Sketches on
Everlasting Plastics

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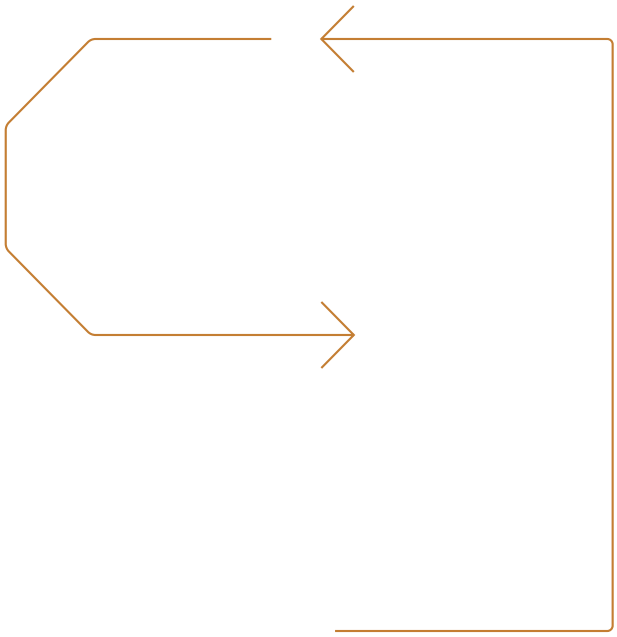

March 19, 2023
Cleveland, Ohio

Just over a month ago, a Norfolk Southern freight train derailed in East Palestine, Ohio, a village ninety miles southeast of Cleveland—where we live—and fifty-one miles northwest of Pittsburgh, Pennsylvania. The freight carried, among other things, vinyl chloride, a chemical used in the production of the petrochemical polymer polyvinyl chloride, more commonly known as PVC. In a unilateral effort to contain the massive spill, local law enforcement, the fire department, Norfolk Southern, and state government lit a controlled fire without consulting the Environmental Protection Agency, residents of East Palestine, or national experts. In Cleveland, we paused, wondering if we would be affected by the resulting malevolent cloud or if our water drew from the now-contaminated Ohio River. We dwelled on the verisimilitude of the movie *White Noise*, recently filmed around Northeast Ohio, and were outraged by the bipartisan failures that brought us to this moment. We wondered if this was our Chernobyl. We were reassured, terrifyingly, that the airborne poisons were heading not toward us but east, past Pittsburgh, over central Pennsylvania and into New York, and that this cloud would disperse over the ocean. We learned that the watershed poison was also not heading toward us and was instead heading southwest, toward Cincinnati, cresting over Kentucky and

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A large black cloud of toxic chemicals as seen by a drone above the town of East Palestine, Ohio. © RJ Bobin.

under Illinois, where it would yield its toxic contents into the Mississippi River.

Perfected in the United States in the early 1900s, petrochemical polymers, collectively and commonly known as plastics, were embraced as revolutionary materials. Intended to protect the so-called "natural world" and decrease socioeconomic barriers to accessing goods previously only available to the wealthy, plastics were imagined to mimic the materials plundered from the earth, like ivory, coral, and tortoiseshell—and, in many cases, they succeeded. In this way, plastics entered the consumer market as finished goods, ready to use. Plastic thinking abandoned material lineages; readymade goods, conjured from a perceived nothingness, seemed to erase the toxic legacies of extraction—of people, labor, and land—entrenched in settler colonial material culture.

As plastics proliferated over the past century, alongside and in tandem with wars, viruses, and technological advancements, cultural attitudes shifted toward disposability, single-usage, and abstraction. Today, plastics exist as both a feared anathema and an accessible material for experimentation and social welfare. Acutely visible yet unsettlingly unseeable traces of plastics course through our veins, waterways, and air molecules. As in East Palestine, urgency emerges most often when toxins are perceivable, while passive pollutants pose silent dangers. The material exists all around us, simultaneously enabling and threatening every part of modern life. So, how can we live without plastics? But, also, how *can* we live without plastics? Each emphasis indexes a different set of concerns.

The following *Sketches*, emerging from a collaborative editorial process, have informed and continue to inform our way of thinking as we realize the exhibition *Everlasting Plastics*. Using the exhibition as a point of departure, we connected with scholars, poets, architects, activists, and artists to *sketch* on *Everlasting Plastics*, encouraging authors to dig deeper, to push at the project's edges and rupture its boundaries, expanding the ideas and stakes

of the exhibition. Through the resulting collection of ideas, brief outlines, and thoughts, we begin to form an epistemology of plastic. Texts build off of one another, contradict each other, and embrace the unfinished, creating a boundless space that demands a multiplicity of perspectives. We intend for these *Sketches* to illuminate and unsettle our relationships with plastic, shaping a more expansive way to think about the material, its evolution, and its uncharted lifespan.

