

# Slow Catastrophes, Uncertain Revivals

*Edited by Michele Speitz and Joey Eschrich*

*Designed by Ariel Shamas*



*Photo by Ariel Shamas*

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# The Text

The text of this ebook was set in Avenir Next. Adrian Frutiger and Akira Kobayashi reworked Avenir (1988) to address on-screen display issues, resulting in Avenir Next (2004). As part of the Linotype Platinum Collection, Avenir Next was carefully digitized and has the high quality demanded by professional typography.

E-book designed by Ariel Shamas.

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Designed by Ariel Shamas*



PROJECT HIEROGLYPH  
Arizona State University



# "Slow Catastrophes, Uncertain Revivals"

## A Digital Collection for Project Hieroglyph

This collection of research-based stories about the future is proudly published by Project Hieroglyph, founded by Neal Stephenson and headquartered at Arizona State University's Center for Science and the Imagination.

The stories were created by students in "Slow Catastrophes, Speculative Futures, Science & Imagination: Rewriting and Rethinking Sustainability," a course designed and taught by Dr. Michele Speitz at Furman University in South Carolina. The course and the stories were inspired by Project Hieroglyph, and particularly by our first anthology, *Hieroglyph: Stories and Visions for a Better Future* (HarperCollins, 2014), which the students read and discussed throughout the course.

Project Hieroglyph aims to rekindle our grand ambitions for the future through the power of storytelling. The project brings together top science fiction authors with scientists, engineers, and other experts to collaborate on ambitious, optimistic visions of the near future grounded in real emerging science and technology.

We hope that this volume serves as an invitation to educators everywhere: bring us your big ideas! We look forward to collaborating with you on bringing Hieroglyph, and the ideas and aspirations that power it, to learners from all walks of life.

Please contact us at [hieroglyph@asu.edu](mailto:hieroglyph@asu.edu), and learn more about the project at [hieroglyph.asu.edu](http://hieroglyph.asu.edu)

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# Introduction

What can science fiction offer Sustainability or Environmental Studies? Often propelling us to far off galaxies or inquiring about life on Mars in lieu of life on Earth, science fiction may seem better poised to offer solutions to distant challenges instead of our own planet's growing ecological concerns. Yet for avid readers of this literature, it should come as no surprise that the 2013 report on sustainability produced annually by the well-regarded Worldwatch Institute gives pride of place, its closing chapter, to acclaimed science fiction novelist Kim Stanley Robinson. Robinson calls on readers to think searchingly about our shared moment of ecological precarity. And he does so in a pragmatic utopian spirit, one at home with Project Hieroglyph's call for works of science fiction that "provide not just an idea for some specific technical innovation, but also to supply a coherent picture of that innovation being integrated into a society, into an economy, and into people's lives."

Addressing the Worldwatch Institute's framing question "Is Sustainability Still Possible?" Robinson's article entitled "Is It Too Late?" invites us to consider a related set of equally pressing queries:

"So the question could be changed from Is it too late? to How much damage will we let happen? Then we could flip that revised question to its positive formulation: How much will we save? How much of the biosphere will we save? That's the real question. When we ask that question, it reminds us: life is robust. Restorations can be made. Everything but extinctions can be made better. So there is reason for hope. We can think of our work as saving things that will come back stronger later. Even in the bad present, we can create inoculants and refugia for a better time."

Taking inspiration from Project Hieroglyph’s “visions for a better future” and the Worldwatch Institute’s interdisciplinary collection on sustainability, capped off with Robinson’s unabashedly optimistic yet well grounded article, I designed a course which ran in the spring of 2015 (“Environment and Society: Slow Catastrophes, Speculative Futures, Science & Imagination–Rewriting & Rethinking Sustainability”). It brought together students from Furman University’s Sustainability Science major and Environmental Studies minor, as well as those seeking general education credit for Furman’s Natural Environment graduation requirement who were majoring in everything from Art, Philosophy, and Political Science, to Business, Economics, and Health Science.

Reflecting the cooperative nature and culture of interactive participation fostered by Project Hieroglyph, two author-scientists from the first Hieroglyph collection, Vandana Singh and Geoffrey Landis, stepped in as special guest speakers. The course challenged students to draw on multiple disciplines—across the sciences and the humanities—in order to create works of science fiction that might inspire us to address the multifarious complications bound up with climate change, that might embolden us to confront what some see as an impossibility: to be able to say “Yes, sustainability is still possible.”

The handful of short stories published here are a sampling of the course’s capstone projects, selected not by me but rather by the class as a whole. Dubbed *Slow Catastrophes, Uncertain Revivals*, the project deemed that students honor science fiction’s longstanding commitment to infusing speculative fiction with careful research. Thus, at their collective core these stories are not simply the stuff of the imagination, but also of rigorous study and serious inquiry.

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# Curing the Mississippi Delta Blooms

*Graham Browning*



*"Algal Bloom 10/03/2007" by Diana House, used under CC License. Derivative by Ariel Shamas.*



Camden had always loved worms. She was fascinated by the way they moved with a grace she never had. Gawky and awkward, she never felt as beautiful as these dirty creatures. When the tides came in and the rains flooded the old Mississippi River delta, she would scramble to save her friends from the cracked sidewalks of her small town. "They deserve a chance to live," she would think as she scooped up their delicate bodies and returned them to the poisoned soil. She often wondered if she was saving them at all.

Camden lived with her mother in the deep marshy plains of southern Alabissi, the unavoidable lovechild of the elder-states of Mississippi and Alabama. After the River became the painful reminder of mistakes past, the two states were forced to combine budgets and become one "colony." The president and his lackeys controlled from afar, oblivious to what it was like to live in a patchwork state. There was no order, no unity, and certainly no money to spare.<sup>1</sup>

Her mother told her stories about The Great Merger. At nineteen, Camden couldn't fathom "clean" anything, especially water. She grew up amid the sludge and decay. The gulf, once "sparkling and full of life," as her mother put it, was now a cesspool of rot and stagnation. Nothing except the algae lived within five miles of the coast. Even the soil was putrid. Only the worms of Camden's childhood could survive in the filth. Even then, she knew they suffered most grievously.<sup>2</sup>

<sup>1</sup> In his essay "The Climate of History: Four Theses," Dipesh Chakrabarty discusses the possibility that climate change, specifically the increasing acidity of the ocean, will render political and economic downfall inescapable. He uses the phrase "ecological limits to capitalism" to emphasize that human greed will soon outcompete the ecosystem for resources, as it has in this story (336).

Dipesh Chakrabarty, "The Climate of History: Four Theses," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner (London: Routledge, Taylor & Francis Group, 2015).

<sup>2</sup> In "The Trouble with Wilderness," William Cronon references the oft-cited work of Bill McKibben. McKibben believes that "unintentional human manipulation," as demonstrated by the sludge and decay in Alabissi, "means that nature as we once knew it no longer exists" (111). Camden's mother can remember the good times on the gulf before human actions desecrated the landscape.

William Cronon, "The Trouble with Wilderness; or Getting Back to the Wrong Nature," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner (London: Routledge, Taylor & Francis Group, 2015).

The local fishery told the story best. Ed's Fish Place used to be one of many establishments along the shore. Ed Sullivan, the old man as briny as the oceans he once sailed, was a family friend and avid storyteller. He used to sit Camden down on the knee of his tattered yellow fish suit, praying for the industry to reemerge. The government's money never came as promised, and the cleanup ships never skimmed the gulf. There was always talk of new technology that would return oxygen to the water, but Camden didn't believe in fairytales. There was a sinking fog of doubt in the once lively fishing town. The name, Gulf Shores, didn't even matter anymore. It was simply a group of people living somewhere on the shore of a somewhat unofficial state in a somewhat organized country. Camden hated this place. Somewhat.

She dreamed of saving the water and seeing the splendor for herself, a splendor she witnessed in her mother's eyes when she spoke of Gulf Shores. Ruth was a kind woman with lines around her eyes from smiling in her youth and dents in her forehead from frowning lately. The repercussions from the Great Merger were too much for her family to handle. Her father worked in the ethanol industry that collapsed with what the media called the "ocean acidification disaster." Although he hated to admit it, his company was one of many that caused these algal blooms. For years they fought to come up with ways to clean up the mess they made, but local boycotts and lawsuits soon proved too much even for the multi-billion dollar industry. They closed their doors, packed up their chemicals, and the corn-based ethanol industry was over. Something once thought of as revolutionary was now destroying the planet almost as much as its predecessor, fossil fuels. It was proof that anything out of proportion can cause immeasurable harm.<sup>3</sup>

<sup>3</sup> Such a disaster, though not yet to this extreme, is mentioned in Kate Raworth's "Defining a Safe and Just Space for Humanity." She discusses sustainability studies' "planetary boundaries," which are the thresholds we must not cross in order to maintain a stable planet. Ocean acidification is one of these boundaries that, if crossed, may cause irreversible and unpredictable changes (29).

Kate Raworth, "Defining a Safe and Just Space for Humanity," in *Is Sustainability Still Possible?*, ed. Erik Assadourian, Thomas Prugh, and Linda Starke (Washington, DC: Island Press, 2013).



Camden remembers the screams. "Mama, what's going on?" The wailing continued, not responding to her plea for answers. Her stringy ten-year-old legs flew her up the stairs to her mother's body, crumpled like a wet napkin on the floor, her head buried beneath her quaking knees. Her father looked down on her with a cold stare only a man with family responsibilities in these times could muster. Camden assumed he had hit Ruth like the last time until she glanced upwards. A rope held her father's strong body erect. It was the old blue rope he used to pull Camden behind his Ford as she glided on her skates along the seawall. She now understood what chemicals could really do. Chemicals could kill an entire ocean of animals. And they could also kill her father.

The ocean still fascinated Camden. Its resilience was something she wished she could hold in her heart. For so many years, the ocean stood its ground against humankind. It held the fish she remembered tasting and the beauty she could only imagine. Camden almost refused to be human anymore. She couldn't stand the pain her kind slowly inflicted on the gulf. Almost invisible for many years, the runoff from the biofuel manufacturers and corn farms drained into the Old Mississippi and suffocated the sea. The algae bloom, a beautiful rainbow of living poison, killed everything beneath the surface. As a teenager with a thirst for knowledge, she sat in the library for hours researching the mechanics of ocean acidification. The basic theme was starvation. The algae starve the small fish of oxygen and they die. The large fish have no small fish to eat and they die. The bottom feeders release their toxic carbon dioxide into the water, poisoning the algae on top and anything left in between. Camden often wondered what these small innocent

<sup>1</sup> In his essay "The Climate of History: Four Theses," Dipesh Chakrabarty discusses the possibility that climate change, specifically the increasing acidity of the ocean, will render political and economic downfall inescapable. He uses the phrase "ecological limits to capitalism" to emphasize that human greed will soon outcompete the ecosystem for resources, as it has in this story (336).

Dipesh Chakrabarty, "The Climate of History: Four Theses," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner (London: Routledge, Taylor & Francis Group, 2015), 335-336.

creatures did to deserve the elimination of their most basic rights. Their lives never mattered to the greedy biofuel industry. They were as good as dead all along. Dead. Silent. Stagnant.<sup>4</sup>

Camden awoke on her twentieth birthday with a jolt. A watery grave of a nightmare again, but this time her father made it to the surface in time. The algae usually held him down as she watched from below. Maybe this was her birthday gift. A hopeful story of survival to mark a new decade.

She threw on her usual loose-fitting clothes and clogs, sauntered down the creaky stairs, and rounded the corner into the dimly lit kitchen. The old heartbeat of her home was now only a room of tile and black painted cabinets. The sink dripped on balmy days and the refrigerator buzzed when the pantry door was open. Nobody knew why. Camden's father tried for years to figure it out but eventually gave up. The house was rumored to be haunted, and that was a good enough explanation.

Camden threw her oatmeal in the microwave and turned on the small television in the corner. The top stories were the same. Someone died, someone lived, and someone got married to the unexpected second cousin of the neighbor no one liked. "This is what the world has come to," thought Camden. Where was the latest ingenious invention? The next medical marvel? Even an interview with the sixth president in the last ten years would do. Camden could never remember his name. They all blurred together in shades of greed at this point. "Maybe if you actually did your damn job, my dream could've been real. Maybe I would have a decent birthday for once," muttered Camden, just loud enough for her mother to respond with a "hmm?"

<sup>4</sup> The question of rights for non-humans comes from Pablo Mukherjee's "Tomorrow There Will Be More of Us': Toxic Postcoloniality in Animal's People." During his discussion of ethics, he emphasizes that "the value of [the] environment and human and nonhuman lives... are expendable in the interest of accruing corporate profit" (220). Furthermore, he underscores how "the rights and privileges of humans are achieved explicitly at the expense of sufferings of the majority of nonhuman beings" (221). Camden likewise questions how nonhuman life can be overlooked in the quest for power.

Pablo Mukherjee, "Tomorrow There Will Be More of Us': Toxic Postcoloniality in Animal's People," in *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth M. DeLoughrey and George B. Handley (Oxford: Oxford University Press, 2011).

"Morning," Camden grumbled as she pulled her oatmeal out of the microwave and onto the grimy counter.

"Any birthday plans?" asked Ruth, hoisting her milk from the bottom drawer of the black refrigerator.

"Nope, just keeping it simple. I may run down to Wes's house for a drink, but other than that, nothing really." Wes had been Camden's best friend since birth. The two grew up in the mud and the rocks, searching for artifacts and building towns out of rotting wood and sand. He was a fellow curious mind.

"You know I don't like you drinking, Camden. I'd trust Wes with your life, but you know how I feel about alcohol. Your father wouldn't like it, either."

There it was. The father card. Besides the fact that Camden called him dad, not father, it annoyed her that her mother talked about him like he was still here to care. "Perfect," she responded. "I'll make sure to toast to him." Ruth glared from the rim of her glass of milk but knew there was no point in arguing. Camden was becoming her own woman. And that scared Ruth more than the news she was about to unload on her daughter.

"Honey, I know it's your birthday. And I wish I didn't have to tell you this now. But it's time." She sighed. "We've run out of your father's money. I can't do this alone anymore. You need to get a job within the next month, or this house is gone. I can't stand to lose another memory, Camden. Your mother just couldn't handle that."

There she went again with that proper-title shit. Camden threw her backpack over her shoulder, gave her mom a thumbs-up, and walked out the door.

This was actually the best start to a birthday that she could remember. Number fifteen was the worst. That was the year Ruth gave her a “real” bra and a dress and threw away her favorite pair of Birkenstocks. She remembers screaming, “They don’t even make those anymore, Ruth! And I don’t care if you think I would look nice in a dress. I like my jeans. Stop trying to make me be the girl you always wanted to be. It’s not my fault you weren’t smart enough to do it.”

That was the first time she had called her mom “Ruth.” She didn’t regret it, either. She meant every word. Camden had the brains and beauty her mother wished she had. Ruth only had the beauty, and she knew it was fading fast.

With a fire in her belly, Camden walked through the streets of Alabissi. The sky swarmed with summertime gnats and the silence of the dying town. The screen doors creaked on their hinges in the warm breeze and stirred childhood feelings of walking this route as a barefoot girl. Camden arrived at Wes’s beat-up bungalow on the west side of town in twenty minutes flat. She jiggled the old doorknob to the left, lifted it slightly out of socket, and pushed the cracked wooden slab ajar. “Wes, I’m here. Let’s drink.”

