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Canaries in the Anthropocene: storytelling as degentrification in urban community sustainability

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Abstract

This article examines contrasting stories—or cautionary tales—about the environmental crises facing the planet and how these stories enable different theories of "sustainability" and responses to these crises. The story of the Anthropocene is one of the contemporary narratives guiding modern sustainability initiatives, and it assumes a pan-human responsibility for the climate crisis calling for the adoption of technocratic fixes to address the problem. This is not enough, argue many environmental justice critics, who assert that the story itself is fatally flawed. Rather, they insist that the goal should be to "change the story" to imagine and create alternative pathways toward more just, interdependent, and sustainable futures. Instead, many environmental justice activists and scholars deploy the story of the "miner's canary," a cautionary tale used as a metaphor for how the awareness of the suffering of those who are most vulnerable may provide early warning signals of imminent environmental collapse in the broader society. The miner's canary story argues that by noticing and caring for those most at risk, all communities and environments are protected. The final section of the article discusses my own story of working with community groups who see themselves as "canaries" in the current global crisis fueled by climate change. I describe how I engage community building across differences with the hopes of co-producing a model for a more *just* sustainability—or a *story* of a "degentrified" model of sustainability that insists we address in tandem the social and environmental crises of our times.

Keywords Anthropocene · Miner's canary · Storytelling · Environmental justice · Just sustainability · Urban environmental studies

Those of us living in environmental justice communities are the canaries in the coal mine, and we have felt the problems for some time. We are regional *sacrifice zones* created to support our hyper-consumption society, and point sources for greenhouse gases, but they are coming everyone's way. When it comes to unsustainability, we are the canaries in the coal mine.
– Majora Carter, Green Economy Leader, 2011[1]

I am cognizant of the interrelatedness of all communities and states...Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of

mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly.
– Martin Luther King, Jr, "Letter from a Birmingham Jail," April 16, 1963

Environmental justice scholars and activists concerned about the social and environmental calamities of our times—deepening inequalities and global poverty, escalating violence and conflict, and runaway climate change—argue that the dominant cultural narratives underlying mainstream environmentalism's calls for "sustainability" are not up to the task of driving the fundamental changes necessary to address such problems. The story of sustainability, many argue, has been "hijacked" by global capitalism's appeals to green individualism (personal lifestyle changes) and hyper-consumerism (vote "green" with your dollar), which, rather than pivoting toward a greener and more just future, binds us to the same destructive patterns and routine tolerance of social and environmental injustices (Parr 2009; Agyeman 2013). The stories touting sustainability and human ingenuity in the face of what is

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now being called the "Anthropocene" echo past stories of progress and technological advancement, which, as suggested in the above quote by environmental justice thought leader Majora Carter, created the "sacrifice zones" of today's modern industrial societies and the amassing of body counts of sacrificial "canaries"—humans, other animals, and plant life alike. Many members of environmental justice communities see themselves as the "canaries in the coal mine" portending the human and ecological risks of globalization's excesses. From this "canary's" vantage point, many environmental justice scholars and activists are producing alter-sustainability narratives that embrace Martin Luther King Jr.'s caution that "injustice anywhere is a threat to justice everywhere" and his vision of the world as a "network of mutuality."

The dominant narrative of sustainability (what some scholars refer to as "ecomodernism" [c.f., Dryzek 2013]) maintains that the solution to environmental crises and climate change involves identifying the global economic system's (unintended) design flaws, and fixing them using new technological inventions or market-based mechanisms to make the system "less bad" (usually defined as less carbon emitting). The path to progress can then continue unabated, but now with a somewhat smaller carbon footprint. While the familiar definition of sustainability, or "sustainable development," insists on the achievement of a harmonic balance supported by three "pillars" (also known as the "three Es") comprised of ecological integrity, economic prosperity, and social equity, many scholars have noted that the social equity pillar is often the most wobbly (Agyeman 2013). Critics contend that the plot line of the common sustainability story—decarbonize the economy by implementing a set of techno-fixes—does not mandate modifying the more foundational story of human domination and control over nature's resources and other human and non-human beings. Nor does it require that the shift to a low carbon economy gives birth to a more peaceful and egalitarian society; some well-intentioned sustainability initiatives in cities around the world have led to "green gentrification" (sustainability improvements such as green buildings, eco-parks, and upscale farmers' markets that increase property values thereby pricing out and displacing local, low-income residents) or worse, "eco-apartheid" (sustainability policy and design that create gated/fortressed systems of haves and have-nots with disparate access to resources and life necessities such as drinkable water, clean air, food, and land) (Gould and Lewis 2016; Cohen 2013).[2] Implementing technocratic modifications to the normative story of human progress and modern development is not enough, argue many environmental justice critics; the story itself is fatally flawed.

Rather, they insist that the goal should be to "change the story" to imagine and create—or re-new and re-generate—alternative pathways toward a different, "mutually networked" world. While storytelling is understood to be a fundamental human activity, in recent years environmental justice and other social activists have focused on engaging with the techniques of storytelling as a personal/political strategy to build healthier, more equitable, and more "sustainable" futures (Korten 2015; Klein 2017; Haraway 2016; Lappé 2013; Ganz 2009; Boggs and Kurashige 2012; Center for Story-Based Strategy n.d.).

How do we tell stories about living together justly, mutually, and sustainably on a damaged planet? In this article, I examine several stories—or cautionary tales—representing environmental crisis that are used by different groups of people who are concerned about the current state of the earth. I am interested in exploring the possible worlds, or "sustainable futures," that these stories imagine. In the final section, I discuss my own story of how I use action-based research and pedagogy to engage community building across differences with the hopes of co-producing a model for a more *just* sustainability, or, a story of a "degentrified" (Schulman 2012) model of sustainability that insists we address in tandem the social and environmental crises of our times. Confronting the "gentrification of the mind" by examining diverse stories of environmental crisis and response may help to prevent the unintended production of "sacrifice zones," "green gentrification," and the profiting off of modern societies' many sacrificial canaries.

Stories to live and act by

The first story I examine is represented by the image of the "Planetary Dashboard" (Fig. 1), a set of graphs illustrating the "Great Acceleration" of human activity from the start of the industrial revolution to the relatively recent present (Steffen et al. 2015). These graphs display global changes during the time period between 1750 and 2010 in 24 social and environmental indicators including greenhouse gas levels, species extinction, population growth, ocean acidification, water pollution, and deforestation. The Planetary Dashboard's visual imagery showcases the iconic upward arcing curves (the infamous "hockey sticks") that document the *exponential* surge of human impact on the earth, especially since the 1950s.

