Deep Listening
Tending Future Soil Song

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Soil as a (Living) Archive

The ground is the surface we call home. Inscribed in it is a record of geologic and social life. It is a site of earthly memory. The soil is marked by the now 400-year-long social and ecological crisis of colonial capitalism. Land dispossession, the plantation model of agriculture, chattel slavery, and the imposition of these modes of extraction and unfreedom worldwide leave the planets soils severely degraded. If current rates of degradation continue, the world's topsoil will be gone in sixty years, according to a UN official (Arsenault, 2014).

In the United States, the traces of this wound are everywhere. The event and aftermath of European settlement "considerably eroded and altered the chemistry and structure of soils" (Geleta et al., 2014, p. 625). Reading the ground as an archive, it becomes apparent that the current ecological crisis is rooted in conceiving it as a commodity or resource to be extracted. This colonial and extractive logic of the ground is inextricably linked to a Western European conception of nature and of global racial hierarchy. Theorist Sylvia Wynter (1976) writes that "the New World and its large-scale exploitation by the West...initiated Man's revolutionary new relation of Nature. And the new relation to Nature was a new relation to Other Men". Violences enacted towards Indigenous people whose land was stolen, towards Black people who were enslaved and forced to work the soil, and towards colonized people around the world are coterminous with violences to the soil. The soil is an archive of this global catastrophe.

Soils, however, are not only wrought by past (and present) injustice. As dynamic, lively, and life-giving assemblages, they are also sites of resistance. "The inscriptions on and in the palimpsest of the soil tell narratives of both the wretchedness and the liberatory potency of its humus" writes Filipa César (2018, p. 272), describing agronomist and anti-colonial revolutionary Amilcar Cabral's theorization of soil. In twentieth century Guinea-Bissau, then a Portuguese colony, Cabral studied the effects of colonization on the soil and expounded upon a vision of soil as the product of human, earth, and atmospheric interaction over time, described as "a counter-extractivist mindset, an animistic activation of the soil, a convocation of various knowledges and a negation of coloniality. A soil reclamation" (César, 2018, p. 272).

Soils are ongoing, collaborative, mutually interdependent processes in which minerals, microbes, organic matter, plants, humans, non-humans and atmospheric processes collide. Soil microbial respiration evidences this lively process: soils breathe. I conceptualize soils as living archives, capable of recording the past as well as capable of regenerating, composting, and recomposing. Soils speak to the space in the present shaped but not fully totalized by the past, and to a future which is possible yet unrealized, save for in moments of tending to the collaboration. Tending to soils tends toward a living future, one which is utterly in crisis.

What can the practice of listening to soils, both as historical archives and as living assemblages, do? Two soils, in Illinois and Alabama, both degraded by interconnected monoculture and dispossession, ground this speculative listening exercise.

Deep Listening

I begin with my ear to the earth, face pressed to the dirt in the middle of a corn field behind my parents' home in central Illinois. This is an exercise in deep listening. Deep as in underground, deep as in time, deep as in paying attention to the mediating surface between—between being rock and being human, being bacteria and being bone—and the stories it holds.

The eerily quiet monotone of the monoculture-degraded midwestern soil reverberates hollowly against my face. The corn, glyphosate, and chemical fertilizer regime that the land is subjected to by agri-business farming is an assault on the microbial community of the soil—leaving it half-dead, the image of soil, but without the liveliness that makes it something other than a compacted, chalky substrate. What 200 years ago was some of the most fertile soil in the world is now washed out, cracked, nearly-barren earth. 99.9% of the tallgrass prairie that once covered this land (an 8,000 year old cultural and eco-system) was destroyed by European settlers who drained the swampy areas and turned them to agricultural fields. Settlers and the United States government dispossessed Native peoples from this land through violently-enforced, inequitable treaties and the Indian Removal Act of 1830; this is the ancestral home of Očhéthi Šakówiŋ, Myaamia, Kaskaskia, Peoria, and Kiikaapoi (Kickapoo) peoples (Native Land Digital, n.d.). Now, it is a vast wasteland of dual feed-corn and soybean monoculture production. Government loans and subsidies support the growth of neuro-toxin laden commodities that languish in towering grain elevators until the global price is right.

The destructive Midwest monoculture of the present more than echoes the destructive plantation monoculture of the past. They are, in fact, intimately linked. The Corn Belt got its start as an export center for corn and pork sent to plantation owners in the South who wanted to "minimize operating costs," according to Dr. Sarah Taber (2021, para. 14). Profits truly intensified, however, post-emancipation, when former plantation elite switched to the Jim Crow model of agriculture and intensified racial terror in an attempt to reproduce the economic and cultural system of slavery through the bondage of debt rather than the legal provision of humans as chattel property.

Cotton was the monoculture of the Southern sharecropping regime. Black farm workers were forced to take out loans from the estate owners to pay for housing, seed, tools, and food—all to be paid back in cotton harvest. Estate owners imported huge quantities of cheap degerminated corn from the Midwest as rations to sell to sharecroppers. Taber writes, "What mattered was filling up the land with cotton. That way, there was simply nowhere for anyone to grow food. In this economically stunted region with few stores, poor people had to go through estate owners to buy food. And once they did, they were trapped in debt" (2021, para. 11).

