards any paternal figure; this, and her delicate and exotic physique, places her in the seedy underworld of prostitution rings. Unlike the other characters of *The Windup Girl*, Emiko's autonomy is severely limited by her upbringing, her genes, and her social status (genetically-engineered humans like herself are illegal in Thailand). She has strong desires, but circumstances limit her ability to act on them: her attachment to her male owners and abusers, as well as her non-porous skin (which, combined with the abnormal heat of late-stage global warming, leads to heat exhaustion from overexertion). Ironically, she is the most powerful character in the book's lineup of protagonists as well, being imbued with outstanding reflexes, speed, and cognition, all of which are inhibited by artificial handicaps. Despite these inhuman qualities, she's arguably the most sympathetic character in the book, in part because of her ordeals, but mostly because what she wants more than anything is to belong. When she is told the rumor of a village, inhabited by New People like herself, she is overjoyed, and it becomes the object of her obsession for the rest of the story: "There is a place for windups. The knowledge tingles within her. A reason to live" (Bacigalupi, 112). All the other characters pursue less fundamental desires, like honor, magnanimity, and glory, values that are more esoteric than the hope for food or shelter. So through Emiko, Bacigalupi implicitly posits the question "what does the future hold for

those who just want to live a basic, fulfilling life?” and offers a bleak answer through her failure, that the future only holds alienation from one’s fellow humans and environment. But not all is lost, for Emiko thrives in the cooling waters of a drowning Bangkok; and then, Gibbons appears to offer what she’s always wanted: a bypass for her sterility, so that she may raise a family. It is not a sense of charity which motivates Gibbon’s offer, but the very same philosophy he had explained to Kanya. In the new ecosystem, he thinks, there is no longer room for *Homo sapiens*, but only for its successor: “Someday, perhaps, all people will be New People and you will look back on us as we now look back on us as we now look back at the poor Neanderthals” (Bacigalupi, 385). Perhaps not the most comforting idea, that we will (and maybe even ought to) be waylaid by a better-suited species, but resilience never comes without change and sacrifice.

What do these four books tell us about environmental literature, especially as it relates to the 21st century and the anthropocene? They all convey a belief in the need to think of literature as a platform to encourage new and more responsible ways of thinking about humanity’s relationship with the natural world, and not just with itself. Ghosh teaches us how pervasive the setting is to a story, and how this reflects the pervasiveness of the real world’s ecosystems in and out of human environments. Jemisin suggests a societal dichotomy between control and conceit, the two options of a decision cultures must face when assessing their place within those pervasive ecosystems. VanderMeer points to the inherent incomprehensibility of these ecosystems, which makes catastrophe within them all the more destabilizing. And Bacigalupi wonders about how humans and their institutions can remain viable in a world whose ecosystems, which they once depended on, have begun failing. Their use of strong setting-driven writing is meant to encourage thinking about the environment in terms that are not anthropocentric, by refraining from anthropomorphizing the natural world through character or story. The natural world appears as it should be, as the sheer unapproachable, untouchable set of laws which govern our universe, which dictate all that is and

isn't possible, and which will go on whether we live to understand them or not. There is much to be said on that; hopefully, there is still time to learn from these writers' lessons.

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