While rooted in an examination of plastics, these *Sketches* also model a spectrum of methodologies that allow us to see what other materials, people, disciplines, legacies, and attitudes plastics entangle: some center a particular object, while others expand on a site; some stay with the human body, while others consider the relations plastics knot together and are knotted within. Without leveraging these ways of thinking to place demands on our systems of production and cycles of solution-driven waste management, toxicity levels will only continue to rise. This is already evident—in East Palestine, in the Texas-sized Great Pacific Garbage Patch, in our endocrine systems—and will only continue until we ultimately extinguish even the possibilties of new ways of living. Working closely with Isabelle Kirkham-Lewitt, Joanna Joseph, and Meriam Soltan, the brilliant editors at Columbia Books on Architecture and the City, we reframed *sketching* as a discursive process, as a way of writing and rewriting together—as a gesture in line with plastic's unknown futures.

In ideating how these *Sketches* might emerge, we invited writers whose work expands notions of material relations, forefronts criticality and care, and heightens contradictions. We remain totally indebted to the work and thought of others, including Max Liboiron, who interrogates the colonial frameworks that inform contemporary research around plastic; Mel Y. Chen, who articulates a case for the animacy of matter, materials, and non-humans, allowing for more expansive kinships; Paul B. Preciado, who describes the plasticity of the body in relation to gender

and sexuality; Fred Moten, who, in writing about plasticity as it relates to and is endured by the Black body, demonstrates how plastic thinking extends beyond material expertise; Vanessa Agard-Jones, who examines racialized negotiations between life and non-life; and Andrea Wolk Rager, whose course "Plastocene Era: Art, Plastics, and the Future of the Planet," at Case Western Reserve University, carved space for us to reflect on this subject with the enthusiastic minds of students.[1]

We write this from Ohio, a state that leads in petrochemical polymer production; from within the United States of America, a country which sensationalized plastics; and from a generation that has repeatedly been told that it was possible to reduce, reuse, and recycle our way out of this crisis. Our hope is that *Everlasting Plastics* provides a shift in this tired rhetoric—that, through these *Sketches*, we expand our ways of thinking and allow for a more confrontational, more tangible, more social, more plastic approach.

Tizziana Baldenebro and Lauren Leving

1 See for instance Max Liboiron, *Pollution Is Colonialism* (Durham, NC: Duke University Press, 2021); Mel Y. Chen, *Animacies, Racial Mattering, and Queer Affect* (Durham, NC: Duke University Press, 2012); Paul B. Preciado, *Testo Junkie, Sex, Drugs, and Biopolitics in the Pharmacopornographic Era* (New York: Feminist Press, 2013); Fred Moten, "The Touring Machine (Flesh Thought Inside Out)," in *Plastic Materialities: Politics, Legality, and Metamorphosis in the work of Catherine Malabou*, eds. Brenna Bhandar and Jonathan Goldberg-Hiller (Durham, NC: Duke University Press, 2015); and Vanessa Agard-Jones, "Bodies in the System," *Small Axe* 17, no. 3 (November 2013): 182–192.

The Notes Within My Blood
by RA Washington

> Any attempt to solve the ecological crisis within a bourgeois framework must be dismissed as chimerical. Capitalism is inherently anti-ecological. Competition and accumulation constitute its very law of life, a law... summarized in the phrase, "production for the sake of production." Anything, however hallowed or rare, "has its price" and is fair game for the marketplace. In a society of this kind, nature is necessarily treated as a mere resource to be plundered and exploited. The destruction of the natural world, far from being the result of mere hubristic blunders, follows inexorably from the very logic of capitalist production.
>
> Murray Bookchin

Within my blood [METADATA]
There are strains of promises
Made by a budding nation
To my once enslaved family

[Animal and human investigations indicate that the impact of trauma experienced by mothers affects early offspring development, but new research is also discovering that it is also actually encoded into the DNA of subsequent generations.]

RA Washington is a polymath living on Cleveland's West Side. Washington's work spans two decades and several genres. His most recent work includes the novels *CITI* and *FOUR INTERIORS* (Outlandish Press, 2017, 2018); a collection of poems, *BLACK EUNUCH* (Outlandish Press, 2018); and two memoirs, *BODY* and *BALDWIN NOTES* (Outlandish Press, 2018, 2021). He is the founder/composer of the Afrofuturist music collective Mourning [A] BLKstar and is the co-curator of the longstanding futurist record label, CLEVELAND TAPES.