“Yup, be down in a sec,” rang Wes’s voice from the makeshift art loft he had created out of scrap metal and barn wood. The living room hid below his feet. Camden heard him throwing his tools back in his

grandpa's old toolbox. She remembered when they found it together in his parents' attic when they were ten. That was the start of the fall of a family and the rise of a creator.

Wes climbed down from the roof and landed with a thud on the concrete floor. "How ya doin' birthday girl? What'll ya have? I'm feeling some bourbon myself, but since it's only ten in the morning, how about some whiskey?" He grabbed two stout glasses and the square bottle of dark liquor from the cabinet above his paint-splattered sink. "Same shit, you idiot; this isn't the U.K.," retorted Camden. "But it all sounds great to me."

They plopped down on his cigarette-stained couch on the far end of the room, and went through the customary conversation. "How's life been?" "Did you see that new movie with that guy in it? You know, that guy?" "Have you talked to so-and-so lately?" Unexpectedly, Wes broke the trend and whispered, "Did you read about the research down at The Warehouse on the EnviGuy Tumblr last week?" Camden hadn't been on Tumblr in over a year. It made her think too much, which scared her. Besides, Tumblr was like Twitter. Barely anyone used them anymore, especially in the South. No one cared what they had to say down here. This was the land of the nobodies who couldn't manage their own lives. Now, in a sort of desperation, they relied on the national government for money, supplies, and survival. They were resident refugees.<sup>5</sup>

"No idea," she responded, polishing off her watery whiskey on ice.

"And why the hell are you whispering?"

He ignored her question completely. "EnviGuy says he's come up with

<sup>5</sup> This detail is an extension of Rob Nixon's emphasis on regional inequalities and his concept of "refugees in place" (19). Nixon believes that we must change our definition of displacement to include those who lose their resources and cultural identities while not physically changing locations. Camden feels separated from her culture and those who now control the survival of the American South.

Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Mass.: Harvard University Press, 2011).

a way to stop the sludge. Maybe not fix everything that's been done, but it would definitely make a dent. I think he's pretty convinced it'll work." Wes reached for his iDroid 8 on the makeshift coffee table made out of paint cans.

"You know I don't believe in that shit, Wes," she snorted. This EnviSci Guy, Evan Talbot by birth, was a radical blogger who Wes and Camden used to follow religiously in middle school. He was always posting new ideas and organizing protests that never seemed to go anywhere. Camden gave up on him after his fifth invention, the human hair absorption technique, failed miserably to rid the gulf of the algae bloom. She remembered watching him on TV with Wes after school one day in eighth grade. With his head held high, Evan assured the world that he would find a solution to the sludge. Apparently, Wes still believed him.

"See! Look," he exclaimed, shoving his phone in her face. She glanced at the screen, snickered, and turned away from his crazed stare. "Please Cam, just read this one post. It's like nothing he's ever done before. He's using their technology to fight fire with fire. Using modification for good. It's revolutionary!"

She reluctantly slid the phone from his trembling fingers and read. EnviSci Guy's homepage reminded her of a time when she believed anything was possible. She wanted to save the waters of her childhood. More importantly, she wanted to honor her father and remind him that nothing was completely his fault. As she read the Tumblr post, her eyes grew wide with wonder. Using

genetically altered bacteria to skim the surface in order to allow sunlight to reach the ocean's deeper layers? Manufacturing plankton to slowly digest the detritus that pervaded the murky waters and settled on the gulf's floor? How could Evan stand to use the same technology that caused this mess in the first place? But then again, would that be more rewarding? Like the worms in her garden, so small and elegant, could these bacteria and plankton make the kind of difference she so hoped to see in her world?

"Come on, Cam," Wes whispered intensely. "You know about this stuff. You know it could work. You could really help make a difference. Just go over there. See what they need, do some research, get their coffees in the morning, whatever. I'm sure they'd love to have someone on hand who actually knows what they're talking about." It was true. Camden had researched microscopic aquatic life her freshman year of high school. She became obsessed with the intricacy and beauty of these otherwise invisible systems. She was fascinated by how the minutest changes, over time, could amount to such massive outcomes.<sup>6</sup>

It hit her. This whole system, the accumulated effects of the bacteria and plankton cleanup crews, was an exact mirror of what the fuel industry did to the gulf. What it did to her father. In the present, they couldn't see the ongoing impacts. Everything seemed stagnant and manageable. Over time, however, the runoff did its worst without mercy. The stress also took its toll on her father's fragile mind. Tiny events can lead to big results. That was the key. Slow runoff gradually chipped away at the ecosystem and the psyche. A microscopic

<sup>6</sup> This idea of interdependency and intricate relationships echoes those described by Carl Folke in "Respecting Planetary Boundaries and Reconnecting to the Biosphere." Throughout the essay, Folke emphasizes the planetary boundary of ocean acidification and the intricate interdependencies of environmental changes.

Carl Folke, "Respecting Planetary Boundaries and Reconnecting to the Biosphere," in *Is Sustainability Still Possible?*, ed. Erik Assadourian, Thomas Prugh, and Linda Starke (Washington, DC: Island Press, 2013).



progression toward a life-changing problem.<sup>7</sup>

The next day Camden skipped church as usual, but this time she finally had a legitimate reason. She was starting her own religion of salvation. She walked down to the old financial district, which was never more than a street with a title. There stood the old familiar building she used to worship. The sign “EnviSci Guy” hung in the dusty window with its signature globe logo to the left. She knew they wouldn’t remember her, but she somehow felt like she was coming home for a dysfunctional Thanksgiving dinner. The crazy aunt would welcome her at the door with unbridled enthusiasm while the cousins screamed in the living room. The drunken uncle would be in the corner ready to grill her about future plans and the grandpa would already be asleep in his chair, just waiting for it all to be over with. A surge of excitement and nausea swam through her body. She was ready to make a difference – whatever that meant anymore.

She rested her hand on the steel doorknob. Prepared herself for middle school memories and the uncomfortable realization that she really was that angsty, moody teenager, like her mother said. She pressed her thumb onto the latch and pushed.

The dim office was exactly as she remembered it. Floor-to-ceiling hanging planters covered the westward wall. The warm smell of sage filled her nostrils and the standing fan in the right corner made sure you felt its presence. A poster, a false representation of the “beauty” of this planet, hung on the wall to her left. She wondered how many people actually believed this aesthetically pleasing lie of healthy

<sup>7</sup> This idea of slow change echoes Rob Nixon’s idea of slow violence, wherein Nixon considers how small changes over time have a sweeping and lasting impact. He defines slow violence as “a violence that occurs gradually and out of sight...of delayed destruction that is dispersed across time and space” (2). The timeline of chemical runoff is slow but can cause irreversible damage to an ecosystem in the long run.

Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Mass.: Harvard University Press, 2011).

forests and babbling streams.<sup>8</sup> Did they really think this was all the planet offered?<sup>9</sup> Did it even really offer what that poster suggested anymore? She shook the thoughts out of her already sage-clouded head and took a step forward.

A lanky girl in jeans and a tangerine tank top abruptly waltzed into the room from the back lab. "Hey there," she exclaimed in a deep Louisiana drawl. "How can I help you this mornin'?" Her beautifully tan skin and shoulder-length auburn hair fit the part of eco-secretary perfectly.

"Yeah, my name is Camden Stenson. I read y'all's article on the latest project with the bacteria and plankton modification. I was wonderin' if y'all needed any help." Camden realized her roots were showing and pursed her lips as if sipping sour lemonade.

"Let me go grab Evan real quick," said the girl as she flitted back into the lab. "I'm Jenn, by the way. I think I've seen you around."

"Right, yeah, I think so too," Camden lied, finding her way onto the grey director's chair against the window. Jenn scurried back into the fluorescent lights of the lab and returned with a familiar face. Evan stood just over six feet, the same height as Camden, with curly brown hair and piercing green eyes that made you want to listen to everything he said. At least that's what she thought when she was younger. Now, she saw the false confidence of so many genius yet failed plans glistening in those green pools.

"How can I help you?" asked Evan, flashing the familiar grin from his homepage. "Hey," Camden said with a surprising sense of self-assurance, "my name is Camden Stenson, and I'm interested in helping with your latest initiative. I studied micro-ecosystems in high school. I

<sup>8</sup> Ursula Heise contemplates the aesthetic appreciation of nature in "The Hitchhiker's Guide to Ecocriticism." There she debates whether aesthetic representations "bring one closer to it [the environment/ecosystem] or alienates one from it" (165). Camden believes that artistic portrayals of nature ignorantly shield us from the harm humanity causes to the planet.

Ursula K. Heise, "The Hitchhiker's Guide to Ecocriticism," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner (London: Routledge, Taylor & Francis Group, 2015).

<sup>9</sup> Aesthetic representations of nature are also discussed in Elaine Savory's "Toward a Caribbean Ecopoetics: Derek Walcott's Language of Plants." She writes of the "portrayal of an idyllic natural world, an Eden...a pastoral space...a nature somehow outside the fallen world of human politics and greed" (82). Camden recognizes that this picturesque poster offers an impractical representation separate from the damage humanity can cause and the misguided cultural patterns that enabled the destruction.

Elaine Savory, "Toward a Caribbean Ecopoetics: Derek Walcott's Language of Plants," in *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth M. DeLoughrey and George B. Handley (Oxford: Oxford University Press, 2011).

am passionate about this town and these waters. My father was a part of the fuel industry that caused this mess, and now that he's gone, I feel like it's my duty to do something. I would be willing to do anything. Research, work in the field, lobby up north, whatever you need."

What was happening to her? Why was she trying to sell herself to this blogger whose words had fallen on deaf ears for over a decade? She even doubted him. And here she was, trying to offer her soul in a few sentences, thinking he would see the passion behind her jaded eyes.

Evan looked confused and pleasantly surprised. "Well, that sure was an introduction! I'm glad to hear that you're a fan of my work, but I'm afraid we don't need any help. We have our science team set, our best lobbyists, and plenty of researchers on staff right now. But you could definitely help out with social media! Spread the word, encourage your friends, and follow our blog." He smiled as if he had given Camden the perfect gift, an offering with a sentimental sheen and a price tag just high enough to make it important.

Her eyes glowed with rage. "Listen, dude. I came all the way down here, basically against my best judgment, to offer you a chance to actually get something done. I used to worship the ground you walked on. I read every blog post, went to every protest, and even wrote the mayor, hell, the president, to get you out of jail for that whale stunt five years ago." She couldn't believe her courage. "But you could never get anything done. Your plans never worked. And it's because you don't have passionate people on your team. All you do is use people who want fame for two seconds without knowing the issues. If you want to

keep failing and never see a healthy planet again, fine. Keep making the same mistakes.”

She finally breathed her lungs full. “Thanks for your time, anyway,” she snarled, turning towards the door. As her hand touched the iron knob, she heard Evan’s mild voice say, “How does tomorrow look?”

That night, Camden’s mind played with the possibilities of her new adventure. She took her leftover lasagna dinner to her room, but didn’t taste a bite. Her plate turned into a canvas for her wild imagination. Her desk became a war zone of papers and markers, maps in different shades of pink and blue roughly representing her homeland. She couldn’t focus on anything but this one singular, uncertain idea.

Camden arrived the next morning in higher spirits than she was accustomed to. She flitted into the office, prepared to change the world before her lunch break. She had stayed up until 2:30 that morning researching bacteria and plankton colonies that could possibly do the job Evan’s vision required. The real problem was the decreased oxygen within the water that killed off food sources for organisms below the surface. The increasing acidity of the water caused by the infiltration of carbon dioxide, both from natural and manmade sources, created what scientists call a “dead zone.” Almost nothing could live in the hydrogen-heavy water. She was curious to see what Evan had in mind for this project. It almost seemed too big to tackle, but despite his many failures, Evan had a heart of gold and a brain of steel. A true visionary.

“Well, this is the basic plan,” Evan recited, like he was talking to a

boardroom full of musty old men in suits two inches too small. “I got hooked on the idea after attending a seminar presented by the aquatics center in D.C. We use this strain of bacteria we’ve been working on with the area’s top scientists. It’s genetically engineered to skim the dead algae off the surface of the water while manufacturing oxygen to be released into the ocean itself.” His eyes shone with excitement and his hands clasped each other as if preventing him from taking flight. “The plankton work from the bottom. They’re engineered to withstand acidic conditions far worse than what we have on our hands. They scoot along the shallow areas, digesting debris from sunken carcasses and releasing oxygen into the water. Maybe it’s not the most glamorous thing in the world, but we really think this might be the solution.” <sup>10</sup>

Contrary to his assumptions, Camden thought this was the most glamorous and beautiful plan she had ever heard. Simple, yet functional. Natural, yet modern. It all made sense. Why not use their own technology against them? Together, they could prove that with sensible minds behind the microscope, beneficial outcomes were possible. <sup>11</sup>

“We already have a sample of the bacteria and plankton in the works,” Evan explained. “Now we just need to sneak out there and test it on a small area of ocean.” Camden knew the dangers of his proposal. The government banned unauthorized water use “for fear of disrupting the ecosystem even further.”

“In actuality,” she remembered reading in one of Evan’s blog post from

<sup>10</sup> The environmental activist who favors technology mimics the character Anjel Earth in Geoffrey Landis’ short story “A Hotel in Antarctica.” Against the reader’s assumptions, Mr. Earth supports the construction of a hotel in Antarctica in order to bring awareness of the ecosystem’s interconnectedness and larger importance to the planet (281). Similarly, in this story Evan uses genetic modification, a previously frowned-upon technology, in an attempt to improve the gulf’s ecosystem instead of causing damage.

Geoffrey A. Landis, “A Hotel in Antarctica,” in *Hieroglyph: Stories and Visions for a Better Future*, ed. Ed Finn and Kathryn Cramer (New York: William Morrow/HarperCollins, 2014).

<sup>11</sup> Kim Stanley Robinson discusses the hope of using science and technology for good in the essay “Is It Too Late?” He argues that it is possible to develop a “clean and renewable suite of technologies” (374). Like Robinson, Camden and Evan believe that science may hold some of the answers to ecological problems.

Kim Stanley Robinson, “Is It Too Late?,” in *Is Sustainability Still Possible?*, ed. Erik Assadourian, Thomas Prugh, and Linda Starke (Washington, DC: Island Press, 2013).

about five years ago, “no more harm can be done. They’re just worried that someone will get hurt out there, get some sort of infection, and drop a lawsuit on them. If we can’t get out there, no progress will be made. We cannot stand to separate ourselves from the problem anymore. We’re just creating distance by ignoring the problem...or perhaps because we’ve idealized the ocean so much, we’re scared to see it for what it really is. Sick. And we can’t seem to admit that we caused it.”

Camden barely thought before exclaiming, “Let’s do it. I have nothing to lose. I know a hidden beach near my house that my dad used to take me to. It’ll be perfect.”

With a grin forming on the left side of his slender face, Evan replied, “I was hoping you’d say that.”

Camden and Evan loaded a “company” kayak in the bed of his 2016 Chevy truck. The vehicle rumbled to life in the Gulf of Mexico sunset. As they pulled out of the parking lot, Camden turned over her right shoulder to observe its beauty. Sometimes she forgot how much she loved this place.