For some analysts, these graphs provide irrefutable evidence that we are now living in a new moment of earth's history, a new geological epoch that scientists are calling the *Anthropocene*, or the Age of Man. The term Anthropocene was coined by a group of environmental and climate scientists in the early 2000s to convey the message that the species *Homo sapiens* now represents a geomorphic force so powerful that it has upended the current geological epoch known as the Holocene, a 12,000-year period of relative climate stability on earth. The subtext underlying this proposed epochal name-
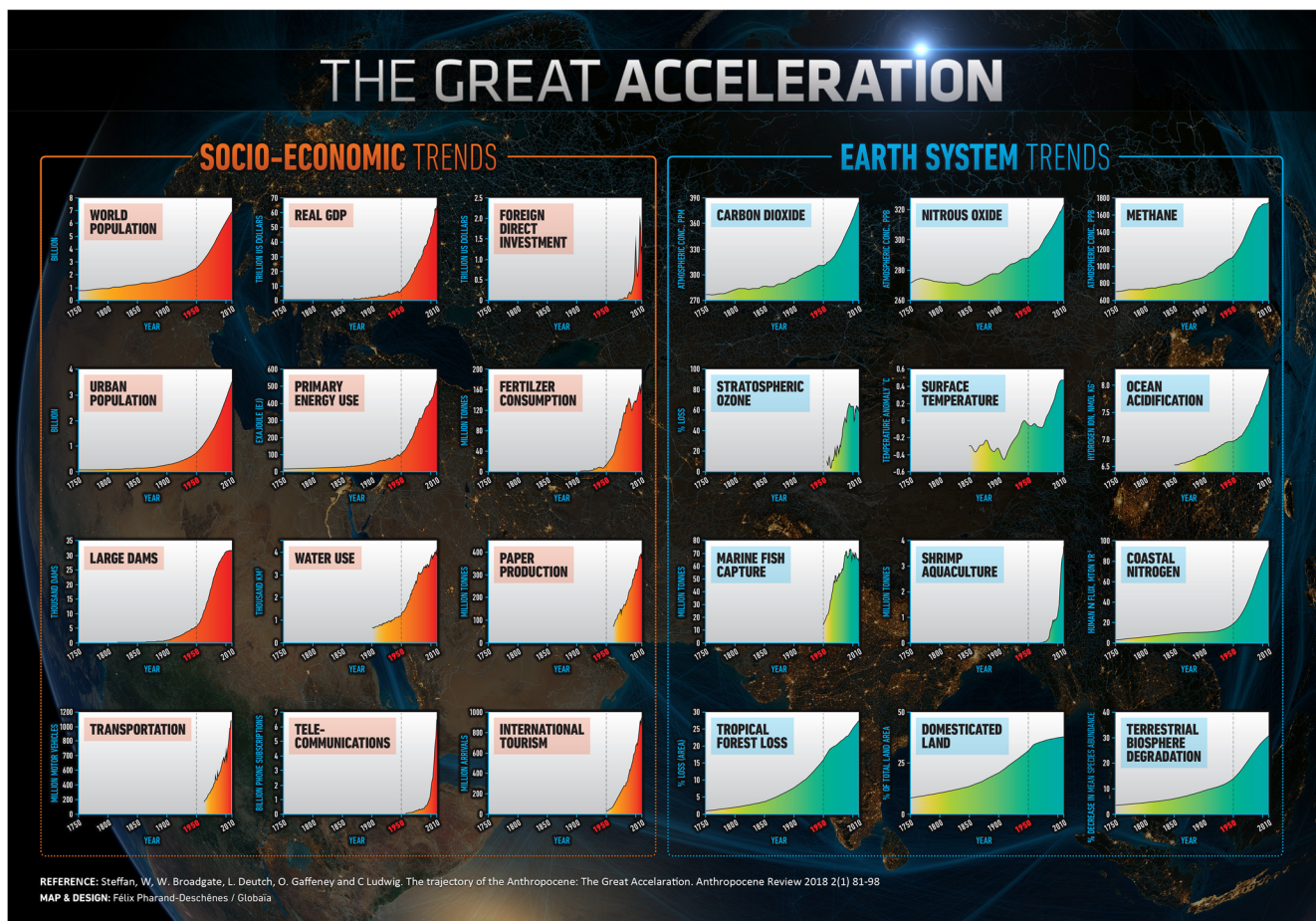
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[2] Paolo Bacigalupi's novel *The Water Knife* (Bacigalupi 2015) attests to this trend. The novel imagines a dystopian, yet fully solar-powered, carbon-free, eco-future structured on a caste system of haves and have-nots and rife with racial and sexual exploitation, grinding poverty, xenophobia, and pervasive violence.

Fig. 1 Planetary dashboard

change to the Anthropocene is that *we*, the universal human species, the Anthropos, driven by our *innate* "human nature," and through our inherent greed and short-sightedness, *we* have really done a number on the earth.

The image in Fig. 2 likewise narrates a story about social and environmental crisis, but with a different message. The Instagram photo shows a group of indigenous activists participating in the 10-month-long land occupation and resistance against the construction of a massive oil pipeline system (the Dakota Access Pipeline) at Sacred Stone and Oceti Sakowin Camps in North Dakota led by the Standing Rock Sioux tribe. The resistance, popularly known as #NoDAPL, was organized by Standing Rock Sioux tribal members and activists to protect the water system of the Missouri River and to defend against the desecration of Mother Earth by extractive corporations including Energy Transfer Partners, big banks like Wells Fargo, and the local and federal governments who, the tribe argues, should be guarding the public trust and protecting the regional watershed (Whyte 2017). The story told in this photograph challenges the Anthropocene's declensionist narrative, which casts as deleterious all human activity in the environment and all human presence on the earth. Leaders from the Standing Rock Sioux tribe, including elder

LaDonna Brave Bull Allard, founder of the Sacred Stone Camp, assert that *we* humans *are* water. And moreover, *we* humans—specifically those from the Standing Rock Sioux tribe, thousands of members from 300 other federally recognized tribes, and upwards of 10–15,000 non-indigenous allies—*we* humans are water *protectors*, not desecrators. "To save the water," argues Brave Bull Allard, "we must break the cycle of colonial trauma" (2017). To save the water, the climate, and the people, we need more than an epochal name change and a techno-fix.