[In a study conducted by the Henry Ford Cancer Institute, 77 percent of people who were tested were found to have microplastics in their bloodstream.]

Work is at the stitching
Of this ol' country flag
The buildings are upon my back
The land is underneath my nails.
Industry looms along history
We are the descendants of popular notions
Of advancement.

[A study looked at communities located within 2.5 miles of refineries, including those associated with plastic production, and found that these communities were disproportionately non-White, with the result that BLACK people were being exposed to about 1.5 times more particulate matter than White people.]

And what will we build upon this legacy
Of torment?
Where land is expanded, it's BLACK oil
Blood is mined
Ingenuity is funded for barons
To make products to keep power.

We will power machines by burning blood
Oh the engine!
We will make containers with the waste
Polymer hate needles without future regard.

[Microplastics have been found at the top of Mount Everest and on the ocean floor. They've been found in a large, remote European ice cap. They've been found in the placenta of fetuses.]

The human invention celebrates our dominion
Over Earth

look at these Black bodies as property
Surely it is the land that is *ours* as well?
And over 200 years we see it plainly
Let us mortgage our future for capital's sake.

[In Sojourner dialect]
Corner store low
This is where I go
For there is no fresh grocery
Along the miles near me.

JAZZ
Cadence

Worked at a factory that closed its doors
So what I used to buy
Seems lavish compared to the choices
Left to me.

A bubble of plastic
Wrapping me
Memories not mine haunting me
The plastic of everything
Connected along this history.

Call on higher power

[Microplastics are small pieces of plastic—anything that's less than 5 millimeters in size—that break off from larger pieces of plastic. The fact that they're so small makes them dangerous: they're able to permeate tissue and get stuck in our organs, finding their way into places that bigger pieces of plastic can't access.]

Call on the holy
This everlasting plastic
Microparticles inside of me.
How's all this connected?
Ain't too plain to see?
So let me add a bit of metatext

Hints so you can follow me.

Heather Davis is assistant professor of culture and media at The New School in New York whose work draws on feminist and queer theory to examine ecology, materiality, and contemporary art in the context of settler colonialism. Her most recent book *Plastic Matter* (Duke University Press, 2022) explores the transformation of geology, media, and bodies in light of plastic's saturation. Davis is a member of the Synthetic Collective, an interdisciplinary team of scientists, humanities scholars, and artists, who investigate and make visible plastic pollution in the Great Lakes.

Eating the Future
by Heather Davis

What does it mean to say that plastic is "everlasting"? It is certainly chronophagic, a time-wasting—and even time-eating—material. Composed of fossil fuels, plastic requires millions of years to make. It is then often used for only a month in the form of packaging or, in the case of more durable consumer goods, like clothing, for only a few years before breaking or tearing. This cycle of production compresses deep time into an eternal—and eternally replicating—present. In fact, plastic encourages a fleeting present that consumes time. And then, what of the future?

How long plastic will endure is an open-ended question, unknown and subject to many variables, including chemical composition, exposure to sun and wind, erosion, the kinds of animals that encounter it, and where it ends up. While various forms of bacteria and mycelium have now evolved to feed off of the vast stores of energy contained in plastics, pointing to an unknown horizon for the potential decomposition of plastic, these are not solutions to the wider problem of plastic pollution.[1] The duration of most plastics and their chemical legacies are predicted to extend well beyond the lifespan of any person, and implicate all beings, many generations into the future. Plastic is thus central to worlds to come—even if production were to end now. "Everlasting," then, could be understood not only in geologic time but also in the time of people's lives: "everlasting" as a kind of inheritance.

Due to this recalcitrance, plastic deeply conditions the possibilities of intergenerational time. The cultures of extractive capitalism and colonialism attendant to plastic will remain a material reality for a very long time. This is happening on an intimate level through the imposition of petrochemicals into people's bodies. Some endocrine-disrupting chemicals are known to alter the gametes of fetuses, meaning that a person two generations down the line could be affected by chemical exposure. Plastic is claiming and conditioning future bodies before they are even conceived, and this is happening differentially, with Black, Indigenous, and low-income communities most affected. In this way, the ongoing realities of settler colonialism and the afterlives of slavery are being written into the future, eating the future just as they have ravaged the past.