They arrived at what Camden’s father used to call “Stenson Cove” around 8:30 that evening. She had never found out who owned this little patch of beach, and she hadn’t been back in almost three years. She felt like a simple walk wouldn’t do her return justice – she had spent so much time with her father on these sands. This mission was the perfect time to reincarnate those memories. This was for him. Evan pulled the kayak silently out of the bed. It was covered in stickers

that were peeling off from years of long road trips and police beatings. The kayak was bright orange, which seemed like a bad choice for a sneaky ocean mission. She was along for the ride, though, despite Evan's apparent lack of judgment.

They unloaded the gallon containers of bacteria and plankton from the backseat of the truck. The deceptively simple jugs of water were teeming with life and the possibility of a cleaner ocean. Each cup of water could hold thousands of microorganisms genetically trained to destroy the algal barrier between life and death. These tiny children of science could restore an ocean Camden only saw in her dreams. They were born to remind the world of the intricate interdependencies between human and nonhuman life. Everything humankind needs and desires ultimately comes from the earth, from both its living and nonliving parts. <sup>12</sup> She stared glassy-eyed as the kayak slid into the water with ease and scooted over the smooth surface of the algal bloom.

"Ready?" whispered Evan as he clamped down on the handle of the first gallon. "We went over the procedure, right?"

"Right," Camden answered. "You slowly pour the bacteria over the top while I funnel the plankton below with the air pump. That way, they'll sink to the bottom while the bacteria will float along the top with the algae."

"Exactly," smiled Evan, handing her the cold plastic vessel and air hose from behind his captain's bench. And then they began. Each one held half of the golden answer the

<sup>12</sup> In the introduction to the *Postcolonial Ecologies* collection, Elizabeth DeLoughrey and George Handley write that many of our social and political problems cannot be solved until we engage with the "more-than-human world" and consider the interdependencies between our own species and others (25). Camden acknowledges humanity's dependence on other living and nonliving entities.

Elizabeth DeLoughrey and George B. Handley, "Toward an Aesthetics of the Earth," in *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth M. DeLoughrey and George B. Handley (Oxford: Oxford University Press, 2011).



fishermen, economists, and environmentalists had been waiting on for so long. They emptied their respective jugs and glanced at each other through the orange hue of the kayak's luminescent reflection. She saw what she remembered from all those years past. A man who wasn't afraid to fail and make a fool of himself, as long as it was in the name of his home. Our home. Even if this technique worked, it would take months for signs to appear. They were finally functioning on the planet's timeline. And maybe that was the key to everything.

As they slowly rowed back to shore, no spotlight shone from the beach. No police sirens echoed from the banks. Evan and Camden were the only ones who existed in that moment. The outcome was unknown, but the possibilities were endless. She looked back at the miles-long bloom glowing an eerie green in the full moonlight. "Dad," she accidentally said aloud, "rest in peace."

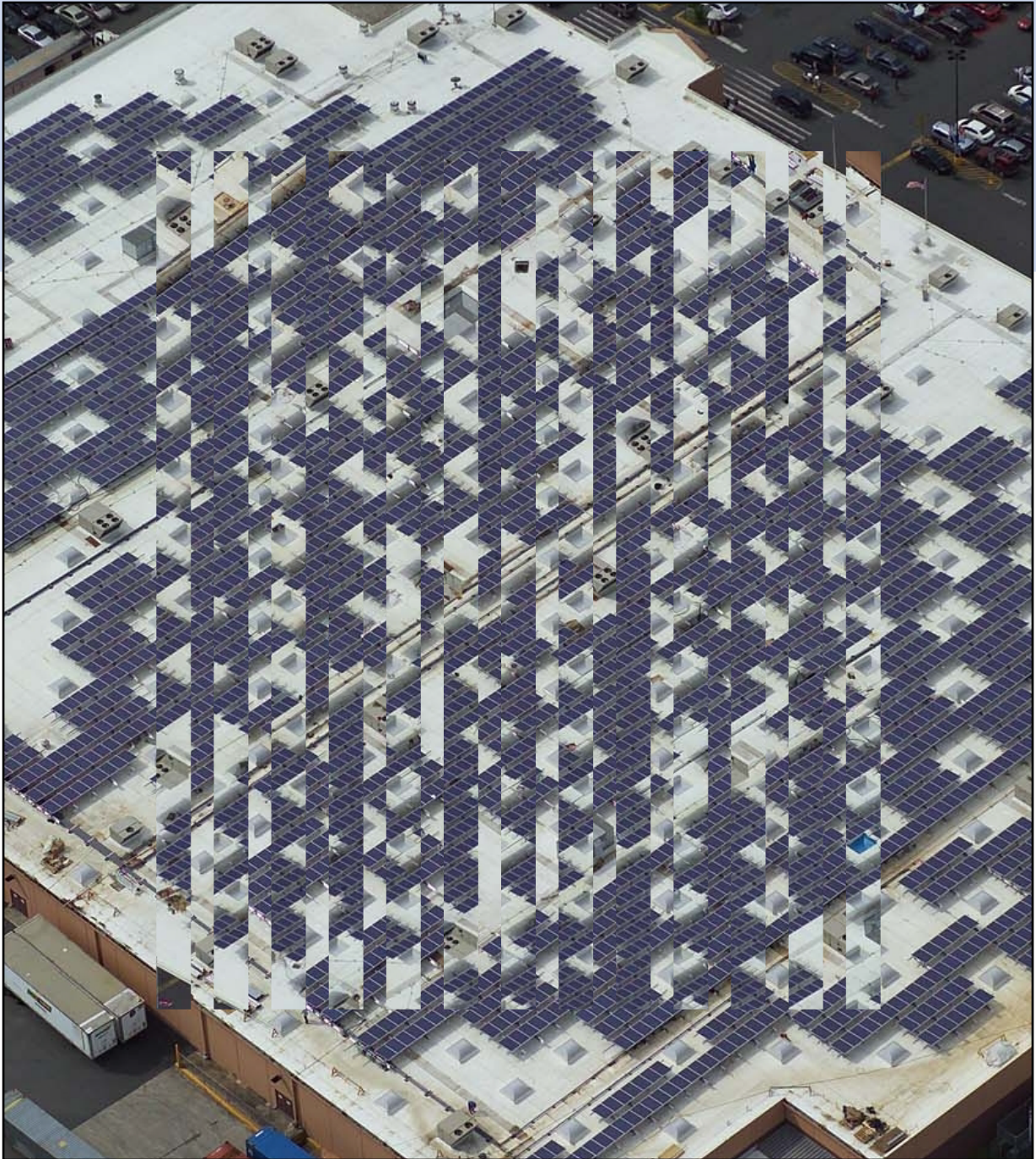


"Algal Bloom 10/03/2007" by Diana House, used under CC License. Derivative by Ariel Shamas.



# A World After Tomorrow

*Anna Peterson*



*"Solar Panels on Caguas, Puerto Rico Walmart" by Walmart, used under CC License. Derivative by Ariel Shamas.*

Hurricane woke to the sound of bells ringing and her smartclock announcing the date and time. It was 8:30am on Sunday, 1 May 2490. Opening the window of her family's high-rise apartment, she peered down onto the solar-paneled roadway one hundred and twenty-three floors below. A ceremonial procession crawled along, tiny ants making their way to City Center. Today was no ordinary day. Today was the two hundred and fiftieth anniversary of NewLife.

"Hurricane?" A knock at the door. Her father entered, saying, "Don't want to sleep through the big day now, do you?"

"I'm up, I'm up," she croaked. Her voice was always a little groggy first thing in the morning.

She got out of bed and turned to her dresser. She chose a petal pink-colored ultraviolet suit and sat down at the kitchen counter.

"Hurricane sweetie, don't forget it's your turn to adjust the solar panels today," her mother cooed, scrambling up a batch of eggs.

Hurricane let out a feigned groan and rose from her stool. She pretended to hate the responsibility of taking the hyper tube up to the roof to maintain the solar panels, but she secretly loved it. The solar panels provided the energy for the entire high-rise, and they had to

be cleaned off and rotated ever so slightly every day. Everyone in the building over the age of ten shared this responsibility. She was only fourteen, and still relished the novelty of it.

"Be right back," she said, sneaking a blueberry scone into her pocket and skipping away. The hyper tube used compressed air and solar power to propel her the last seventy-seven floors up to the roof.

As soon as she stepped out of the hyper tube, her suit began to change from petal pink to a deep magenta, harnessing the power of the sun to create a cooling effect. Ultraviolet suits were just one of the many necessary facts of life in NewLife. When humans damaged the ozone layer nearly beyond repair more than two hundred years ago, the creation of the ultraviolet suit prevented everyone from getting sunburns after only a few minutes of exposure, or from overheating in the sweltering city. <sup>1</sup>

As she approached the panels, a bee drone flew into view and ran a scan over her eye. <sup>2</sup> This security measure had scared her at first, but she knew that the bee drones were simply manned by government employees to ensure that no one tampered with the city's main source of energy.

"Welcome, Hurricane," the bee drone greeted her. As her eyes adjusted to the glare, she saw that only a bit of pollen from the small vertical garden had fallen onto the solar panels overnight. Hurricane took her time, carefully dusting them off before adjusting the angle of the panels ever so slightly and returning to the hyper tube.

<sup>1</sup> Carl Folke discusses nine environmental tipping points or thresholds, which humans are beginning to change or have changed past anticipated global levels. Two of these planetary boundaries are ozone depletion and climate change, which in the story create harsher living conditions as a result of changes to the environment brought about by human actions.

"Respecting Planetary Boundaries and Reconnecting to the Biosphere," in *State of the World 2013: Is Sustainability Still Possible?*, dir. Erik Assadourian and Tom Prugh, ed. Linda Starke (Washington, DC: Island Press, 2013), 25.

<sup>2</sup> The idea of using drones as watchers and guardians of the planet is explored in Brenda Cooper's short story "Elephant Angels." Cooper's human-controlled drones act as guardians for elephants who are threatened by poachers, much like the drones here that monitor the solar panels as well as the bear Landslide and her cubs.

"Elephant Angels," in *Hieroglyph*, ed. Ed Finn and Kathryn Cramer (New York: HarperCollins, 2014), 398-420.



When she returned to the apartment, her eggs were keeping warm in the oven. Everyone in the city received their food from farms just outside the city limits, and while every farmer's eggs were fresh, Twister's were by far her favorite.

In the next room she could hear her parents chatting quietly over the hum of one of their favorite TV programs. The program followed Landslide, a bear living in the Wild just outside of the farm limits, who had recently given birth to a pair of cubs. She sat down, and the three of them sat in silence as they watched Landslide and her cubs come into focus. The trials and travails of the bears were brought to them by a team of sparrow drones perched in the trees. Mesmerized, they watched as Landslide and the cubs lumbered along to a stream, where they proceeded to fish with their bare paws.<sup>3</sup>

After what felt like only a minute or two, the announcement they had been waiting for flashed across the screen. "All Citizens Report to City Center," an automated voice commanded.

"That's our cue," Hurricane's mother chirped. "Drought, sweetie, would you mind grabbing the keys? They're just over your shoulder."

"Sure thing," her father replied, locking the door as the three of them boarded the hyper tube.

They reached the street and began walking to City Center. There were no cars in the city; in fact, there were no vehicles at all. No trains or subways or anything except the trucks that brought food into the markets from the farms every morning. Just another result of

<sup>3</sup> Newitz plays with the idea of using the environment for popular entertainment in her short story, writing that you can watch nature channels on "The CityNet main page" and that you can see everything from "hawks' nests and bear dens to foxes" (244). In her story, these programs make up "one of the most popular channels" in a futuristic version of San Francisco powered entirely by solar energy (244).

Annalee Newitz, "Two Scenarios for the Future of Solar Energy," in *Hieroglyph*, ed. Ed Finn and Kathryn Cramer (New York: Harper Collins Publishers, 2014), 244.

the ozone depletion and climate change gifted by the twenty-first-century generation. The city was designed to be extremely walkable, with buildings expanding vertically, rather than outwards. Population growth was stalled at the replacement rate.

An ant drone crawled by Hurricane's mother's foot, repairing a panel on the road. "Tsunami, love, be careful," said Hurricane's father, shooting a pointed look at the ant drone.

There may not have been any real animals left in NewLife, but the drones certainly appeared lifelike. Humans and nature were kept separate: humans resided within the city limits or on the neighboring farms, and nature – well, nature in its most natural form – remained in the Wild.<sup>4</sup>

Hurricane's family and the other several million citizens of NewLife converged in City Center, NewLife's main plaza. Onlookers gathered close together, pushing towards City Hall. At the stroke of 10:00am, the bells were joined by a procession of trumpeters. The crowd burst into applause as a woman in an ultraviolet suit as white as acidified coral marched through the archway of City Hall and up to the podium.

"Good morning, citizens of NewLife," she boomed into the microphone.

"Good morning, Mayor Lightning," the crowd thundered.

"We are gathered here today to commemorate the two hundred and fiftieth anniversary of NewLife."

<sup>4</sup> Soper plays with the differing ways that humanity discusses and refers to nature. She states, "In its commonest and most fundamental sense, the term 'nature' refers to everything which is not human and distinguished from the work of humanity" (267). She suggests humans often view nature and people as separate and mutually exclusive, rather than understanding them as interdependent systems that influence each other and the rest of the planet.

Kate Soper, "The Discourses of Nature," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner (New York: Routledge, 2015), 267-277.

The crowd burst into hoots and whistles and cheers, cries of joy, applause.

"As always," Mayor Lightning bellowed, "we begin the annual celebration of our founding, our progress, and our future, with a look to our past."

With that, a video was projected onto City Hall, high above the Mayor's head for all to see.

"Citizens of NewLife," began a soothing female voice. "We live in a time of comfort, tranquility, and peace. But we must remember that humans did not always live this way. Three hundred years ago, humans were living out a long history marked by the imperial exploitation of nature.<sup>5</sup> We took what we needed from nature in order to survive, and then we took more. We cut down our forests and blew the tops off of our mountains. We allowed industry and agriculture to pollute our waterways, and used what freshwater was left in unsustainable ways.

We depleted the ozone layer that protected all organisms from the sun, and created a devastating increase in annual average temperatures. Some of our most aesthetically pleasing and environmentally critical animals were driven to extinction.<sup>6</sup> But it was not only other organisms that suffered."

At that moment, the screen switched to a map showing the world in the time before NewLife.<sup>7</sup>

<sup>5</sup> DeLoughrey and Handley talk largely about the history of the Earth and its story of exploitation. They discuss a "history of imperial exploitation of nature" in which natural resources are taken and used without regulation, and at unsustainable rates that are detrimental to other humans, other species, and the planet (12).

Elizabeth DeLoughrey and George Handley, "Introduction: Toward an Aesthetics of the Earth," in *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth DeLoughrey and George Handley (New York: Oxford University Press, 2011), 3-42.

<sup>6</sup> Folke's essay provides examples of human-induced changes to the planet. These changes fall under the categories of land use changes, global freshwater use, atmospheric aerosol loading, climate change, and loss of biodiversity.

Carl Folke, "Respecting Planetary Boundaries and Reconnecting to the Biosphere," in *State of the World 2013: Is Sustainability Still Possible?*, dir. Erik Assadourian and Tom Prugh, ed. Linda Starke (Washington, DC: Island Press, 2013), 19-27.

<sup>7</sup> A theme that Nixon highlights again and again is the importance of finding a method by which to expose environmental and human injustice that would otherwise remain unseen, and to give it a media presence in order to make such injustices visible and known. In this chapter, he discusses the political action of the Green Belt Movement planting trees to gain media coverage. In the same vein, here the politicians of NewLife direct community attention to such issues using available media technologies.