I argue that the grand narrative of the Anthropocene does not do a very good job of discriminating between these different groups of humans; it does not do a good job of situating, contextualizing, and historicizing who is the "we" of the Anthropos. Moreover, by not paying attention to the different subjectivities produced through social and environmental histories (that is, distinguishing between the human groups that have benefited from exploiting earth's resources and other human beings for profit, and the human groups that have borne the brunt of ecological and social despoliation), this grand narrative makes *invisible* the underlying systems driving earthly destruction and exploitation that certain humans created, and that other humans powerfully resisted. That is to

Fig. 2 We are water

say, it makes invisible the structural impacts and social and environmental injustices of the governing systems of capitalism, racism and white supremacy, colonialism, and patriarchy (Di Chiro 2017). What is more, the Anthropocene story erases the many stories and histories of human systems that organize life differently, systems that design life-sustaining economies grounded in the principles of nature. Such systems, what I call "embodied ecologies"[3] insist that humans must think about the impacts of their actions seven generations into the future, that they must take no more than they need and give back to the land and the water in order to protect and strengthen the cycles of renewal and regeneration. These systems existed and still exist; they are practiced today in the economies and lifeways of indigenous communities around the world, but they are subjugated with the assertion that the climate crisis is the product of the "age of humans," a tragic blip in earth's history brought about by a ruinous "human nature" (Whyte 2013; Todd 2016; Di Chiro 2017).

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[3] In my concept of "embodied ecologies," I develop a critique of the abstracted, disarticulated approach to environmental science and policy by examining grassroots-based, environmental and climate justice collaboratives, which aim to co-create more just and sustainable futures for their communities and regions. Embedded in the idea of embodied ecologies is the argument that the top-down, expert-driven approaches to environmental research often overlook the bodily impacts on or disregard the voices of people whose lives are most directly and negatively impacted by social injustice and environmental degradation. Instead, an embodied ecology approach insists on building practices of reciprocity and inclusion drawn from the community-focused, grounded, ethnographic methodologies of environmental justice research.

"The arts of noticing": paying attention to the trouble in the age of global climate crisis

Feminist critic Donna Haraway argues that it matters which stories we choose to describe and transform the world (2016). Some stories, she argues, repeat the same narrative loop, but others encourage us to "stay with the trouble" by urging that we pay closer attention to historical structures and relationships, that we see patterns in natural and social systems, and that we engage in the feminist and critical race theories and practices of intersectionality. Haraway draws on anthropologist Anna Tsing's concept of "the arts of noticing" (Tsing 2015), a form of thinking that she argues we must cultivate "in the all-too-ordinary urgencies of onrushing multispecies extinctions, genocides, immiserations, and exterminations" (Haraway 2016, p. 37). Tsing's book, *The Mushroom at the End of the World*, demonstrates the arts of noticing through a series of short chapters telling fine-grained stories of the complex, historical, interspecies assemblages of multinational communities comprised of diverse human groups, matsutake mushrooms, and oak and pine forests. Through storytelling, Tsing notices "the possibilities of life in Capitalist ruins" (the subtitle of her book) in these multispecies acts of coexistence and "collaborative survival" (Tsing 2015, p. 23). Haraway argues that Tsing's approach to *noticing* the stories of how human and non-human assemblages live in the ruins on earth may offer skills we will need as we face greater uncertainties and more precarious existence:

Refusing either to look away or to reduce the earth's urgency to an abstract system of causative destruction, such as a Human Species Act or undifferentiated Capitalism, Tsing argues that precarity—failure of the lying promises of Modern Progress—characterizes the lives and deaths of all terran critters in these times. She looks for the eruptions of unexpected liveliness and the contaminated and non-deterministic, unfinished, ongoing practices of living in the ruins. She performs the force of stories; *she shows in the flesh how it matters which stories tell stories as a practice of caring and thinking* (2016, p. 37; emphasis added).

The arts of noticing, much needed in a time of multiple technological, informational, and fake news distractions, support the possibility of creating life-enhancing forms of storytelling. The arts of noticing include, for example, the practices of caring, taking responsibility, and identifying what matters. The arts of noticing are about observing and noticing both the human and non-human components of the world around us: the different plant species outside the window, the direction the sun travels across the sky, the communities who live nearby, the languages people speak, the conditions of people's lives (including the quality of their schools, the proximity of their neighborhoods to polluting facilities such as waste incinerators), the colors of the community murals illuminating people's experiences, and the vitality of community gardens in local neighborhoods providing access to affordable, fresh produce to stave off food insecurity. The arts of noticing take a hard look at the recent scientific assessments that conclude that many areas on earth are on the path to becoming "uninhabitable" within a shorter time span than previously imagined through widespread heat deaths of humans, livestock and wildlife, massive crop failures in earth's middle latitudes, devastating water shortages, and species extinction of unseen proportions (Wallace-Wells 2017). At the same time, the arts of noticing think and care about the statistics that in August, 2017, over 1200 people died and 41 million were displaced by record-breaking, climate change-fueled flooding and mudslides in India, Bangladesh, Nepal, Niger, and Sierra Leone, human calamities that went unnoticed in the mainstream media as coverage of Hurricanes Harvey and Irma pounding the Gulf Coast of the USA took precedence (Rennard 2017).

How do we create the arts of noticing, or the capacity to hold in the same breath—or in the same story—*both* the evidence of mass extinctions and die offs of non-human species *and* the evidence of deaths and displacement of millions of vulnerable and marginalized human populations? And, what might such arts—and tools—of noticing look like? For Haraway, it matters what thoughts, ideas, knowledges, and stories are woven together to theorize and transform a profoundly disrupted world. And it matters which stories are brought together to articulate viable environmental politics to support a vision of

"collaborative survival" (Tsing 2015). I am interested in how we might create the practices of working together across differences to support collaborative survival. Like Tsing, I believe what we can realistically hope and fight for is working together to create many, diverse *patches* (Tsing 2015, p. 34) or *refuges* of collaborative survival. This will mean noticing the complex lives—the assets and risks—that are embodied by the members of the communities who live nearby. How do the arts of community storytelling support the practices of collaborative survival? And, which cultural narratives or ascendant stories can be mobilized to these ends?