Like the soils of the Corn Belt, the soils of the South are marked by Indigenous dispossession, settler-violence and plantation afterlives. In Alabama, years of cotton monoculture, both pre- and post-emancipation, had depleted the soil that sharecroppers worked in the early twentieth century. This cotton monoculture began just a hundred years prior, when the land was seized through the Treaty of 1832 and Mvskoke (Muscogee) people were removed by acts of terror, violence, and theft on the part of white settlers. The soil holds these stories in its mineral, organic, and microbial arrangement.

When George Washington Carver (Figure 1), a Black agronomist at the Tuskegee Institute, arrived in Alabama in 1896, he saw that the soil degradation and the environmental regime of the sharecropping system were pillars that cemented a system of bondage for Black southerners. The soil degradation was coupled with the injustice faced by sharecroppers. Carver's mission was to help Black southern sharecroppers deal with and regenerate the degraded soils they were impelled to work as a means to resist the Jim Crow oppression they faced[1]. Much like Amilcar Cabral, Carver understood the politics of soil health, the liberatory potential of tending to humus, and "the mutual dependency of the animal, vegetable, and mineral kingdoms" (Kaufman, 2019, para. 24). Carver advocated for soil-regenerative farming practices like composting, crop rotation, and planting legumes like peanuts for their soil nitrogen-fixing properties. Activist-visionary Jim Embry (2022) argues that Carver should be remembered as the grandfather of the regenerative agriculture movement. Although he was a scientist, Carver's grounded vision of soil health came out of his interdisciplinary mode of inquiry and attention to the world around him. Carver cultivated his relationship to plants and soils through careful observation with an artist's attention, a deep listening practice. He began his career making botanical paintings and then transitioned to agronomy. Carver was "someone who... says he talked to the plants, he talked to the peanut plant and the peanut plant revealed its secrets to him" (Embry, 2022). Scientists now understand that some plants "need to be fertilized with nitrogen, [but] peanuts can produce their own, thanks to a symbiotic relationship with bacteria that live

1 Perhaps this is what Amilcar Cabral would think of as the liberatory potential of humus.

on their roots" (Kaufman, 2019, para. 16). Carver lacked the technology contemporary soil scientists have, but this was no obstacle to him recognizing the benefits of peanut plants to the soil. It was his attention to and tending towards—his practice of deep listening for mutual dependence—that gave rise to his knowledge.

Listen.

The earth hums in polyvocal song as you tend to and towards it. The hum you hear is the sound of soil microbes breathing. A microbial chorus (Figure 2) compos(t)ed in multispecies mineral collaboration. This hum is the precondition of your life. The hum of humus in human.

(Future) Soil Songs

A recent development in soil health analysis—the measurement of soil microbial respiration as an electrochemical signal—makes the sonification of the soil's song for human audition possible (Mohamed et al., 2021). Or to put it more simply: what soil microbes exhale can be measured by an electrical current that can be amplified and turned into sound. The more microbes breathing, the more current, the more sound. Breath being the basis of song, soil microbial respiration being an indicator of overall soil health, the hum produced offers evidence of the lively activity of the soil. It also offers the possibility of registering the effects of regenerative soil practices in the present as the seeds of songs produced in the future.

I use this potential sonification as a speculative exercise: how does listening to the soils' song open ways of thinking about the collaborative nature and temporality of soils as living archives? It takes a thousand years to regenerate three centimeters of topsoil. Can the slow rebuilding and caretaking of soils (always a collaboration between humans and the earth) be thought of as a practice of producing future-songs? What, for example, would it take to transform the depleted Illinois soil and its barely audible hum into a rich chorus? What political transformations are needed to tend to soil health? What human social relations? What relation to the earth? What types of land tenure? What histories must be contended with?

Human-(Western)Man=Hum

Humans and soil are deeply and inextricably linked. The word human shares a Proto-Indo European root with the word for soil, humus: "(dh)ghomon-, literally 'earthling, earthly being" (Online Etymology Dictionary, 2021). The treatment of soils as a resource to be extracted is concomitant with a Western worldview that defined white people as (hu)Man and everyone else as Other. Might humus offer grounds for an alternative conception of an earthly "we," rather than the "ideology of humanism that whilst it saw itself as a universal, it was universal only in the context of a WESTERN-DOMINATED WORLD" (Wynter, 1976)?

Composing soil songs will require composting and a transformation of not only the relations of waste, caretaking, and maintenance work, but also those of debt, property ownership, and unfreedom. Wynter (1976) writes that the conditions giving rise to Universal Man as white man were concretely global. They were the material relationships of colonization

and imperialism. Thus, altering the human must also require concrete, material, global shift—an alteration of the humus. Deeply listening to the soil and tending future soil songs involves simultaneous movements of regenerating the soil and redressing the historical and political injustices that produced this degraded soil and this degrading culture of Man.

Soils are not inert. They are not only mineral and organic, but lively and political. Soil is the infrastructure of life, its song tending us to the earth. What does care, justice, and responsibility to current and future humans sound like when tending to the soil as archive and as song?