Rob Nixon, "Slow Violence, Gender, and the Environmentalism of the Poor," in *Slow Violence and the Environmentalism of the Poor*, (Cambridge: Harvard UP, 2013), 128-149.



"Selfish consumerism and the thoughtless use of resources caused strife among members of our own species. As demand for consumer products rose in the twentieth and twenty-first centuries, the wealthier nations of the global North outsourced more and more of their production to their less fortunate neighbors in the global South.<sup>8</sup>

"These less privileged humans fell victim to the ailments of consumerism and production. Many were morphed by chemical spills for which large manufacturers and corporations refused to claim responsibility.<sup>9</sup> The wealthy naturally bore less of a burden than the poor. They were able to flee from places where chemical spills occurred and to afford resources once the shortages began.<sup>10</sup> When the Water Wars broke out, it was the wealthy who claimed the water for themselves, and paid the poor to fight in their place.

"We are what remains of the wealthy. At the end of the Water Wars, our founding members showed great concern for the state of our planet. They decided that the dystopian society they had been living in had grown unsustainable, almost beyond the point of no return. And so, in response to the social and ecological brokenness of our world, our founders developed a vision with concern for the success of all life, both human and otherwise.<sup>11</sup>

<sup>8</sup> As Nixon explains, the phrase "global South" refers to the regions of Latin America and Africa that suffer from a history of environmental and human exploitation by the wealthier consumer nations that make up the global North, including the United States and Europe. The global South is a term used repeatedly by Nixon to represent these regions and populations as a whole.

Rob Nixon, "Introduction," in *Slow Violence and the Environmentalism of the Poor*, (Cambridge: Harvard UP, 2013), 18.

<sup>9</sup> Nixon's work follows the story of *Animal*, a character from the novel *Animal's People* by Indra Sinha, a being that is neither human or non-human who was morphed to walk on all fours by a chemical spill of Bhopal in India. The American corporation refused to take responsibility, demonstrating the power and possible corruption of limited liability corporations.

Rob Nixon, "Slow Violence, Neoliberalism, and the Environmental Picaresque," in *Slow Violence and the Environmentalism of the Poor*, (Cambridge: Harvard UP, 2013), 52.

<sup>10</sup> In Robinson's essay, he argues that the damage that humans cause to the planet will have unequal effects on the rich and poor: "the poor will suffer much more than the rich, both because the rich will be better able to afford adaptations to the degrading environment and because many of the poor live in the parts of the world that will be most hammered by climate change" (375).

Kim Robinson, "Is it too Late," in *State of the World 2013: Is sustainability Still Possible?*, dir. Erik Assadourian and Tom Prugh, ed. Linda Starke (Washington, DC: Island Press, 2013), 374-380.

<sup>11</sup> Rigby's closing argument in "Writing After Nature" calls for a response to the "social and ecological brokenness of our world and that we might combine concern with the flourishing of all life... with respect for the claims of human justice and freedom" (365).

Kate Rigby, "Writing After Nature," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, (New York: Routledge, 2015), 357-367.

"Theirs was a vision of a new city. Not just any city. Theirs was a city that grew upwards instead of outwards. A city that used only clean energy, where all citizens had equal responsibility for and access to resources. A city that was surrounded by farms, which were surrounded by the Wild. A city that kept nature and humans separate, so that one could not destroy the other. Where nature was treated not as a setting, but a character, with space to grow and change and exist on her own, free from human influence."<sup>12</sup>

"And so, our founders recruited engineers, farmers, educators, innovators, entrepreneurs, economists, historians, and investors. Together, they created a network of determined individuals, eventually evolving into a larger political party, A World After Tomorrow. And when the post-war election came, it was A World After Tomorrow's candidate, Acid Rain, who emerged victorious."<sup>13</sup>

"And so," intoned Mayor Lightning, "two hundred and fifty years ago, in 2240, NewLife was born."

The crowd, who had just moments ago held their breath as images of deforestation, beheaded rhinoceros, starving children, and other snapshots of slow violence flashed across the screen, now erupted into applause and cheers.<sup>14</sup>

"NewLife brings with it a promise for a better tomorrow, with citizens who work tirelessly today to conserve nature and improve human lives. We are a civilization of a world after tomorrow. We hold both great responsibility and great privilege."

Mayor Lightning finished by leading the citizens of NewLife in

<sup>12</sup>A major theme in Glotfelty's essay is the need to accept nature as not just a background for the human story but as a player and force in its own right. For Glotfelty, nature affects everything from culture to the economy—humans are not above its influence.

Cheryll Glotfelty, "Literary Studies in an Age of Environmental Crisis," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, (New York: Routledge, 2015), 120-130.

<sup>13</sup>Leach's essay details an action plan by which to incite environmental and political change. The steps, modeled in this short story, consist first of deliberating goals, then mobilizing citizens, followed by building networks, and ending with exploiting openings.

Melissa Leach, "Pathways to Sustainability: Building Political Strategies," in *State of the World 2013: Is Sustainability Still Possible?*, dir. Erik Assadourian and Tom Prugh, ed. Linda Starke (Washington, DC: Island Press, 2013), 236-242.

<sup>14</sup>Nixon uses the term "slow violence" throughout his work to refer to casualties "human and environmental...most likely not to be seen, not to be counted" (13). Slow violence typically affects the global South more than the global North, the poor more than the rich, and often lacks media and general public interest.

Rob Nixon, "Introduction," in *Slow Violence and the Environmentalism of the Poor*, (Cambridge: Harvard UP, 2013), 128-149.

chants of “NewLife will never forget!” and “A world after tomorrow!” The phrases followed Hurricane and her family all the way back to their apartment on the one hundred and twenty-third floor.

Buoyant and full of hope, Hurricane’s parents talked excitedly about the activities that would be happening in the weeks to follow.

In Tsunami’s environmental consulting firm, they would soon be conducting their annual conferences with engineers and accountants, investigating new ways to restore the ozone layer and decrease global warming. They would be sending bird drones to various regions in South America and Africa to search for signs of fertile soil, and checking up on the habitat restoration efforts since last NewLife Day.

Drought talked excitedly about the release of the annual Planetary Boundaries Report and the assignments he had planned for his Agroecology graduate students. They would be investigating the nitrogen cycle and the ways that agriculture could continue to restore nitrogen into the atmosphere, contrary to the way humans used to remove nitrogen from the atmosphere for synthetic fertilizers in the days before NewLife.<sup>15</sup>

Hurricane’s mother eventually interrupted her own excited musings to turn to her daughter, who for the last half hour or so had been very quiet. “Hurricane sweetheart, you’ve barely spoken a word since the ceremony. Is everything all right, dear?”

“I’m feeling awfully lightheaded. I think it was from standing for so long at City Center. I’m just going to take a moment and lie down.”

<sup>15</sup> The ideas discussed by Hurricane’s parents directly reflect approaches for adhering to and not exceeding the scientific community’s suggested planetary boundaries, which pertain to the depletion of the ozone layer, climate change, land use changes, and changes to the nitrogen cycle, for example. As shown in the story and article, when planetary boundaries are exceeded, they can cause many of these problems. Innovative solutions are required either to prevent humans from exceeding boundaries or to restore non-harmful levels.

Carl Folke, “Respecting Planetary Boundaries and Reconnecting to the Biosphere,” in *State of the World 2013: Is Sustainability Still Possible?*, dir. Erik Assadourian and Tom Prugh, ed. Linda Starke (Washington, DC: Island Press, 2013), 19-27.

Hurricane shuffled slowly back to her room, feigning exhaustion even though every muscle in her body twitched with anticipation. After closing the door behind her, she reached back into the depths of her dresser. Behind her ultraviolet suits, she felt her hand hit the smooth mahogany. After fumbling for a moment, she found the crack and opened a small door. The space was only about a centimeter deep, and no more than five inches wide. She pulled out a small photograph, laminated and stained beige with time.

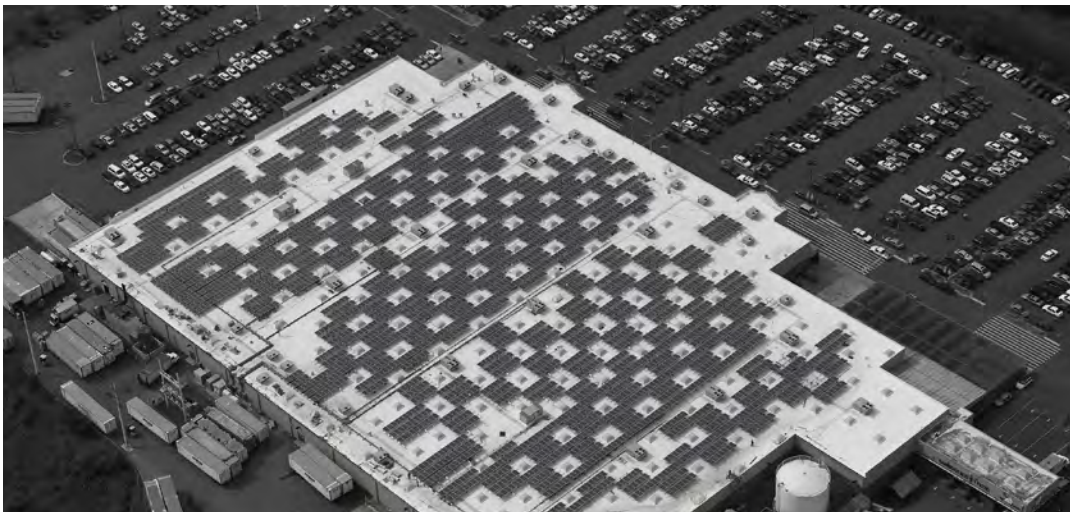
She had found the photograph in the library near the restricted section. A librarian had been pushing a cart full of photo albums labeled "RESTRICTED" in black block letters. Hurricane had watched the photograph fall off the cart and had gotten up from her chair to return it when the librarian slipped through the windowless double doors of the restricted section and the lock clicked behind her. Knowing that it was a crime to look at anything labeled "restricted" without government clearance, Hurricane had quickly slipped the photograph into her book bag and smuggled it home.

Hurricane had gazed at the photograph many times before, but the ceremony today shed new light on it. In the photograph stood a man and a woman. They did not wear ultraviolet suits; instead, they stood in the blinding sunlight in shorts and t-shirts. They were not surrounded by concrete buildings and solar-paneled roads and roofs, but sat in a meadow on a blanket, enjoying a meal from a basket. From the description on the back, Hurricane had learned that this was called a "picnic" and that the year of the photograph was 1992.

The Wild that lay beyond the farms was forbidden to all citizens of NewLife and the surrounding farms. Hurricane knew that it was for their sake, and the good of nature, but gazing at the photo always made her wonder if there could be an alternative. Was there a way to live with nature and not apart from it? Could there be a way to incorporate nature into their lives instead of fighting to keep it and NewLife pristine and separate? <sup>16</sup> She knew that such thoughts were considered treasonous and dangerous to all citizens of NewLife, but still, she couldn't help but wonder.

A knock at the door interrupted Hurricane's ponderings. "Hurricane love, how about some tea?" came her father's voice.

Hurricane hurriedly put the photograph back into its hiding place and painted a smile on her face. "Sounds great, Dad!" she responded, opening the door and returning to the kitchen. Within moments, the warmth of the tea in her stomach replaced thoughts of the Wild, and this time she allowed her parents' conversation to carry her away.



"Solar Panels on Caguas, Puerto Rico Walmart" by Walmart, used under CC License. Derivative by Ariel Shamas.

<sup>16</sup> One of the key questions that Heise asks at the beginning of her essay is, "Is it possible to return to more ecologically attuned ways of inhabiting nature, and what would be the cultural prerequisites for such a change?" (165). Hurricane, like Heise, realizes that there would be strong resistance to such an idea, but cannot help but wonder if it would provide a better alternative to the way that various cultures and societies currently operate.

Ursula Heise, "The Hitchhiker's Guide to Ecocriticism," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, (New York: Routledge, 2015), 164-177.



# Green with Empathy

*Elisa Edmondson*



*"Photosynthesis" by Takashi Hososhima, used under CC License. Derivative by Ariel Shamas.*

"Are you almost ready, darling? I'd like to go pick some raspberries for Tommy's family before the memorial service," said Damian.

Ezra nodded slowly, fidgeting with the twine on the basket that she chose from the top shelf. Perfect for raspberry picking. The rough twine pricked her fingers. She remembered the day Tommy made her and a family of cows intricate crowns of lilac and twine. She remembered the calves' squeals of delight and Tommy's face adorned with his lopsided masterpiece as they drank fresh, crisp water from the mountain stream.

Damian lightly tapped on Ezra's arm to bring her back from her thoughts. She had grown up entirely too fast. Damian was always struck by his daughter's foresight and pensiveness; but he worried that she would over-think herself to the point of delusion, even at the young age of twelve. Still, he was proud every day that his seed had created new life in the form of Ezra.

They stepped out from the cabin into the forest. The light rain from the morning had subsided, creating points of dew that sparkled on the grass. The blue jays chirped in a harmonious melody, and an elephant trumpeted with a complexity of emotions.<sup>1</sup> Damian looked up at the sky and stopped. "The whole household of the earth is honouring Tommy today."<sup>2</sup> Damian and Ezra's skin tingled with delight

<sup>1</sup> Brenda Cooper highlights the nuances of elephant emotions in her short story "Elephant Angels." Her story imagines an area in Africa where there are efforts to protect elephants against poaching – especially by participants in the ivory trade – with human-animal-technological teams wherein people work both with drones and on the ground with the elephants themselves.

Cooper, Brenda. "Elephant Angels." In *Hieroglyph: Stories and Visions for a Better Future*. New York: William Morrow / HarperCollins, 2014, 398-420.

<sup>2</sup> Kate Rigby critiques arbitrarily dividing "humans" from "nature" in her work, "Writing After Nature." She proposes a holistic view of the world that includes this terminology – the "whole household of the earth" – encompassing all biotic beings.

Rigby, Kate. "Writing After Nature." In *Ecocriticism: The Essential Reader*, edited by Ken Hiltner, New York: Routledge, 2015, 357-365.

from the raw solar power, and they knew that the beloved plants surrounding them felt the same precious energy through their own vacuoles.

Yet Ezra couldn't be shaken from her earlier thoughts on solar energy. She thought of the human who took Tommy's life. "It's hard to believe that our ancestors once manipulated the power of the sun to initiate light wars," said Ezra.<sup>3</sup>

"Ezra, I realize it's a hard day, but we must be strong for Tommy's family and the bunnies and the goats and for ourselves. Besides, despite this fluke with Tommy, humanity has come a long way. Killings like these are rare now; this hasn't always been the case. Besides, while it's true that humanity used light to kill, now we use it for life, quite literally," said Damian.

"Ezra, you, and I, and the other humans have an immense power to – just like plants – provide and consume our own food. Our chlorophyll, in tandem with that of the plants, is what makes our Earth so unique. It's the green of our chlorophyll but also the blue of the ocean; it's the compassionate animals that graze on the grass but it's also the grass that provides oxygen and food to the animals. We have been able to overcome the subject-object dualism that once separated humans from so-called 'nature.'<sup>4</sup> We're working together better than we ever have before. We no longer monopolize the energy of the sun; we don't throw around the word green to undermine its meaning.<sup>5</sup> Green is a necessity; green, like light, is life."