Changing the story/changing the world

I am interested in which practices of noticing are encouraged or eluded in the popular storytelling practices of the Anthropocene. And, what kinds of environmental politics are mobilized, and by whom, with the use of the term? For the environmental justice communities with whom I have collaborated over the years, the particular stories told under the sign of mainstream *sustainability* have not been met with avid enthusiasm. Typically, sustainability has meant focusing on recycling, eating organic food, driving a hybrid car, or installing solar panels on your house. This dominant, ecomodernist story, which argues we are on the right path toward social and ecological progress save for a few technological glitches, typically evades an environmental justice perspective of the roots of *unsustainable* and *unjust* social and economic systems. The environmental justice analysis argues that the telling of modernity's stories of progress and technological optimism systematically ignores the histories of racial, class, and gender oppression that have undergirded modern economic development through the exploitation of the human labor and dignity of African peoples through slavery, the dispossession and cultural destruction of indigenous peoples through colonialism, and the ongoing contamination, displacement, and disinvestment of marginalized communities who bear the brunt of the negative externalities of the global, fossil-fuel-based, industrial economy. The ascendant story of the Anthropocene, with *Universal Man* as the central protagonist, fails to *notice* the divergent histories of human presence on earth, and thereby inaccurately universalizes the story of the "Great Acceleration" of human impact (as described in the image of the Planetary Dashboard in Fig. 1). Situating *all* humans as Universal Man, the Anthropocene story concludes that "we're all in the same boat now." Much like the earlier eco-narratives asserting shared human experience and responsibility (e.g., "Spaceship Earth" or "Our Common Future"), the moral of the Anthropocene story aims to galvanize us to act and to work together (Di Chiro 2003). Yet, in my experience, the Anthropocene story has not gained much traction, if any, in environmental justice communities; Universal Man

just does not cut it in terms of waging effective environmental politics and action for most activists of color. As Haraway has argued, when trying to build practices for collaborative survival, "It doesn't work to universalize and essentialize us as a species, without situating us as human beings" (2016, p. 46). In more direct terms, Michelle Alexander, author of *The New Jim Crow: Mass Incarceration in the Age of Colorblindness* (2012), argues that an environmental sustainability paradigm that claims we are *all* responsible and we are all in the same boat, will not readily succeed. She writes: "If progressives think they can win in the long run without engaging meaningfully with Black folks and taking racial history more seriously, they better get Elon Musk on speed dial and start planning their future home on Mars, because this planet will be going up in smoke" (quoted in Klein 2017, p. 125). Are we really *all* in the same boat now?[4]

While the Anthropocene has not gained popularity in environmental justice communities as an effective storytelling strategy from which to wage eco-politics, it certainly has gained traction in largely Euro-Australo-American academic contexts; it has become what anthropologist Elizabeth Reddy has termed a "charismatic mega-category" (2014), and has spawned a robust publication growth industry (e.g., see Moore 2016; Purdy 2015; Hamilton 2017). But, if not the story of the Anthropocene, which narratives of living on a planet facing severe disruption, and which stories of regeneration and ongoingness (Whyte 2013) have been more engaging for environmental justice communities and indigenous communities (such as the aforementioned water protectors still standing strong at Sacred Stone Camp)?

Communities and canaries: no more Silent Springs

There are other stories warning of peril, vulnerability, and possible recovery that are embraced in environmental justice political discourse and activism. In the early decades of the twenty-first century, there has been a resurgence of a much older—and certainly less charismatic—environmentalist's cautionary tale, as I noted at the beginning of this essay: the story of the "Miner's Canary." The message of the canary story is that by paying attention to, noticing, and caring about the differential vulnerabilities of *some* of us, we are able to