Funding Statement
This research received no funding from any funding agency in any sector.

Conflicts of Interest
The research was conducted in the absence of any conflicts of interest.

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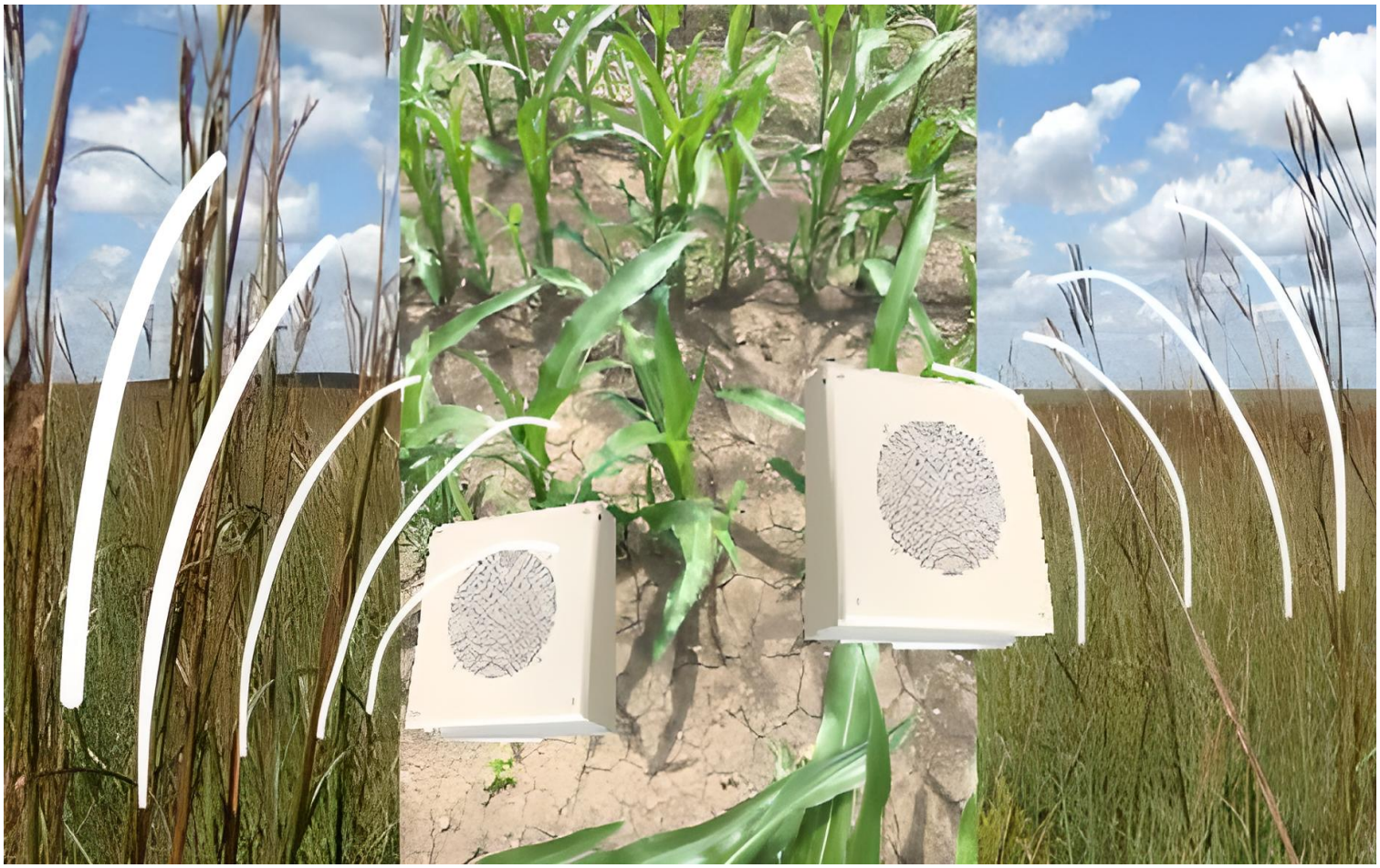
Figure 1

George Washington Carver

Note. George Washington Carver, full-length portrait, standing in field, probably at Tuskegee, holding piece of soil. Image by Frances Benjamin Johnston, 1906, Library of Congress, Prints and Photographs Division. In the public domain. http://www.loc.gov/pictures/item/95507555/

Figure 2

Microbial Chorus



Note. Composite image by RL Martens.

About the Author

RL Martens is a conceptual artist and transdisciplinary scholar. They perform historical, place-based, and often idiosyncratic research, producing ceramic objects that act as mnemonic devices and tools for thinking, in addition to text, images, and video. Recent publications include “Digging and the Doctrine of Discovery,” a pamphlet on ceramist’s responsibilities to the land, and the essay “Material Witness: Sediment and Carceral Architecture in Lorton, Virginia,” published in Room One Thousand. Martens is a founding member of Urban Soils Institute’s Art Extension Service, and helped design Project: Soils, a collaborative initiative between artists and soil scientists.