<sup>3</sup> This sentence acknowledges how the sun's energy was appropriated via Cold War propaganda to justify the use of atomic bombs and nuclear testing sites in exoticized islands. Elizabeth DeLoughrey highlights the work of Pacific authors native to these nuclear testing grounds, arguing that these authors' own solar paradigms and cultural nuances represent a debunking of instrumental rationality in the Atomic Age.

DeLoughrey, Elizabeth. "Heliotropes: Solar Ecologies and Pacific Radiations." In DeLoughrey, Elizabeth and Handley, George B. *Postcolonial Ecologies: Literatures of the Environment*. New York: Oxford University Press, 2011, 235-253.

<sup>4</sup> In "Ecology Without Nature," Timothy Morton argues that the chief stumbling block to environmental thinking is the image of nature itself. Morton investigates our ecological assumptions and explores the value of art in imagining environmental projects for the future.

Morton, Timothy. "Imagining Ecology Without Nature." In *Ecocriticism: The Essential Reader*. New York: Routledge, 2015, 237-258.

<sup>5</sup> Robert Engelman proposes that words such as "sustainable" and "green" are vague and unquantifiable adjectives that promote undefined environmental value. Engelman continues the discussion to "greenwashing," a vernacular term most often associated with corporate behavior.

Engelman, Robert. "Beyond Sustainable" In *State of the World 2013: Is Sustainability Still Possible?* Project directed by Erik Assadourian and Tom Prugh, edited by Linda Starke, Washington, DC: Island Press, 2013, 3-18.



Ezra took her father's emerald green hand inside of her celery-coloured one. "This is the perfect raspberry bush," she said, feeling a bit better. Her father had a knack for improving her mood even though he, as a historian, had to uncover stories that had been disappeared.<sup>6</sup> There was so much more that she wanted to know.

Once they had collected all of the raspberries, Ezra and Damian followed the stream, finally arriving at a beautiful gathering of humans and animals from different areas of the land. Upon their arrival, they hugged Tamira, Tommy's sister, tightly. "Thank you both. Tommy is resting in peace, a part of the earth now," she told them quietly. Ezra remembered Tommy's fur, black as charcoal and soft as a fresh daffodil petal on the first day of spring. She also remembered Tommy's innocent giggles when his claws would accidentally poke someone's back during a hug. It was no wonder the term "bear hugs" originated from Tommy's kind, given his unprecedented embrace, full of a unique power and friendliness.

The rest of Tommy's clan sat in a circle on the side of the field. After some time, Tommy's parents began pacing in circles, mourning the loss of their beloved son. The guests attempted to console the family, and the group exchanged stories about Tommy: his expert salmon catching skills, his infectious laughter, the moment he selflessly rescued Petra's cubs when they couldn't find their way in the dark across the river.

To end the ceremony, Tommy's family led the group in a moment of silence, followed by a series of heart-wrenching moans. The cubs

<sup>6</sup> Nixon discusses "offshore histories," those stories of local communities in the global South that were affected by "development" and environmental degradation instigated by the global North. Their stories were "disappeared" based on rhetoric driven by the economically dominant countries of the world. This is a defining concept in Nixon's *Global South Studies*.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge: Harvard University Press, 2011.

let out a piercing, high-pitched wail of woe. The humans and other animals were struck by the raw intensity of the moment. Then the rest of the group contributed in song, adding to the mourning and celebration. That night the sky was clear, and the stars of Ursa Major, the Great Bear, shone the brightest.

Later, as many animals slumbered after such a trying day, Damian could not fall asleep. He imagined that Tommy's family couldn't either. His mind wandered to his daughter and what she'd been alluding to all day, what for reasons of respect was not discussed at Tommy's memorial service: the story surrounding the murder.

The human who killed Tommy lives on the other side of the mountain, beside a stream that Tommy loved to visit to gather salmon for lunch. This human had been suffering emotionally and physically after the sudden death of his wife. Without children, he led a lonely life, and he began to deprive himself of sunlight in order to self-destruct. One day, when the human looked out of his window, he caught a glimpse of Tommy and a grizzly bear named Moe rolling around in the sweet, green grass in the beautiful sunshine. Feelings of utter sadness, rage, and jealousy enveloped the human at this sight of what he perceived to be love. Missing his wife uncontrollably, he ran down to his basement, where he kept the old family rifle. The human was told to never use this rifle; these weapons created much destruction in the past, and it was illegal to use rifles on the land. Yet in that moment, the human lost control.

After realizing he was holding the rifle the wrong way, the human pierced Tommy with bullets five times, the shots scaring off every

creature within a five-mile radius. Moe stood there stunned afterwards, as did the human. He dragged himself back inside his house, and didn't emerge until he was arrested by the authorities. In this forest, it is illegal for humans to kill animals because there is no reason for it; humans photosynthesize and therefore no longer eat meat. It is also illegal to use animals for any other purpose. Yet other animals are still permitted to hunt according to their hierarchies of predator and prey to respect and continue the circle of life.

Damian sat down and empathized with all parties involved: the human, Moe, Tommy. Tommy's was the first human-initiated animal death in over three hundred years. Centuries ago, human agency on earth had far surpassed a safe operating space for the planet.<sup>7</sup> Humanity was embroiled in a war between what was arbitrarily named the global North and the global South, wherein wealthy, western countries were using an unprecedented amount of resources.<sup>8</sup> A dense layer of smog covered the entire earth and the Arctic poles flooded, causing a violent wave of tsunamis in the tips of the southern and northern hemispheres. Poisonous landfills expanded all over the world, but especially in less developed countries, killing off thousands of species. Deforestation obliterated ecosystems, and pesticides from farming left the soil near a point of no return. As a result of the light wars, radiation permeated every living creature's body, leading to horrifying cancers, malnutrition, and pain.<sup>9</sup>

<sup>7</sup> Folke outlines nine planetary boundaries for critical biophysical processes in the Earth's system. These are concrete boundaries determine where human agency in the Anthropocene age that has reached a point beyond safety.

Folke, Carl. "Respecting Planetary Boundaries and Reconnecting to the Biosphere." *In State of the World 2013: Is Sustainability Still Possible?* Project directed by Erik Assadourian and Tom Prugh, edited by Linda Starke. Washington, DC: Island Press, 2013, 19-27.

<sup>8</sup> Rob Nixon specializes in Global South Studies, an extension of post-colonial ecocriticism that addresses the discrepancies and hierarchies between wealthy countries and those who are victimized to expedite economic development and resource imperialism.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge: Harvard University Press, 2011.

<sup>9</sup> Elizabeth DeLoughrey discusses the result of nuclear explosions on the residents of nuclear testing sites such as Bikini and Enewetak, comparing them to the Marshall Islanders who subsequently and involuntarily carried "mementos of light" in the form of radioactive cesium, iodine, and strontium.

DeLoughrey, Elizabeth. "Heliotropes: Solar Ecologies and Pacific Radiations." In DeLoughrey, Elizabeth and Handley, George B. *Postcolonial Ecologies: Literatures of the Environment*. New York: Oxford University Press, 2011, 235-253.

After one hundred years of collaborative research, a group of scientists developed a reset function, initiated via satellite, that would eradicate the damage done to earth, returning the planet to its state at the beginning of the Holocene period. This shift would radically de-centralize human agency.

Damian was startled by sudden footsteps at his door. Little Ezra walked in, rubbing her eyes. It looked like she hadn't gotten much sleep either. He patted the bed and she climbed in.

"What were you thinking about? Tommy?" she asked, as if she had read her father's mind.

Damian let out a deep sigh, realizing that this could be the one of the most important conversations he would ever have with his daughter.

"Ezra, do you know why Tommy's death is so shocking?"

"Well, it's illegal for humans to kill animals," she replied, holding him tightly.

"Yes, very good. That is true. But I think now I need to explain to you how this law came about. Have you ever thought about that?"

"Well, of course I have. I think about it every day."

"It's time that you knew," he replied. "Let's start with why we're able to photosynthesize. Believe it or not, we haven't always lived this way. It had been discovered that instead of eating meat and dairy, switching

to a plant-based diet was the best way to lessen humankind's impact on the planet. But this was a nearly impossible paradigm to change. Even though humans had all of the facts about what they called veganism, or a diet without animal-based products, and everyone knew it was healthy, ethical, and environmentally friendly, the humans didn't want to sacrifice the way they lived. Humans could operate a mechanical vehicle called a "car" and bite into a hamburger, a patty made out of cow's meat, that was handed to them through a window. And the way they produced this meat was more horrible than you would ever believe.

"Ken the pig's ancestors and the rest of the early pigs, for example, were the last surviving inhabitants of what were called factory farms, where pigs, cows, and chickens were forcefully bred with medicines that made them grow two and a half times their normal size and at double the speed. Most humans viewed these beings solely as sources of food. Ken's ancestors were confined in crates barely large enough to fit their abnormally large bodies. They began nervously chewing on the crates and getting infections from sitting in their own manure for too long. The sows were separated violently from their babies, and babies, after only seventeen to twenty days of living, were castrated and had part of their tails removed.<sup>10</sup>

"And of course you know Marty the hen, our next door neighbour. Her ancestors endured similar suffering. In their situation, however, they had to hear of all of their male offspring being grated alive or gassed because the male chicks had no value to what the humans called the egg industry: the global market that sold chickens' eggs. These

<sup>10</sup> *Farm Sanctuary is a non-profit organization that rescues animals from factory farms to promote vegan lifestyles and animal rights as well as an awareness of practices of the meat and dairy industries.*

*"Someone Not Something." Farm Sanctuary. April 8, 2014. Accessed April 20, 2015. <http://www.farmsanctuary.org/learn/someone-not-something>.*

practices emitted massive amounts of pollution into the environment; these “livestock,” as they were called, that humans unnaturally and unjustly bred produced more carbon dioxide, methane, and other gases than mechanical transportation – more than cars.

Humans, as a result of their dietary choices, were becoming very overweight, plagued by diseases of every kind. They alienated themselves by putting animals and other humans into a rigid hierarchy. Americans looked down on the Chinese for eating cats, whereas the beef – the cows’ meat I mentioned earlier – that was so popular and prized in the United States was forbidden in the country of India for religious reasons.”

Ezra’s eyes had been wide throughout the duration of her father’s words. “Hmm, that doesn’t seem to make a lot of sense. Why would people produce food in such a cruel manner, when the Earth already provides ample food for us? Why would they contribute unhealthy, tainted chemicals to the earth so that it eventually becomes unable to produce anything at all?” she asked.

“Good thought, sweetie,” said Damian. “This is why the hundred scientists created a reset button; that was the only option for saving the earth. The United States, for example, was wasting forty percent of the food it produced, and innovation and technology weren’t enough to tackle that problem. Humans were forced to either locate to Mars or take a pill to be able to engage in photosynthesis. Our family thought that since a plant-based diet wasn’t going to appeal to everyone, in some way becoming a plant would help the future generations most.

Our ancestors had friends who ran away to Mars, but I haven't heard much about how they have managed there. Chances are, they've created the same destruction they wrought on earth.

"This biological change within us eventually created a healthy paradigm shift in humans. Because they were no longer dependent on exploiting and eating animals to 'survive,' humans recognized the interdependency of organisms that subsisted directly from this Earth. Performing photosynthesis allowed us to see that sugars provided food and that the oxygen sweetened the atmosphere, and that together they allowed for a long and slow blooming of life that eventually included many organisms - humans among them. We were able to develop a more inclusive narrative that didn't objectify nature in the old human terms of a 'Garden of Eden' or 'hideous wilderness.'<sup>11</sup> This interdependency has become part of our way of life, and it's the reason why Tommy's death struck a chord in all of us. This was the first time in a long time that I had thought about the differentiation between humans and animals; it isn't usually necessary because we've all been equal in the society we have now. But when a human kills an animal and a disruption occurs, it's sometimes impossible not to think of where it all started."

"There was also a time when animals were killed for reasons other than just food, right?" asked Ezra.

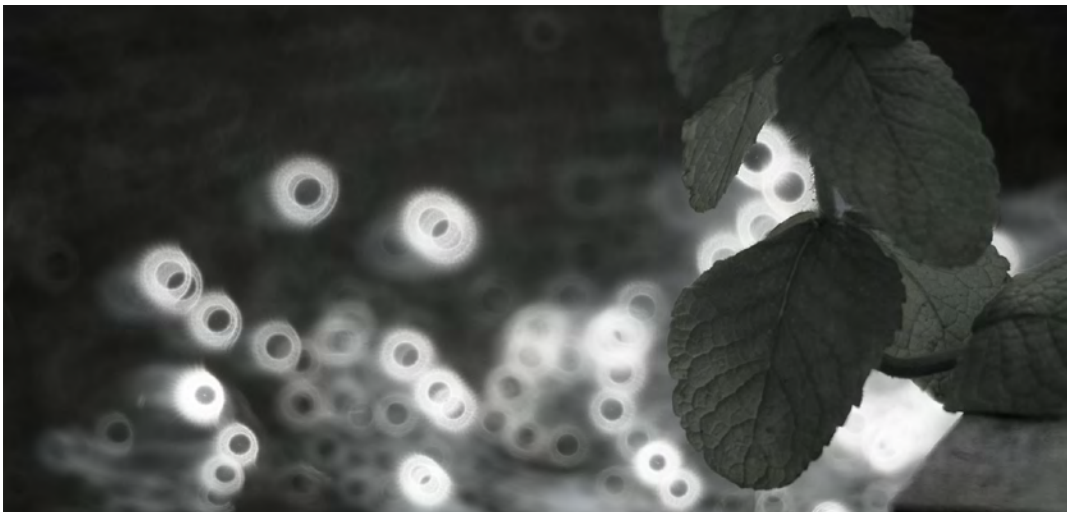
"Yes, honey, animals were skinned for their fur, killed for sport, killed through deforestation or polluted seas, via animal testing, or neglected as pets or zoo animals. It's really wonderful that we've moved on from

<sup>11</sup> Leo Marx comments on the grand narrative that humans perpetuated to justify the objectification of the land at nature's expense, implementing a dichotomy of humans versus nature. Similar to Timothy Morton's critique of the use of the term, "nature," Marx believed that the very language that was used to describe the land affected our use of it.

Marx, Leo. "Shakespeare's American Fable." In *Ecocriticism: The Essential Reader*, edited by Ken Hiltner. New York: Routledge, 2015, 3-9.

these practices. Our treatment of animals was obviously detrimental to the animals, but it also reflected on us very badly.”

Ezra nuzzled her father’s shoulder. “You know, I’m so sad that Tommy died. I’m sad for his family. I’m even sad for the human who was in a bad enough state to kill him. But attending that memorial service made me realize something wonderful: not one animal treated us differently at that event because we were human.” And with that, Ezra and Damian, for the first time in three days, drifted off to a good night’s rest.



*“Photosynthesis” by Takashi Hososhima, used under CC License. Derivative by Ariel Shamas.*



# The Collectives

*Elly Gay*



*"My fire - kindling" by kcxid, used under CC License. Derivative by Ariel Shamas.*

She stared from the peak of her small mountain—a hill, really, in comparison to the other ancient beasts that sprawled out in all directions. The blue mist disguised the valley floor and confused her senses. How far up was she? Was there a bottom beneath the cool fog? Would she survive if she jumped, or was the cruel trick of the natural world that there really was no end? Just a slow fall that would progress into a rapid tumbling of time, until there was nothing left to hold onto except the hope that the end would be near amid the uncertain descent. She thought about jumping into that blue cloud. The mist had already enveloped her, giving her chills, forming small droplets of liquid air on her arm.