wake up to how we are *all* at risk. In the nineteenth and early twentieth centuries, canaries were used as a sentinel species in the coal mining industry (Freese 2016). Brought down into the mines in cages, the more vulnerable canaries would suffer respiratory distress or collapse from the presence of gases like carbon monoxide, methane, and noxious coal dust, alerting the miners to impending danger to their own bodily systems. The "canary as sentinel" story is often used as a metaphor in environmental politics for how the awareness of the suffering of those who are *most vulnerable* may provide early warning signals of imminent environmental collapse in the broader society. Caged canaries are no longer used in modern mining operations thanks to the invention of high-tech air monitoring equipment, but, despite the availability of this new technology, in the past decade in several coal producing countries around the world, there has been a spike in cases of black lung disease, a potentially fatal respiratory disease caused by breathing coal dust (Berkes 2016). Despite the 45th US president's empty campaign promises to revive American coal production, coal mining has dropped off dramatically in the USA. The coal industry was dealt a blow in late 2015 when Don Blankenship, the former CEO of the coal giant Massey Energy, was found guilty of conspiring to commit mine safety violations in federal court in Charleston, West Virginia (Blinder 2016), and over the past decade, dirty coal has been eclipsed by "cleaner" natural gas as a transitional fuel (Mathiesen 2015). Despite these shocks to King Coal, there have been nearly 700 cases of black lung reported in the past 3 years in the US coal mining states of Appalachia including Virginia, West Virginia, Kentucky, and Ohio (Becker 2017). These numbers pale against the close to 6000 cases of black lung diagnosed in China every year (Yap 2014). In 2015 in Australia, one of the world's large coal exporters (earning the country approximately \$34 billion per year),[5] the specter of black lung resurfaced when it was reported that four coal miners had been diagnosed with the disease (by 2017, the reported cases rose to 18) in Queensland state (Mellor and Riga 2017). Black lung was thought to have been eradicated in Australia more than 60 years prior. The organization "Environmental Justice Australia" responded to this report by deploying the miner's canary metaphor on its Facebook page (Fig. 3). The Queensland Mines Department has been accused by the national mining union and environmental groups of covering up this threat to workers' health and for not installing modern environmental monitoring technology to detect the presence of dangerous levels of coal dust (Mellor and Riga 2017). No high-tech twenty-first century particulate matter monitoring equipment—nor even canaries—had been used to protect workers and community health. Environmental
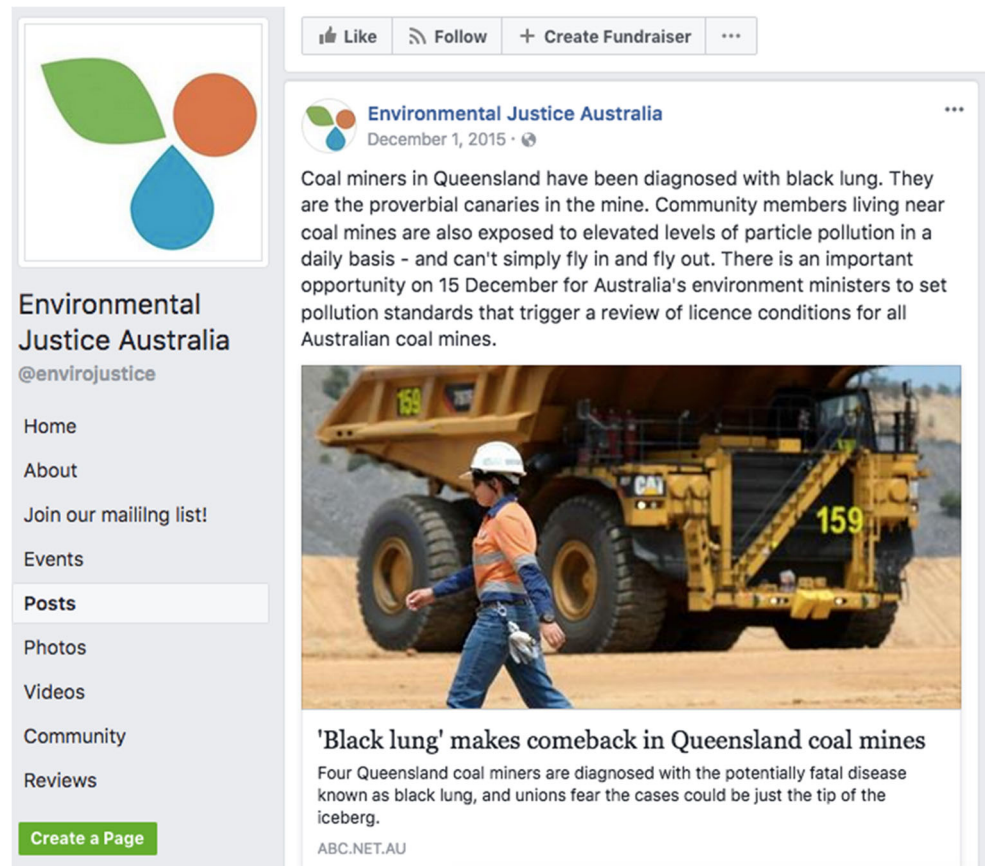
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[4] Publicity at the United Nations Climate Conference (COP-23) hosted Figi, an island nation at great risk from sea-level rise, drew on the Figiian Canoe as a "symbol of resilience and unity" and to represent the UNFCCC's assertion of "common" purpose and shared responsibility for climate change action. Figi's Twitter site stated: "We are all in the same canoe—not just island nations but whole world. No one is immune to the effects of climate change."
https://twitter.com/cop23/status/923219415839232000?lang=en

Because Figi does not have the resources nor the capacity to host a large international conference, the COP was held in Bonn, Germany, from November 6 to 17, 2017.

[5] Australian Department of Industry, Innovation and Science, https://industry.gov.au/resource/Mining/AustralianMineralCommodities/Documents/Australias-major-export-commodities-coal-fact-sheet.pdf (2016).

Justice Australia adopted the canary metaphor to insist that the story of four coal miners contracting black lung disease *matters* and should be *noticed*.

The canary in the coal mine story is also used when referring to many other environmental and climate disasters. In early 2017, researchers at the University of Puerto Rico released a report referring to the islands in the Caribbean as "canaries in the coal mine for climate change" because of the dramatically increasing rates of coastal erosion and the loss of beaches, roads, trees, and homes just since 2010 (Cantieri 2017). The scientists noted that sea-level rise due to climate change is disproportionately affecting the low-lying areas where the largely Afro-Puerto Rican and low-income communities of Loiza and Yaguazo are located. Describing them as metaphorical canaries in the mine, local scientist Dr. Ernesto Díaz from the University of Puerto Rico insisted that these island-based communities' lives *matter* and should be *noticed*. The federal government's blatant indifference to the lives of Puerto Rican citizens in the aftermath of the catastrophic public health and environmental catastrophes wrought by Hurricane María in September 2017 confirms Díaz' insistence that Puerto Ricans (and residents of other Caribbean islands who lost their lives, homes, or entire landmasses after Hurricanes Irma and María scoured the region) personify climate change's sacrificial canaries (Dietrich et al.

2017). Similarly, in 2016, Native Alaskan Inupiat elder Shelton Kokeok drew on the canary metaphor when he spoke about the coastal erosion of his island of Shishmaref, one of the barrier islands off the coast of Northern Alaska. Coping with the tribe's painful decision whether or not to relocate the village to mainland Alaska, Kokeok said: "Our village works a bit like a mine's canary regarding global warming. We can see it getting sicker as the planet heats up. The land is going away. I think it's going to vanish one of these days" (Visser and Newsome 2016). The canary metaphor helps to tell the story that the loss of Inupiat ancestral island homelands, and the fraught decision facing tribal members about cultural and geographic dislocation *matter* and should be *noticed*.

The miner's canary is also a story that is used metaphorically in African American political and cultural theory. Lani Guinier (political theorist) and Gerald Torres (environmental law scholar) use the story of the miner's canary as a way to foreground the ongoing role of racial injustice in modern life. In their 2002 book, *The Miner's Canary: Enlisting Race, Resisting Power, Transforming Democracy*, Guinier and Torres write:

> Those who are racially marginalized are like the miner's canary: their distress is the first sign of a danger that threatens us all. It is easy enough to think that when

we sacrifice this canary, the only harm is to communities of color. Yet others ignore problems that converge around racial minorities at their own peril, for these problems are symptoms warning us that we are all at risk (18).

The authors' use of the metaphor of the miner's canary here refers to the "poisonous climate" of racism, class injustice, and police brutality in US society that endangers Black people and other people of color, but is ultimately noxious to the whole of society.