A gust of wind jolted her back to the task at hand. She breathed it in one last time—the purple orange of the dawning sky, the blue mist that began to slowly burn away, revealing verdant greens below. Most of all, she breathed in the mountains with their silent majesty, and to honor them, she silently thanked them, because silence was apparently the only way to deal with mountains. The government had been silent to the protest of the people, ignoring their cries until humanity realized its fate, realized that it had begun its own slow descent. The wondrous mountains, greater than the human race could ever dream to be, were the first to feel our jealousy, to feel our mistakes. She would not let them go like this.

She breathed it in one last time, longing to somehow be a part of it all, because humans could never be part of it, and they seemed fine with that. The sun rose. The mist fell. An eruption began inside her soul and she screamed out to the mountains. She screamed a cry of thanks, of apology, of forgiveness. And with her scream the eruption continued, until the majestic beasts crumpled—one detonation seemed to chase after another. If we fall, everything falls with us. She gazed on as the very threads of time seemed to cry out with fearsome rumbling. The sickening noise of tumbling rock, screaming with unnatural sadness, rang into the valley. Rang into the pit. Rang into a void of lost hope. And in that instant, the last National Park had been eliminated.

Elliot jolted awake. Sunlight danced through the window, giving her energy to stretch and rise from the barrack. Another night, another memory. It was a monotonous ritual that comprised her existence. She began wondering when such dreams would end and a different reality might begin, when nightmares would just be confined to sleep. Her memory of the valley was the most painful. That experience had inspired her to apply for Collective. It seemed as if the world itself were falling. Society had finally pushed past its safe environmental ceiling.<sup>1</sup> Humanity took the necessary steps to insure its survival, of course, so when the easy fossil fuel reserves had finally been exhausted, and chaos had broken out in the Middle East, the United States turned to a final hope—finding reserves wherever possible. Nothing was safe: not housing tracts, historic landmarks, or military graveyards, and certainly not National Parks.

<sup>1</sup> In *Slow Violence and the Environmentalism of the Poor*, Rob Nixon introduces the concept of slow violence as a kind of “delayed destruction” (2). It marks the gradual accumulation of an unseen yet deleterious force that can have dire consequences, such as the less visible or difficult to monitor dynamics of climate change. Although difficult for the public to apprehend, the cumulative effects of slow violence produce catastrophic situations for the entire globe, sparking environmental and social justice problems that cross borders, problems with slow and ongoing ramifications that affect those with and those without.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.

Collective Universities had sprung up around the world as the first step in solving the severe energy shortages and environmental issues that threatened all nations. Elliot had been assigned to Collective Greenville, but the city that welcomed her was anything but green. It had been once, back in the era of Wasted Time, when *progress* was just another word for *destruction*, and all innovations made to strengthen our future were just whispers against the screaming problems that humanity faced in the present.<sup>2</sup> The city now was just a wasteland, a tangible representation of the accumulated effects of climate change. Eventually the effects worked their way into all aspects of human life, dissolving the boundaries between advantaged and disadvantaged, the resource rich and the environmentally poor, until everyone and everything was equally endangered. Luckily the outer wall protected the institution and its students, forming a giant ring around the forest that encircled the campus. The environmentally poor inhabitants of the area would not be able to infiltrate and mix with the Collectives.<sup>3</sup>

That mountain dream always left Elliot feeling reflective, especially about her acceptance into Collective U. The Collectives were elite groups of students, selected to invent a way out of the disasters to which society had committed itself. The thinking behind the project was that if the right technology were invented, it could still save the Earth. The natural world would not conquer them; they would find a way to combat its manifold threats.<sup>4</sup>

<sup>2</sup> "Progress instead of destruction" is a phrase borrowed from Prince Ea's video "Dear Future Generations: Sorry." Released on Earth Day, the film is part of a movement called We Stand For Trees. Almost immediately, the video went viral, receiving over thirty-five million views in forty-eight hours. It is housed by the We Stand for Trees website and can be found here: <https://www.youtube.com/watch?v=pN2WI5KqJDY>.

"Rapper Prince Ea's Viral Video Tells Future Generations 'Sorry'". EcoWatch. EcoWatch, 2015. <http://ecowatch.com/2015/04/22/prince-ea-viral-video/>

<sup>3</sup> The idea of humanity self-stratifying reflects Nixon's examination of vertical and horizontal inequalities, which widen the gap between the rich and poor, often simultaneously widening the tangible distance between the groups, and which are routinely justified by governmental interest (70).

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.

<sup>4</sup> In Elizabeth DeLoughrey's "Heliotropes: Solar Ecologies and Pacific Radiations," she writes that what "men want to learn from nature is how to use it, in order wholly to dominate it and other men" (239). This statement represents one of the main themes of her essay. She demonstrates this through her argument that the Age of Ecology and the Atomic Age represent a parallel relationship between militarism and the study of the environment (238).

DeLoughrey, Elizabeth. "Heliotropes: Solar Ecologies and Pacific Radiations." In *Postcolonial Ecologies: Literature of the Environment*, ed. Elizabeth DeLoughrey and George B. Handley. Oxford: Oxford University Press, 2011: 235-253.

The robotic voice of her Orientation Leader reverberated in her head: *It is a complicated problem to solve, but divide and conquer! Remember Collective, We Can!* So divide they did. It seemed that society's way of living had slowly manifested into an economic and environmental disaster. Similarly, the Collective's division had steadily evolved into a truly segregated work force, not just in Collective Greenville, but also in Universities around the globe.<sup>5</sup>

Suddenly, the beep of her uWatch reminded her that it was time to go to the Connection Center to gather reports. She hurried off, feeling guilty about wasting time to reflect. Collectives did not linger.

Elliot walked up to the outside of the oval building that housed the Connection Center. She held up her wrist to the scanner, and it granted her access. The individual cubicles that comprised the Center were alive with talk. Collectives from around the world critiqued each other, sharing their latest findings and failures. At least they seemed to be—all the good information was really stored in the deep hard drives of their brains. Cary emerged from one of the cubicles and jogged over to her. "Ayy dude, where you been? You just missed this conversation I had with a Collective from Hong Kong. It was a hell of a talk with him. I tried to be open and explain my findings, but I wasn't going to tell him everything if he kept withholding information," he laughed.

"Let's hope we find the solution before they do. The U.S. will stop at nothing to hold the solution and the power."

<sup>5</sup> This plotline registers Rob Nixon's concept of slow violence. This gradual accumulation of violence is usually a human-caused environmental disaster that in the end circles around to affect its creators, humans. In this story, human-induced climate change has caused society to conduct all education and research solely to find a solution to the environmental problems. However, emulating the manner of slow violence, their persistence in finding a solution has caused them to gradually be more and more separated, especially at these Universities. This blind "progress" has created a situation so dire that the various Collectives barely communicate with one another.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.

"Solution, power, it's the same thing, right? Hey, we're on track, but if I get traded to China I will really lose my shit. I'd rather get traded to Russia or maybe somewhere tropical."

Elliot smiled in an effort to push away her feelings on trading.<sup>6</sup> She still had two more years at Collective Greenville. If she produced no solution in that time, she would be traded off to another country to try research there. As if on command, the robotic voice swam back into her mind: *Just think of it as another opportunity for collaboration!* It was more like trading livestock than taking advantage of an opportunity, she thought.

Elliot and Cary walked towards the far end of the facility, looking for their daily assignments. "Ohhh crap. Crap, crap, crap..." Cary mumbled, as a Soil began walking towards them. As he approached, Cary started talking to the Soil in a manner that was well before his time. "Hey man, we can get our gatherings, you can get your gatherings, and we can all have love in Mother Nature. Nothing else needs to be done."

The Soil smirked and pushed Cary aside. He turned towards Elliot. "You look upset today. Not finding the solution, are you? You Plants and your hippie-ass perspective barely accomplish shit."

She swayed, the insults sparking fire within her soul, but on the outside she remained calm. "You can't hold me down, and that drives you crazy. So just get out of my way and maybe there'll be clean air to breathe tomorrow," she responded, in a lighthearted tone.

<sup>6</sup> The story's trading system aligns with Nixon's notion of "dispensable citizens" (17), whereby consumerist developed nations prey on the less developed, resource-rich countries, treating the citizens as disposable entities that can be quickly replaced to fulfill the need of resource extraction. The concept is reflected in the story: when one Collective falls, another will take its place.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.



She grabbed Cary's shoulder and started to swivel, but the Soil clutched her wrist, his thumb pressing down on her delicate black leaf tattoo. "When we find the solution, you'll be nothing but a leaf beneath a stone." He released her wrist and edged away, leaving a small red impression on her tattoo.

Cary bounced around. "Oh yeah, I definitely intimidated him. Next time let's work out a routine—like choreographed taekwondo to take him down." Elliot rolled her eyes and Cary grabbed their assignments so they could head towards Joint Dining.<sup>7</sup>

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Their walk should have been casual as usual. Collective Greenville was in full bloom, birds flew through the blue sky, and the giant forest that encircled the entire campus buzzed with life, or at least seemed to. But today Elliot was distracted. She drifted in and out of Cary's monologue: "No dude, I am telling you: all the good weed is seriously endangered. You can't get the same high off of uPlant, and I think it causes serious health problems..." She nodded, transfixed by how his leaf tattoo almost seemed to flutter through the air in conjunction with his wild hand movements.

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Elliot and Cary reached the lobby of Joint Dining and immediately veered to the right to enter the cafeteria through their assigned portal. They maneuvered through the crowd, almost colliding with a group of Airs leaning against the wall. The eatery's lobby was like some sort of cordoned-off human labyrinth, filled with similar people forever

<sup>7</sup> The government-constructed facilities aimed at fostering this twisted idea of "sustainability" were inspired by "Pathways to Sustainability: Building Political Strategies." Leach questions alternative patterns to living with nature, arguing that "seeking true sustainability requires addressing far more precisely who exactly 'we' are in different contexts and whose needs and goals are at stake" (235). This critical self-reflection is entirely missing from the paradigm in this story. As the main character remembers, *Collectives* have no time for lingering.

Leach, Melissa. "Pathways to Sustainability: Building Political Strategies". *State of the World 2013: Is Sustainability Still Possible?* Worldwatch Institute, 2013: 234-243.

divided. The Water entrance was starting to clog up; the scanner was probably slow since it was lunch rush. It didn't seem to bother the Waters too much; they laughed and swayed with each other in fluid movements.

Elliot and Cary arrived at their entrance. One at a time they held their wrists up to the scanner, where the green light made their tattoos look momentarily lifelike. Once they were beeped in, they entered a room that was alive with sound and movement. Familiar tattoos flashed as their fellow Plant Collectives waved greetings. Elliot gazed around. Some of the Plants were joking around with each other, trying to add humor and smiles to their dire situation. Others were more serious, talking in hushed whispers about their recent gatherings, trying to devise any number of solutions, careful to stay out of earshot of the opposing Collectives. Various tables followed a similar pattern. Separate groups, a government-constructed idea. That monotone voice again: *This is Joint Dining. Please sit at your assigned table and refrain from cross-mingling! Remember, divide and conquer. The Collective Crews represent what is most important in nature!*<sup>8</sup>

She caught sight of the Soil and thought back to the first time she encountered him. The small outline of a leaf was slightly raised on her wrist. It was so tiny, but the sting was sharp. She was proud of the leaf; it symbolized her place within the compound. She was a Plant Collective and the tattoo reminded everyone she encountered of it. She was examining the leaf when the door burst open. Several Plants entered; their leaves had not stung for a long time. They grabbed Elliot

<sup>8</sup> Ursula K. Heise's "The Hitchhiker's Guide to Ecocriticism" emphasizes how an "aesthetic appreciation of nature brings one closest to it or alienates one from it" (164). Heise's examination of our use of the term "nature" reveals that humans often view the natural world as a separate entity from themselves. This makes it difficult to create a peaceful existence, because the "natural world" is portrayed as a world in which we have no role. Heise continues on this theme, elaborating that humanity aims to comprehend the natural world only scientifically, "to manipulate it technologically and exploit it economically," thus creating a separate human "sphere" (167). She concludes that this act endangers the land, positioning it as only a material resource, which in the long term leads to the destruction of humanity.

Heise, Ursula K. "The Hitchhiker's Guide to Ecocriticism". *Ecocriticism: The Essential Reader*, ed. Ken Hiltner. New York: Routledge, 2015: 159-163.

and the three other girls in her room. "All right, freshmen! Time to prove yourself worthy and primed for world domination! Go into the uForest and return with a Guaiacum,<sup>9</sup> the loudest plant there is. First one back doesn't have to associate with any other Collective Crews for the rest of the week!" The Plant freshman looked about at one another with trepidation. What would the losers have to do for the other Crew? Especially a Soil?

They took off into the darkness of the humming forest. Elliot had seen the Guaiacum first, but the Soil had arrived seconds later. He wanted it too, of course; obviously his intention was to sabotage her. But the Guaiacum was her territory, not his. It was hers to care for. They both lunged towards it, but she was too fast. As she ripped the plant from the grid, small sparks flew and the Guaiacum screamed out. She briefly wondered what lie beneath the synthetic soil, the concrete.... Her thoughts were cut short as the Soil lunged toward her legs. She reacted quickly, kicking dirt in his face, and took off. The feeling of victory was overwhelming. She had won, had conquered, but then she suddenly became aware of a cold fluid that covered her hands. Pseudo-cytoplasmic liquid was the lifeblood of the uPlant. It seeped over her fingers, and the light faded from the plant's roots. She later tossed it into the basement incinerator. The professors could not discover this atrocity.

This memory, along with her dream from the past night and the events of the day, flooded into her brain, drowning her previously established truths. Everything seemed different now. She twisted around and watched as these truths changed form and reality revealed itself: the division of Joint Dining, the loud silence between groups, the distance.

<sup>9</sup> *The Guaiacum officinale is an endangered plant known for its strength and resilience. It was historically used as a remedy for various afflictions. According to the United States Botanic Garden, it is sometimes referred to as the "Tree of Life."*

*"Tree of Life or Lignum Vitae". United States Botanic Garden Conservatory. <http://www.usbg.gov/plants/tree-life-or-lignum-vitae>.*

They all melded together until the room spun. She rose like a shadowy flower desperate for the sun, and headed for the forest. She needed clarity, peace, and her gatherings.

The fabricated forest was her lab space. The data sheet told her which samples to gather for the day, while the trees provided cover from her own thoughts. The low hum of their artificial bodies might indicate the falsity of their presence, but she still enjoyed the buzzing sound. It managed to slow her heartbeat and worry. But frustration rose; the plant she was studying was so stubborn. No matter which way she tried to collect a sample, it harmed the plant. It was just too small. She tried to remove one of its leaves, a part of its stem, even a piece of root, but the plant yelled out an automated response to her intrusion. The task seemed nearly impossible. She picked the smallest and sharpest knife in her pack, hoping that the plant wouldn't notice anything was being done to it. However, she barely touched it and it screamed out again in a robotic, feminized shrill: "Act against nature!" She tried it again. "Act against nature!" Another way. "Act against nature!"<sup>10</sup>

Exasperated, she fumbled the knife fumbled and it fell, cutting her thigh. A thin stream of blood slowly wound its way down her leg. She stared as the red trickle reached the ground and was absorbed by the soil. She looked around the electronic mirage wildly and wondered why it didn't scream out for her. Silence. Why was the cut on her leg not equivalent with the cut she made on the plant, and therefore also an act against nature? Was it disconnected from everything else because it involved humanity, a separate *human* nature? But anytime she cut the

<sup>10</sup>William Cronon's "The Trouble with Wilderness" highlights the negative consequences of society viewing nature as a pristine entity. By viewing the environment as an uninhabited wilderness, society refuses to acknowledge how removed they are from the natural world. As Cronon states, "there is nothing natural about the concept of wilderness...it is entirely a creation of the culture that holds it dear, a very product of the history it seeks to deny" (109). Our perception of the line between human nature and the natural world is skewed and confused. What really counts as natural? Does whatever we mean by "nature" still exist?

Cronon, William. "The Trouble with Wilderness; or, Getting Back to the Wrong Nature." *Ecocriticism: The Essential Reader*, ed. Ken Hiltner. New York: Routledge, 2015: 102-117.

plant it was a human action as well. Her interaction with the electronic forest always seemed intrinsically devaluing. She held her wrist up next to the plant. What was the difference? Were they not both in the same world?

A cracking of twigs interrupted her thoughts. She jumped and swiveled like a leaf in wind to see the Soil leaning against a nearby uTree.

"What do you want?"

"For you to stop trying so hard," he sneered, as two other Soils stepped out from behind the trees.

She looked down at her leg. The bleeding had slowed, but it still made her feel vulnerable. She felt like the small plant. Fragile. As if anything that touched her would indeed be an act against nature, human or not.

Her gaze caught sight of the small knife. The leaf on her wrist twitched with a desire to hold its blade. The uPlants seemed to acknowledge her thoughts, and she felt as though the tiny shrubs moved to conceal the blade's shine from the boys' eyes. The Soil's rock tattoo seemed so far removed from the small pebbles she stood upon. The forest was no longer peaceful. The low buzz of the trees now seemed more like a warning.<sup>11</sup>

Together they started toward her. "Can't win now, can you?" they mocked. She reached down, the leaf on her wrist falling with unnatural

<sup>11</sup> In "Forest Fictions and Ecological Crises," Jennifer Wenzel describes the forest as a place where one can find peace and solitude. Its protective space of "alternative possibility" shields its onlooker from corruption and reality. However, this space is tainted by human experience. The slow fall of the forest from a place of beautiful peace to a place of fear and corruption directly coincides with Elliot's realization of the atrocities of the constructed environment in which she resides.

Wenzel, Jennifer. "Forest Fictions and Ecological Crisis." In *Postcolonial Ecologies: Literature of the Environment*, ed. Elizabeth DeLoughrey and George B. Handley. Oxford: Oxford University Press, 2011: 136-158.

speed towards the ground. In one swift motion, she revealed the knife. The small fire within her grew.

"This doesn't have to be a repeat of last time, you piece of dirt," she laughed. "So why don't you get out of my side of the woods and go do your own damn gathering." Their frenzied eyes, wild with pent-up anger and fear of the unknown, made her think that maybe they weren't so removed from the forest after all.<sup>12</sup> The Soil didn't care about the small blade, and ran towards her. She swung the knife, but again, he grabbed her wrist and knocked her to the ground. A crunching sound rang out from her wrist, like the sick noise of tumbling rock. She screamed out and saw her small tattoo slowly turning dark blue. The Soil stood over her now, blocking the fading sun. His friends laughed, oblivious to the fallen knife a few feet away. She tried to reach for it, but his hard kick tumbled her onto the plant she was previously studying—its cries camouflaged her silence. "Act against nature!" Finally, she thought with ironic satisfaction.

The sun seeped through the branches and barely reached her face, but she gathered enough energy to rise off of the plant. A small, bald patch opened under its space, exposing part of the grid. The Soil stepped towards her, one foot on the exposed grid. With one last chance, Elliot lunged towards the tiny knife and clutched it in her hands. The Soil laughed at its meager size, but Elliot didn't need it to stab him. Instead she plunged the knife into the grid. Sparks erupted from the ground. Pebbles and soil flew away, and in their place electric streams, operating against gravity, rose through the Soil. He screamed as the blue electric bolts cut into his body. The area surged with voltaic

<sup>12</sup> This entire section was inspired by Kate Soper's "The Discourses of Nature." Soper moves through critical arguments throughout this essay. She highlights that when nature is perceived as a "pristine otherness," it is directly juxtaposed against human culture (268). Further, human interaction with nature is always "intrinsically devaluing," which questions our role in the environment, as no other species produces such destruction (269). Most importantly for this story, Soper discusses "human nature" in contrast with "nature" and "animality" (272). She argues that we designate certain attributes to animals and nature, while reserving moral constructs like rationality for ourselves, reinforcing a distance between society and environment.

Soper, Kate. "The Discourses of Nature." *Ecocriticism: The Essential Reader*, ed. Ken Hiltner. New York: Routledge, 2015: 267- 277.



energy. His friends froze with shock, never anticipating that the mirage woodland could fight back.

The Soil collapsed into a heap on the ground. Elliot slowly stood and stared at the mass. "You get him. I'll get her," the other Collective sneered. So again, she ran fast through the forest, just like her first year, but her pursuer seemed to struggle. It was then that she noticed how the uPlants were aiding her flight, stretching their long roots to entangle the Soils' feet. She couldn't ponder the untapped technology of the forest for long. Instead she sprinted off while the Soil tripped and plunged into the ground.

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Elliot settled in the basement of the Plants' assigned academic building. Her leaf was barely visible against the swollen purple blue of her wrist. Looking away from her wound, she noticed that a tiny green sprout had grown inside a crack in the concrete floor. The outside world had taken advantage of this little structural weakness. A weed, Elliot thought. But why did the word have a negative connotation? Weeds didn't exist in the electronic forest; they were unnecessary, annoyances to the Collective's main gatherings. In one day the forest had become a scene of refuge and violence, but maybe if she approached it with the right perspective, it could reveal an answer to their environmental problems. When she electrocuted the Soil, none of the plants had cried out in alarm. Elliot stared at the incinerator, the same one where she had destroyed the Guaiacum. Night had closed in, but a light in her soul had finally taken hold.

She grabbed a lab ignitor and used it as a makeshift torch.

A swarm of memories raced through her mind, faster than her feet could carry her. The pseudo-cytoplasmic liquid dripping from her hands, the blood dripping from her leg, the peaceful hum of the uForest, the sad state of human existence, the need to invent an overarching solution, her nature, human nature, the distance the word even created between the natural world and humanity, the Soil's behavior, animal behavior, the silence of the burning plants. It made sense. There wasn't one solution—just a need for acknowledgement. Acknowledgment of our mistakes, what we were doing to one another, and the competitive environment that had divided humans into segregated factions, and then had divided us from nature.<sup>13</sup>

We were falling.

Our lifestyle needed to fall with us.

But there was a way to slow the fall, together—collectively.

She reached the forest, stared into its bluish hue. She breathed it in one last time. With its silent acceptance, Elliot threw the torch into the constructed environment. It lit almost spontaneously. Sparks flew and flames spread. The forest glowed with a blinding brilliance. She barely heard the alarms go off. The campus' small water supply was no match. Even the Water Collectives were astonished. Everyone was stunned at how quickly it burned. The flames eventually dwindled, their light fading into the sky to welcome the dawn.

The entire campus was out watching the smoldering embers, staring at their laboratory, dumbfounded. For the first time, they were all silent;

<sup>13</sup> This scene represents a combination of Annie Leonard's "Moving from Individual Change to Societal Change" and Timothy Morton's "Imagining Ecology Without Nature." Leonard emphasizes that environmental degradation is perceived as individual fault, when in reality it is the destructive practices of industries that occur "over environmentally restorative" practices (247). As a result, the government places pressure on individuals to change their lifestyles to combat the destructive practices. In actuality, there needs to be an acknowledgement of fault on both sides. Similarly, Morton calls for society to fix our problem with perception: we admit to the reality of nature, but refuse to submit to it.

Leonard, Annie. "Moving from Individual Change to Societal Change." *State of the World 2013: Is Sustainability Still Possible?* Worldwatch Institute, 2013: 244-252.

Morton, Timothy. "Imagining Ecology Without Nature." *Ecocriticism: The Essential Reader*, ed. Ken Hiltner. New York: Routledge, 2015: 237-258.

there was room to think in peace. Without the forest shielding their sight, their minds, they could see the distant city, cloaked in haze. Elliot would be in trouble, maybe traded to an Icelandic nation, arrested, removed from the program. But that was fine, because she had to take a risk. Break the monotony. The previous method was not working. Inventing just one solution would just cause another problem.<sup>14</sup>

The Collectives watched as she walked through the ruins of the forest and bent down at a cracked concrete slab. “Hey, come here”, she waved with her opposite hand—the one with no bruise, no leaf. The Collectives looked at each other hesitantly. A Water finally stepped forward and helped an Air step over some debris. They formed a circle, shyly smiling at one another, quietly laughing at the hell that had been raised in their laboratory. Elliot pointed to the small sprout that lay half concealed against the concrete. The Collectives understood, and they started to remove the slabs, revealing more and more life. Soon, a plethora of biodiversity was exposed. Even Cary became intrigued, by the discovery of a mushroom.

They fetched shovels to aid in the process; some of the Waters tapped the remaining reserves to help cool the scorched earth. The Soils cleared the ground of hazardous spark wires and grid pieces. Elliot watched as the group moved to free the trapped life forms with their own strength; they had turned off the robotic assistants. That energy was not needed. They then moved to the wall and pondered the realities of the world that surrounded them. Elliot watched a tiny sprout unwind around her shoelace. This new vegetation didn’t talk like its fabricated cousins, yet its silence seemed the clearest. Elliot took a long invigorating breath as students began to climb the wall,

<sup>14</sup>In the preface to *Hieroglyph*, Neal Stephenson issues a call to action, begging authors, thinkers, and innovators to start taking risks that will aid in propelling humanity towards a sustainable future. Stephenson states that our “belief in ineluctable certainty” is responsible for eliminating the innovations of the present (xix). His bold statement about taking risks, while simultaneously accepting failure, creates a recurring theme that is developed throughout the rest of the collection.

Stephenson, Neal. “Preface: Innovation Starvation.” *Hieroglyph: Stories and Visions for a Better Future*, ed. Ed Finn and Kathryn Cramer. New York: William Morrow/HarperCollins, 2014: xiv-xix.

began to talk, to free the plants. An eruption had begun, but this time it would not topple mountains. They could work together. They could work collectively.<sup>15</sup>



<sup>15</sup> In "Re-engineering Cultures to Create a Sustainable Civilization," Erik Assadourian emphasizes the need to foster a culture of sustainability that feels as natural as our consumerist lifestyles feel today. He highlights how our current lifestyle undermines "the well-being of countless humans, today and for centuries into the future" (115). This correlates with the wall constructed on the outskirts of the Collective compound. Society acknowledged its environmental degradation, but chose to continue its lifestyle with the hope that technology would fix any problems. In doing so, it segregated those that had been displaced by environmental injustice.

Assadourian, Erik. "Re-engineering Cultures to Create a Sustainable Civilization." *State of the World 2013: Is Sustainability Still Possible?* Worldwatch Institute, 2013: 113-124.



"My fire - kindling" by kcxd, used under CC License. Derivative by Ariel Shamas.



# Chains of Ivy

*Hagan Capnerhurst*



*"Ivy and Door" by Denis McLaughlin, used under CC License. Derivative by Ariel Shamas.*

The community nursery across the way tried their best to close our gates, to lock us in. "A threat to the spirituality and vitality of our innocent community," they'd said in the lawsuit. The tenderest things they'd nursed were the thyme bushes they kept under lock and key in the back greenhouse. "Save thyme, the last of its kind," read the sign above the entry door, an inefficient campaign to save the last few non-genetically modified crops on earth. I'm not bashing their agricultural undertakings; I just think it's ironic that they were the ones with the least amount of empathy for our freedom. So what if some of us happen to have been the grand arsonists behind the devastation of Nabisco's major GM corn crop, or the descendants of Al Capone with a natural bone for crime in our bodies? We weren't the threat. Time had changed us. Thyme, in a sense, had allowed us to be changed.

The rusted aluminum sign above our open gate still read "Harlemdale County Prison," the place where men had been sent for their acts of whim, where their lives would be slowly dissolved by the acrid air of guilt emanating from two-hundred fifty bodies. The crime I was sent here for? I don't remember it. Or at least I don't think I do. I sometimes dream of auto theft, planning murder, and shooting cocaine, and wake up sure that whatever I had done in my dream is what I had actually done to change my course. But then a few days pass and so does the reality of the dream. Whatever the crime, I'll be forever indebted to the recipients of my trouble; it's what got me here, what saved me.



My first day was a living hell. I saw one of the wardens strip what would become my uniform off of a dead man and shake off the dried-on spaghetti noodles before he tossed it my way. I was shoved into a four-by-six box with a delusional cellmate who tore his fingernails off during night terrors. I woke thirty minutes after falling asleep on the concrete floor to the sound of bullets crashing through the glass window above my head. All this after watching my wife of fifteen years, my young twin daughters, and my only son turn their backs and leave me shackled in the courtroom.

On the second day we were hustled out of our cells and into the community showers. We got word that twelve men had died in the night and some seventy others were showing the same signs the deceased had: clammy skin, anxious behaviors, night terrors. I kept my face under the faucet as leaden water mixed with the salty drops that fell from my eyes. I'd heard what happened to weak prisoners, and decided I'd had enough to handle in one day. Ahead, at the wall opposite the showers, a large man fumbled to cover himself. This was Red, my first feeble bit of assurance that I wasn't alone.

That night the death toll had spiked and those of us who were thought to be "well" were kept in the north wing of the prison, a place of privilege but closer to the lookout tower. We had supper together, and the guards let us mingle a bit, something they hadn't allowed at Harlemdale since thirty years ago when a group of inmates ganged up against the guard on duty, locked him in the mop closet, and set all the other guys free. Or so I was told. For reasons beyond the rarity of the occasion, that was the night that changed the course of time.

I ended up at a table with Red, a middle-aged country guy with a learning disability; Rowan and Florence, two gay teens whose parents had disowned them and sent them to Harlemdale (the only place that would take in young people who had no offenses or accusations against their names); and Max, who I still know very little about, but who always seemed to be fighting for a cause beyond himself. That night, four generations of men shared their stories of childhood adventures on family farms, and their dreams of nurturing future fields of their own. The next morning, they were the only ones left, except for the guard on the north end in the touch-me-not shack and the elderly, who had their own building not too far from the guard's. From then on we strove for what we knew best: survival.

Before Florence's parents ensured his expulsion from college, he had begun his thesis on how plants could restructure the fibers of the human brain to make us happy, or something to that effect. I had no idea what any of it meant, but I was still grateful for that boy's noggin. I don't know if it was all in our heads, but he set up the landscape of the place in a way that he said had "rewired our brains' neurotransmitters to reuptake norepinephrine and serotonin rather than leaving it behind in the neural synapse so that it can be used later." The rest of us thought it was magical, the way the zucchini blooms at sunrise would reassure us that the day would be good, and how the lavender-lined path to the fire pit congratulated us at sunset and seduced our sore bodies into slumber with its soft brush in the cold night wind and its euthanizing odor that invaded our nostrils and silenced our brains. He called it botanary psychology; we called it genius.