In 2016, Supreme Court Justice Sonia Sotomayor expressed a similar sentiment in reference to an argument about the expanded powers of the police to stop you and interrogate you for any reason. In her dissenting opinion in *Utah v. Strieff* (2016), a Fourth Amendment case about police searches, Sotomayor wrote: "We must not pretend that the countless people who are routinely targeted by police are 'isolated.' They are the canaries in the coal mine whose deaths, civil and literal, warn us that no one can breathe in this atmosphere."[6] Likewise, renowned author and legal scholar Bryan Stephenson, from the Equal Justice Initiative, also deploys an analysis of social injustice by linking a poisoned atmosphere or "smog" with racism, arguing that, like the caged canaries, society's "noxious air" first poisons those who are forced to live with it, but it eventually spreads to the broader public sphere. Stephenson asserts: "We have a horrific history of mistreatment based on color. And I think that narrative of racial difference that was cultivated to justify that mistreatment, has created a smog, and we've all been breathing it in."[7]

Environmental justice scholar-activists Lindsay Dillon and Julie Sze extend further the use of the canary metaphor by connecting the environmental justice movement's focus on environmental racism and the disproportionately high rates of asthma in communities of color together with the toxic atmosphere of police violence targeting Black people and other people of color. This analysis became distressingly clear in the aftermath of the chokehold murder of Eric Garner by an NYPD police officer in 2014. Constrained violently by police after being stopped for the petty offense of selling loose cigarettes on the street, Garner repeatedly cried, "I can't breathe!" Following Guinier, Torres, Sotomayor, and Stephenson, Dillon and Sze clarify the deeper meanings, both metaphorical and material, of being denied breath, choking, and respiratory distress—deadly violence that was suffered by miner's canaries in the service of early industrial progress, and racial and environmental violence that continues to be endured by Black men, women, and children all across the country. Dillon and

Sze write: "We interpret the phrase 'I can't breathe' as condensing the histories of persistent patterns of police violence, both which have denied breath and healthy breathing spaces to low-income communities of color. In this sense, the inability to breathe can be understood of both a metaphor and a material reality of racism, which constrains not just life choices and opportunities, but the environmental conditions of life itself" (2016, p. 7).

Central to the telling of the above miner's canary stories is that the life stories of Black people, peoples of the African diaspora, and other people of color who have suffered the worst harms (social, economic, and environmental) from a racialized political system *matter* and should be *noticed*. This is a perspective expressed by activists in the Black Lives Matter movement, which was first organized in 2012 by a group of young, queer, Black women in response to escalating levels of police violence against Black communities. The movement has grown rapidly to become one of the most important forces organizing against the differential life chances and risks of premature death experienced by people of color in the USA, and has developed a Movement for Black Lives policy platform. This platform includes a demand for environmental justice through a re-investment in equitable and renewable economies, and for reclaiming the rights to land, neighborhoods, vacant lots, and schools—in other words—the rights to reclaim land-based *refuges* for Black life, Black flourishing, and Black liberation.[8]

Many environmental justice communities and activists in the Black Lives Matter movement challenge the Anthropocene's anti-humanism and argue instead that their communities are like the "canaries in the coal mine," as sacrificed bodies in this crisis. The canary metaphor and its storyline of vulnerable and sacrificial bodies contain both metaphorical and material meanings. As in Rachel Carson's *Silent Spring* warning about the fatal effects of DDT poisoning on songbirds in the 1960s, today thousands of songbird and other bird species are at risk of extinction due to toxic exposures and habitat destruction (Suzuki 2014). The canary metaphor is still relevant, although the canaries are not all songbirds; they include species of plant life, as in the massive die-offs of phytoplankton due to the acidification of the oceans, and they include the thousands of species of non-human animal life, as in the worldwide decline, estimated to be at 4–12% per year, of amphibian species. Moreover, many marginalized, colonized, and impoverished human populations consider themselves sacrificed communities. Extinction is one of the central plots in the Anthropocene story, including the terrible statistic that 50% of the earth's species may be gone by the end of the century (Center for Biological Diversity n.d.). And yet, many environmental justice communities and activists in the

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[6] Matt Ford. 2016. "Sotomayor's Ringing Dissent," *The Atlantic*, https://www.theatlantic.com/politics/archive/2016/06/utah-streiff-sotomayor/487922/

[7] Bryan Stephenson, PBS News Hour, April 13, 2017, https://www.pbs.org/newshour/brief/212727/bryan-stevenson

[8] Policy Platform, Movement for Black Lives, https://policy.m4bl.org/, and Black Land & Liberation Initiative, http://blacklandandliberation.org/

Black Lives Matter movement consider themselves akin to endangered species at risk of premature deaths and displacements due to land grabs, urban development, and gentrification. In protests in many places around the world, marginalized communities and communities of color have had to assert their basic *humanity*; I am a man, I am a woman, we are *human* (Mirzeoff 2017). They argue that if one pays attention to the high rates of police killings, poverty and unemployment, low-quality schools and housing, and environmental contamination that disproportionately affects their neighborhoods, territories, and homelands, one can come to the conclusion that the lives of Black people and other people of color matter less than those of whites.

Declaring that the planet's core environmental problem is *humanity*, the Anthropocene story too readily conflates the exploitative cultures and extractive economies of the 1% of high-impact, high-extractive, and high-consumptive humans with the entire species. At the same time, it easily ignores the other large-scale story of global crisis: human inequality and the ongoing struggle for basic human rights for billions of people worldwide. Moreover, the Anthropocene story limits the possibilities for gaining critical insights from examples of sustainable lifeways, knowledges, and cultures that are achieved by those people who have been colonized, enslaved, or eradicated in the service of wealth and domination of the earth. I argue that if these diverse stories of resistance, resilience, resurgence, and what philosopher Kyle Powys Whyte (Potawatomi) calls stories of "collective continuance" (contesting the individualism of "sustainability") were noticed, and mattered, we may be able to more fruitfully co-create mechanisms for collaborative survival (Whyte 2013).

At the root of collaborative survival and continuance, according to feminist, scholar-activist Zoe Todd (Métis), is learning from cultures that possess highly refined and well-developed knowledge systems and practices of reciprocity and care. Todd writes:

> What lessons can we learn from resurgent, resistant, resolute, and still-living Indigenous peoples who have already faced the upheaval wrought by the early forces of what is now being called the Anthropocene? In my home territory, the principles of loving accountability and reciprocity are deeply embedded in Indigenous legal orders and relationships. What I have learned from these teachings and from mentors is that reciprocity, love, accountability, and care are tools we require to face uncertain futures and the end of worlds as we know them. Indeed, this ability to face the past, present, and future with care—tending to relationships between people, place, and stories—will be crucial as we face the challenges of these times (2016).