Ten years of fruitful labor and we were a self-subsistent community with the iron omen still hanging on our front door. But we were so

far removed from our pasts that we felt like the Sumerians: products of this fruitful patch of earth, rather than the other way around.<sup>1</sup> The five of us made a tradition of gathering at Doug the guard's place for our morning meal and listening to his portable box radio for all the news. Things were getting bad. Drought, out of control forest fires, and the cyclical burden of over-fertilization and under-nutrition were the main culprits responsible for global food scarcity. We learned that the only thing that had saved us during the outbreak was our depression and subsequent aversion to food. Monsanto had cultivated a massive crop of drought-resistant thyme that had shown bacteria-fighting properties. The prison thought this would be the most convenient way to serve spoiled and undercooked grub to inmates. They may have been right, but Monsanto was wrong. The problem was in the gene they used, which came from an Alaskan beetle with both antibacterial properties and a taste for human brain stems. Despite the deaths, Monsanto pulled through, keeping its rights to personhood and limited liability and even upping their public appeal with unlimited employee access to GM produce and stipends for small family farmers, all the while greenwashing their "eco-friendly" suicide seeds that would self-destruct after ridding the soil of all of its vitality.<sup>2</sup>

Monsanto faced yet another scare a few years later when a drought-resistant gene appeared in mothers' breastmilk and led to dehydration in babies left and right. So the company tugged even harder on people's heartstrings, telling women that as an organization that supported environmental rights,

<sup>1</sup> In her Ecocritical writing, Kate Rigby proposes that we should not view agriculture anthropocentrically because it was here before humans were. She references Evan Eisenberg's study of the ancient Sumerian culture and how they seemed to understand a more Earth-centric order of creation, imagining themselves as products of the planet. This idea compliments Rigby's call for the "conjoin[ed] concern with the flourishing of all life, human and otherwise," a concern that the story's narrator recognizes as missing from the world that surrounds their prison-farm (365).

Rigby, Kate. "Writing After Nature" in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, 357-367 (New York, NY: Routledge Literature Readers, 2015).

<sup>2</sup> In his critique of the overly broad use of the word sustainability, Robert Engelman also refers to the term greenwashing, which he defines as the act of making services and development within companies sound ecologically and socially supportive when they are often doing the opposite.

Engelman, Robert. "Beyond Sustainababble," in *State of the World 2013: Is Sustainability Still Possible?* (2013): 3-18.

they recognized and denounced the oppression of women.<sup>3</sup> That's when Monsanto underwent a sex change and became Morana. We even found an advert in one of the magazines that showed "Mother Earth" reaching out toward a field of dead crops with babies' faces, showing the number of Morana seeds that hadn't been repurchased after their year-long lifespan, and how Mother Earth was yearning for more petri dish babies.<sup>4</sup> As much as we wanted to share our productivity with the rest of the world, it was too risky. Things were too far gone, leaving scroungers with no choice but to sink our ship if we were found out. "Same problem since the Enlightenment," Doug retorted, interrupting a Fertile-aid commercial on the radio. "How humans will never be free with other humans around."<sup>5</sup>

One afternoon I was making my way to the tomato vines to knock off a day's worth of beetles when I saw Florence and Rowan kneeling at the row of root vegetables on the far side of the east wing. The situation didn't look too intimate, and I hadn't heard a word from them since chatting over flapjacks at the breakfast table that morning, so I asked the tomatoes for patience and took a detour. Rowan heard the crunch of smooth pebbles beneath my feet and turned, hand cupped above his eyes against the glare of the setting crimson sun. "Looks like the rutabagas might be in trouble," he said, dropping his head and letting the sun's rays beat down on his greasy dark hair. I stooped

<sup>3</sup> Jennifer Wenzel explores the culture of indigenous Indians of low socioeconomic status presented by author Mahasweta Devi in her fictional work "Dhowli." In the story, the main character, Dhowli, is commodified for her sexual services to the men who deforest her community. Parallels between the exploitation of women and nature are still prevalent today, and are fictionally exemplified in Monsanto's appeal to women's rights and roles in power by renaming their company "Morana."

Wenzel, Jennifer. "Forest Fictions and Ecological Crises: Reading the Politics of Survival in Mahasweta Devi's 'Dholi,'" in *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth DeLoughrey and George B. Handley, 136-155, (New York, NY: Oxford University Press, 2011).

<sup>4</sup> The advertisement that Monsanto promotes in the story is based on the twentieth century commercial on pollution that Annie Leonard discusses in her article, "Moving from Individual Change to Societal Change." The commercial appeals to difficulties faced by the minority Native American group in the United States, specifically with pollution, and focuses on blaming individuals for trashing the river the Native Americans rowed through, rather than holding corporations who produced the waste liable.

Leonard, Annie. "Moving from Individual Change to Societal Change," in *State of the World 2013: Is Sustainability Still Possible?* (2013): 244-252.

<sup>5</sup> In the story, Doug references one of Dipesh Chakrabarty's theses from his "The Climate of History: Four Theses." Chakrabarty states that during the time of the Enlightenment, "philosophers of freedom were mainly, and understandably, concerned with how humans would escape the injustice, oppression, inequality, or even uniformity foisted on them by other humans or human-made systems" (341).

Chakrabarty, Dipesh. "The Climate of History: Four Theses," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, 335-352 (New York, NY: Routledge Literature Readers, 2015).

and turned the plant's long leaves over in my hand. Sure enough, the beetles had taken a liking to these guys too. But there was something unique about the texture of the bugs, a much smoother body with a thick, metallic-looking coat. "We've never had to worry with these," Florence assured me. "They've always been the most resilient." Rowan nodded and turned back to the devastated crop. "It's weird, they look perfectly fine until you lift a leaf and bam! In your face are billions of festers because one stupid bug decided to steal our dinner." I told the two I'd try my hand at saving the crop after I had tended the tomatoes. As the sun continued its descent into an orange and pink pool of pollution, Florence studied the rutabagas, his thumb and index finger pinching his chin and eyebrows cinching together. "They were such beautiful sprouts just minutes ago. What a sad trap we've fallen into, admiring only the things we view from afar."<sup>6</sup> He shot a flirty grin at Rowan. "Good thing we're able to make exceptions for some humans." That was my signal not to keep the tomatoes waiting any longer.

At the pit that night, I pulled the ripest heirloom tomatoes from my pockets and carefully lined them up on the grating above the fire, ready to restore my energy with a supper of roasted tomatoes and bubbling hot, stone-ground grits that Berry had bagged for us that week. Berry had joined us the month before, leaving his station as prison guard the next county over. He was planning on retirement when Doug called him up on his private phone and told him to come check our place out. The two live on the north end, Doug at his old office and Berry in a retired lookout post now in the middle of a cornfield. As I set the last tomato on the rack I realized I'd forgotten about the rutabagas. Florence read my eyes as I started to stand, and he lifted his hand, motioning me to sit back down. "We checked them

<sup>6</sup> In his contribution to *Ecocriticism: The Essential Reader*, Timothy Morton describes how we as humans often consider ourselves separate from nature, by idealizing it and admiring the natural world from a distance, failing to witness its truer, often messier state. This separation from nature and aesthetic vision of it can lead humans to misunderstanding, nature to ruin, sustainability to risk, and life to death.

Timothy Morton, "Imagining Ecology without Nature," in *Ecocriticism: The Essential Reader*, ed. Ken Hiltner, 237-258 (New York, NY: Routledge Literature Readers, 2015).

again before heading over for dinner, and there was no sign of the buggers. Something I think we should keep an eye on, nevertheless." Rowan peeked above a spoonful of grits. "I don't see the problem. They're gone! More food for us, less work, more happiness." We went back to slugging down our food while Max quietly shucked corn and Red raked the silks and casings into the biofuel pile. I secretly wondered if the beetles had actually been some of the government's spying wasps, but pushed the thought away as soon as it occurred to me.<sup>7</sup>

I woke the next morning to Red's oversized hand grasping my shoulder, carefully shaking my body and bed under his firm grip. "Weez need ya," he said. "It's Florence." Red was a gentle man of few words. That plus the blood on his hands told me something was very wrong. I shuffled my sandals on and followed Red through the corridor and out the west-wing door. A group of five were standing in the citrus garden, surrounding something that lay in a lump on the ground. I made my way to them and wished I'd stayed in bed as I began to realize what they were all staring at. Or who. Florence laid lifeless at the men's muddy feet, a set of long-handled hedge trimmers protruding from his midsection. "Tried ta move 'im, wouldn' budge. Blade's gotta be at least a foot in da ground." My throat tightened as I tried to swallow. Too many feelings were caught there, right in my esophagus. Before I was forced to spew, Rowan came clambering down the stairs after seeing the strange gathering among the orange bushes from his second-level room. He reached the group and froze. I followed his eyes, glued to the device plugged into his partner's chest. "We didn' wanna make ya..." Before Red could finish his sentence,

<sup>7</sup> The idea of the spying wasps was adapted from Brenda Cooper's short story "Elephant Angels," in which humans use drones and other technologies to protect elephants on the African Savanna from poachers. Cooper forces readers to question the unnatural place of humans and technologies in such an environment with animals, just as our narrator questions whether the beetles are government officials spying on their farm, knowing that the government's intentions are not likely ones that would promote the farm's continuance.

Cooper, Brenda. "Elephant Angels," in *Hieroglyph: Stories and Visions for a Better Future* (2014): 398-420.



Rowan dropped his head and staggered away. No one saw him for the rest of the day. After accepting that the body couldn't be moved, we covered Florence with a tarp that Max had woven from the wisteria vines he found by the creek. The soft purple flowers reminded me of the lavender at the camp. The tarp took the shape of Florence's corpse, caressing his cold skin and smothering him in final slumber.

The citrus trees produced their finest fruit that season. No one knew why Florence went out that night, but we sure didn't question why the earth was being so generous at the location of such brutality. Dust to dust, ashes to ashes. Ask not what you can take from the earth, but instead what you can give to it in return. That's when we took on the bona fide process of human hugelkultur, the first of its kind. The fundamental process was borrowed knowledge, of course, but as far as I'm concerned, we were the first to use human bodies instead of logs.<sup>8</sup> Florence received the most glamorous of the burials; the rest of them (animals and the elderly) were slid into a shallow trench, adorned with a few white peace lilies and covered with soil. We never had another death like his, though. Everyone was scared and slept inside, had dinner before dark, and left the lavender shrubs with only the bullfrogs to whistle to sleep.

Mounds of flesh and entrails decompose a bit more quickly than logs – or so I had read in one of the magazine samples that we'd received from a United Kingdom agricultural corporation. Or they said that logs decayed for about twenty years before they'd run out of nutrients, and our bodies were gone much more quickly. But the bones seemed to do well at keeping nice pockets of oxygen in the mounds. Once the crops seemed to be losing access to nutrients, we'd rotate the plants

<sup>8</sup> Hugelkultur is the process of planting crops in mounds of raised sediment, which promotes enhanced nutrient content in the soil as well as increased moisture retention and efficient utilization of surface area.

"The Many Benefits of Hugelkultur," Permaculture.co.uk, accessed April 27, 2015, <http://permaculture.co.uk/articles/many-benefits-hugelkultur>.

and switch out the skeletal remains for the most recent grandpappy that had passed peacefully in his sleep, or with twigs and debris from the woods. Florence helped us turn two citrus trees into a tropical haven, the small patch of ground on the west wing giving us berry bushes and fruit trees our neck of the woods had never seen before.

Rowan managed reasonably well that summer. He put himself into his work even more than usual, replacing the rotted paneling of an old outhouse out back, creating a place to keep our tools safe from men and our men safe from tools. He even embellished the entryway with hand-crafted iron wisteria leaves and wrapped the rusted prison sign in ivy that Florence had planted but never got to see grow. It was nice to see the metal letters covered, but by then the sign had become less ominous and more protective, a warning to intruders that they'd best keep out. Florence had once told Rowan that the ivy was for the two of them, that no matter the number of twists and turns its growth took, it clung together as one beautiful piece of madness. What he told the rest of us was that the bright veins of the leaves subconsciously told outsiders that our bonds were strong and our intentions pure. No wonder the fraud was kicked out of school. Deceiver or not, we would have taken him back in a heartbeat.

I've been sitting there beneath the ivy chain for days now, unable to lift my spirit, much less my legs. Inside our stronghold is an ironic utopia, and outside are millions of lives withering in their own regret and self-loathing. They're trapped in the cycle, tilling, fracking, uprooting, and stripping the earth of its good, and the Earth returns the favor, turning them into plunderers, beggars, and stealers, although no longer thieves when they have nothing to steal. It's never resolved,

the interwoven system of man killing the earth and the earth killing man.<sup>9</sup> The world sent us to the cells of acrid guilt to become malnourished, ignored, and isolated, like the rejected picaro of Indra Sinha's *Animal's People*. We, like the forlorn Animal, were meant to be contained, suppressed, and evicted from the rest of life, but instead we embraced it, revealing the not-so-different differences between us and the other members of humanity, of life.<sup>10</sup> The state of ruin these people face, it wasn't all their fault. We'll never know whether grassroots solutions or change in legislation would have cured the soil, but I'll never point my finger at communities without having another and perhaps a much heavier one held right in the face of Morana. What is there left to save? Will time be on our side? Can thyme change them, too? <sup>11</sup> My feet heavy and my heart calloused, I lugged my body from the graveled road, shut the front gate, and tumbled toward the lavender bushes where I fell into their open branches and disappeared into sweet slumber. I knew I'd wake in the morning to the bright yellow canna lilies lightening the load of my tired body and gently chanting: "You still have time."



"Ivy and Door" by Denis McLaughlin, used under CC License. Derivative by Ariel Shamas.

<sup>9</sup> Rob Nixon references the work of Wangari Maathai in his book *Slow Violence and the Environmentalism of the Poor*, recounting Maathai's reference to the "symbolic and dramatic shape to public discontent over the official culture of plunder" (137). For Maathai, tree planting (like the prisoners' acts of planting) symbolizes a break in the cycle of poverty, which suffers from and inspires the destruction of nature. The ironic idea in the story is that while those who are now scavengers are clinging for life, those who were once social plunderers in the prison system are now the individuals with the greatest happiness and chance for survival because they decided to become one with the earth rather than fight it.

Nixon, Robert. "Slow Violence, Gender, and the Environmentalism of the Poor," in *Slow Violence and the Environmentalism of the Poor*, 128-149 (Cambridge, MA: Harvard University Press, 2001).

<sup>10</sup> Nixon examines Sinha's fictional character Animal, who suffered physical deformities due to poisons that entered the atmosphere in the wake of a tragic explosion in a pesticide-producing facility. Just as the prisoners' stereotypical roles are confused in the story, Animal's presence "confounds the borders between the human and the nonhuman as well as the borders between the national and the foreign" (55).

Nixon, Robert. "Slow Violence, Neoliberalism, and the Environmental Picaresque," in *Slow Violence and the Environmentalism of the Poor*, 45-67 (Cambridge, MA: Harvard University Press, 2001).

<sup>11</sup> Kim Stanley Robinson's response to the narrator's question would be that we aren't "good" enough "as a species or a civilization" to make all of the right decisions, but this leaves us with the idea that we do have the option of looking to what is salvageable and what will be saved. The narrator and his community members follow through with Robinson's call to rework their entire system, but are only able to get so far before it becomes a threat to their own lives without large-scale support from broader communities, powerful corporations, or influential governmental institutions.

Stanley Robinson, Kim. "Is it Too Late?" in *State of the World 2013: Is Sustainability Still Possible?* (2013): 374-380.