Resilient, *resistant*, *reciprocal*, *regenerative*: these are different vocabularies engendering different storytelling practices. As the proverbial canaries in the coal mine, many front line communities have taken up the challenge of regenerating a desecrated earth and a poisonous society and are building a *just transition* by transforming the coal mines, the oil fields, and *refiguring* the image of the miner's canary, once a caged, sacrificial object, and now a powerful agent imagining and co-creating a more just and sustainable future. A striking image of this refiguring of the canary from confinement to agency can be seen on the cover art of hip hop artist Akua Naru's 2015 album titled The Miner's Canary. Painted by Jamaican-born artist, Tamara Natalie Madden, Naru's album cover shows the canary, now un-caged and perched on the shoulder of the powerful woman, both in charge of their own destinies.[9] I am interested in the ways that the miner's canary story has been embraced by many scholars and activists of color and members of vulnerable communities threatened by the dire impacts of climate change. Used by marginalized communities primarily to spotlight the differential risks that their residents face as climate change proceeds apace, the story, however, is not the perfect antidote to the drawbacks of the Anthropocene meme. While the sacrificing of caged canary bodies in the nineteenth and early twentieth century coal mining industry was seen as a way to protect miners' lives, this policy should not be interpreted as an industry commitment to defending human rights and promoting environmental justice. The lives of coal miners were (and are still today) valuable to the mining industry primarily because they provide the needed labor to extract the coal and expand the profits of the company. The irony of the use of the canary metaphor, of course, is that coal was the early driver of the Great Acceleration, the fossil fueled global system that created today's climate chaos disproportionately affecting marginalized populations across the globe, those very populations that have now become the canaries. Nevertheless, there are many stories of coal mining communities (and other environmental justice communities impacted by coal mining and coal plants) that are transforming former coal operations into more sustainable sites by creating solar farms, cultivating urban agriculture, and building transition economies.[10]

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[9] Tamara Natalie Madden designed the cover art for hip hop artist Akua Naru's 2015 album, the *Miner's Canary*. Available at: https://akuanaru.bandcamp.com/album/the-miners-canary-2

[10] Examples include the Navajo/Dine community of the Black Mesa Water Coalition in Flagstaff, Arizona (https://www.yaleclimateconnections.org/2015/08/shifting-from-coal-to-renewable-energy/), the African American residents of the Curtis Bay Neighborhood in South Baltimore (http://www.sierraclub.org/sierra/2016-2-march-april/green-life/baltimore-student-leader-receives-goldman-environmental-prize), the Puerto Rican/Latino residents of Holyoke, Massachusetts (http://valleyadvocate.com/2016/10/31/from-coal-to-sol/), and the Appalachian coal communities organizing Coal River Mountain Watch's Appalachian Stewardship Foundation solar projects, (http://www.crmw.net/projects/steep-show-and-tell-energy-education-and-policy.php).

Despite its limitations, the miner's canary story is one that is often used in African American politics and art—environmental or otherwise—because it makes explicit and it *notices* differential experiences of vulnerability faced by Black people and other people of color in the current global system. But, it is also a call to action, a warning to all of us that these risks will eventually affect us all.

A new canary's song: Black lives, homes, and jobs matter in North Philadelphia

We have many social canaries in our communities informing us that we are surrounded by environmental toxins that are creating bodily and mental disturbances and sending us *all* to an early grave. From melting ice caps to endangered species, nothing sings more loudly then the cultural oppression of women, the militarizing of our boys and men, the exploitation of children, and the gun violence that flourishes globally. We are behind schedule in heeding the voice of alarm. Now more than ever is the time to hear the alarm song and apply the salve that comes from the collective wisdom people of color offer for healing families, communities, nations and the social systems that govern us.

– Loretta .O Payne, Philadelphia Community Activist, 2017

In recent years, I and my students at Swarthmore College have collaborated with African American residents and community leaders in North Philadelphia, and the miner's canary story has been invoked many times as a metaphor describing the vulnerability many people experience. As community leader, .O (her preferred name and spelling) expressed in the above quote the canary story has also been used by community members as a cautionary tale warning us to do something now to protect and preserve the neighborhoods and livelihoods of those who live in the historically Black sections of the city, to preserve them and honor them as beloved sites or *refuges* for living and thriving together. It has functioned as a good story, and one that has inspired me, my students, and our partners and collaborators in Philadelphia to think about who and what are at stake; it has helped us to frame the vision for the kinds of campus-community partnerships that we believe are creating possibilities for collaborative survival. And, it makes a lot more sense to us than the Anthropocene's universalism, a story that leaves little room to *notice* diverse human histories, experiences, and capacities.

The sustainable serenity collaborative[11]

Our community-campus collaboration between Swarthmore College and North Philadelphia was initiated by crossing many borders: geography, race, gender, class, language, and expertise. The collaboration grew out of conversations among students and community leaders at Serenity House (a local community outreach center sponsored by the Arch Street United Methodist Church) about the theory and practice of environmental justice, and the devastation wrought by economic disinvestment, racial violence, and gentrification in North Philadelphia's historically Black neighborhoods. Labeled by some as the city's "most impoverished ghetto," North Philadelphia's 93% African American population struggles with a 51% poverty rate, high unemployment, homelessness, high rates of asthma, and other social problems (Pew Charitable Trust 2016). Together with .O and other community residents, we tried to imagine how we could tackle these deep-rooted social and economic issues using the tools of sustainability, such as building community gardens and installing green roofs. This proved to be a more difficult task than we had anticipated. At one of the first community meetings at Serenity House, a long-time resident confronted us with the obvious limitations of promoting individual lifestyle changes, a staple of mainstream sustainability discourse. He vociferously objected: "How are flower gardens and fancy roofs going to help our community!?"

What had started out as a social gathering to discuss possible collaborations on sustainability projects between Swarthmore College environmental studies students and leaders of Serenity House, ended up in a much broader discussion about poverty, unemployment, urban gentrification and displacement, domestic and police violence, and environmental racism. Despite our confidence in the clear environmental "goods" of gardens, flowers, food co-ops, and other green projects, many residents at the meeting wanted assurance that there would be positive outcomes from university researchers and students coming into their neighborhoods. Some residents said they had witnessed worsening displacement and gentrification as more and more so-called urban greening initiatives made their way into the neighborhood (e.g., green buildings, transportation hubs, community gardens and high-end farmers' markets). All these well-intentioned sustainability goods have contributed to what some refer to as "green gentrification" or "eco-apartheid" because these good initiatives tend to increase property values and can end up pricing out the long-term residents of the region or they can create green eco-fortresses encircled by and dependent on "sacrifice zones" (Anguelovski 2016; Greenberg 2018).

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[11] An earlier version of this section of the essay appears in Di Chiro and Rigell (2018).

Through ongoing conversations, we learned how local residents defined sustainability *on their own terms*. While green initiatives (such as community gardens and farmers' markets) implemented by cities to revitalize the urban environment have been shown to facilitate "green gentrification," this need not be the inevitable outcome. When community residents decide for themselves how a community garden or any other greening initiative would benefit their neighborhood, they engage in self-determination and express a sense of ownership reflecting their own sense of place. Many residents, whose parents or grandparents had come to Philadelphia during the Great Migration from the south in the early twentieth century were excited to share how gardening had been an important part of their family's connection to the earth; they told stories about gathering sweet, home-grown strawberries and recalled the taste of freshly picked collard greens. In our conversations, we discovered that building a sustainable community for Serenity House members was not an abstracted marketing tool to create an urban "sustainability edge" (Greenberg 2015), but a concrete conviction that their lives, memories, and communities *mattered*. In the face of expanding gentrification leading to displacement and the loss of jobs and homes, the local residents were determined to reclaim and regenerate what they referred to as *remnants* of Black culture and community life in this section of Philadelphia. Our Collaborative did not want to repeat or reproduce the colonizing forms of environmental and sustainability engagements between universities and communities (including, for example, a local urban university erecting a "green dorm" by displacing affordable housing units [Heavens 2016, Pew Charitable Trust 2016]). While, at times, these community conversations were uncomfortable for many of the white and more economically resourced members of the Collaborative, we were committed to practicing what Sarah Schulman has referred to as the "degentrification" of the mind (2012). Our comfort, our safety, and our "gentrified happiness," she argues, are "often available to us in return for collusion with injustice. We go along with it, usually, because of the privilege of dominance, which is *the privilege not to notice* how our way of living affects less powerful people" (2012, p. 166, emphasis added). Collectively, our Collaborative works to practice the degentrification of our thinking about sustainability and community development, and to critically engage the "arts of noticing"; it has been sometimes uncomfortable, but always life-enhancing.

Echoing Tsing's idea of the need to restore and create patches or refuges amidst capitalism's ruins, our growing Collaborative discussed ways we could preserve "remnants" of Black community by envisioning and creating North Philly anew. Defining sustainability now became about supporting the collective continuance of the local community, which included creating good green jobs, building affordable housing, developing educational and career opportunities for children and youth, and enabling community investment and engagement in local, democratic decision-making. These discussions sowed the seeds for organizing the Sustainable Serenity Collaborative and identified several sustainability initiatives responding to the community's visions and needs. Among many creative ideas, two have come into fruition: (1) The People's Garden, a community garden established to grow fresh vegetables and flowers and to provide a safe space for children's educational activities and community gatherings, and (2) Serenity Soular, a project whose mission is to launch a local, cooperatively owned solar energy enterprise in the neighborhood (Nembhard 2014), training local youth in solar systems installation and providing affordable rooftop solar for low-income residents. We use the spelling SOULar to emphasize our intention to keep the "soul" in solar energy while we co-create an intersectional approach to sustainability grounded in the values of racial, economic, and environmental justice.

The Sustainable Serenity Collaborative, now in its sixth year, embraces a vision of sustainability that imagines the possibilities of collaborative survival: it resists and contests green gentrification, supports the values of just sustainability, and is driven by the needs and dreams of the predominantly Black, low-income residents of North Philadelphia whose goals are to develop locally owned, culturally relevant, environmentally conscious, and profitable enterprises that would enable the survival of African American histories and lifeways, and create flourishing refuges in this corner of the city.[12]

Old and new stories for social and environmental justice

In closing, I return to the quote by Martin Luther King Jr. at the beginning of this essay. In his iconic "Letter from a Birmingham Jail," addressed to a group of moderate, white clergymen in Alabama who were discomfited with his advocacy of civil disobedience, King laid out his defense of nonviolent resistance to the violence of racism and expressed his disappointment in what he saw as white indifference to the ongoing plight of Black communities. King's oft-quoted statement of the inescapability of human interconnectedness and interdependence, and his criticism of the "three evils" of "racism, excessive materialism, and militarism" detailed in a later speech in Chicago (Kurashige 2012)[13] would today place

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[12] The Serenity Soular vision has been adopted by POWER (Philadelphians Organized to Witness, Empower & Rebuild), an interfaith organization that has recently launched its "Black Work Matters" campaign to promote green jobs training in the renewable energy economy for the most vulnerable sectors of the city's workforce, https://powerinterfaith.org/black-work-matters-green-jobs/

[13] Martin Luther King, Jr. 1967. "The Three Evils of Society", Address at the National Conference on New Politics, August 31, 1967, Chicago, IL https://www.scribd.com/doc/134362247/Martin-Luther-King-Jr-The-Three-Evils-of-Society-1967

him squarely in the ranks of proponents of sustainability, or more accurately, of *just* sustainability. The white clergymen's calls for "unity" and their appeal to "lawfulness" and Kings' call for resistance and social justice resonate with the two contemporary stories I have outlined above describing differing perspectives on the global social and environmental crises facing today's world. One perspective, represented in the story of the Anthropocene, argues that *we* humans are united in our responsibility for climate change and are all to blame for causing this sinking boat. The second perspective, signified by the cautionary tale of the Miner's Canary, argues that some of us are more vulnerable and bear more of the costs of a toxic social and economic system, while others of us benefit from these disparities, blissfully *not noticing* our collusion with injustice through a "gentrification of the mind" (Schulman 2012). Our hopes for building a more just and sustainable future rely on taking seriously the processes of *de*-gentrification of our minds, our neighborhoods and environments, and our policies and actions regarding sustainability. As indicated by the canary story's lesson that the plight of the most vulnerable foreshadows impending danger to all, and by King's exhortation that "whatever affects one directly, affects all indirectly," the paramount message is that we are all interconnected on one planet earth. The fossil fuel-driven global economy, which exploits and profits from the degradation of both humans and non-human nature, ultimately puts all life on earth at risk. To have any chance for earthly survival, we must collaboratively work toward social and environmental justice and a more egalitarian and sustainable world for all.

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