People will no doubt find ways of thriving, but the material enmeshment of fossil fuels with racist, classist, and colonial policies persists in these chemical legacies. "Everlasting," then, might warn of the continued reinvestment in the production of plastics and its colonial frameworks: "everlasting" not as a statement of eternity but as a conditioning of the future for so many beings, the promise of a material that has come back to haunt our ongoing present.

1 For evidence of the various kinds of "plastic-eating" bacteria and fungi, alongside the limitations of this approach, see Carrie Arnold, "This Bug Can Eat Plastic: But Can It Clean Up Our Mess?" *National Geographic*, April 24, 2017, https://www.nationalgeographic.com/science/article/wax-worms-eat-plastic-polyethylene-trash-pollution-cleanup; Kumar Harshvardhan and Bhavanath Jha, "Biodegradation of Low-Density Polyethylene by Marine Bacteria from Pelagic Waters, Arabian Sea, India," *Marine Pollution Bulletin* 77, no. 1–2 (2013): 100–106; Jonathan Russell et al., "Biodegradation of Polyester Polyurethane by Endophytic Fungi," *Applied and Environmental Microbiology* 77, no. 17 (July 2011); Jun Yang et al., "Evidence of Polyethylene Biodegradation by Bacterial Strains from the Guts of Plastic-Eating Waxworms," *Environmental Science and Technology* 48, no. 23 (2014): 13776–13784; Shosuke Yoshida et al., "A Bacterium That Degrades and Assimilates Poly(Ethylene Terephthalate)," *Science* 351, no. 6278 (March 11, 2016): 1196–1199.

Crude Sedimentation

by Laleh Khalili

For two sweltering summers in 1989 and 1990, I worked as an engineer at Amoco's Chocolate Bayou plant in Alvin, Texas, near Galveston. The plant produced olefins and polypropylene, materials needed to manufacture high-performance plastics used in auto parts, fabrics, carpets, and other synthetic consumer products. It had a water filtration pond in the back where an alligator that the workers had named Oscar came and went at leisure. Everything about the plant is entangled in a palimpsest of histories that speak of extractive politics, exploitation, and a recklessness with human futures. Excavating these historical layers tells us something about the complexion and contours of power in each era and how they are built on violence near and far.

The plant's most recent history concerns its acquisition by British petrochemical company Ineos in 2005. Ineos has the dubious distinction of its CEO recently arguing for the necessity of fracking in the British Isles, despite the British government ending support for fracking in 2019.[1]

Immediately prior to the Ineos sale in 2005, there was an explosion in the Chocolate Bayou plant. There were no reported injuries, but "plumes of smoke" and toxic materials were released into the area.[2] While the flat wetlands surrounding the plant are not densely populated, there are a few local residents who have founded small towns in the interstices of the petrochemical plants in the area.

Laleh Khalili is the author most recently of *Sinews of War and Trade: Shipping and Capitalism in the Arabian Peninsula* (Verso, 2020). She is currently working on a large project on the entanglements of oil in the worlds of finance, banking, shipping, and work.

Frequently, alligators and other wildlife wander across the roads and sometimes collide with automobiles driving through. The reports about the explosion said nothing about the resident alligators.

Digging further down, one finds a National Labor Relations Board case filed in 2000 by the union representing workers at the plant.[3] Employees had reported BP Amoco for the unlawful dismissal of some thirty workers when the two companies merged that same year. I remember from my time there how knowledgeable the men in the "back of the plant" were, how wonderfully sardonic, how forgiving of us inexperienced engineers, with our massive self-importance. My conservative peers in the "front of the house"—the engineering professionals soon to graduate from Schools of Mines and various Texas chemical engineering departments—meanwhile, whined about the difficulty of "getting anything done" with a union workforce that held its own. The case closed when the company settled with the workers. The terms of the settlement were not divulged.

Digging still deeper, one finds that the plant was first opened in 1978 by Standard Oil of Indiana (soon to be rebranded as Amoco). Graphs tracing the manufacture of plastics show a dramatic spike after 1975. Like so many other hydrocarbon ventures—refineries and transport networks, financial derivatives and options, new models of oil pricing and insurance, and ultra-large crude carriers—the manufacturing of plastic skyrocketed after the nationalization of Middle Eastern oil. In response to what historian Chris Dietrich has called "the most concentrated non-violent transfer of global wealth in human history," new modalities of accumulation of surplus value emerged in the Global North.[4] The manufacture of plastics was one such new modality, adding value to the crude oil extracted from sovereign nations of the Middle East, with the profits safely ensconced in the global North.

Still further, we discover that, in 1967, Amoco (which was still called Standard Oil of Indiana at the time) acquired the land in Alvin. That same year, because of the June War between Israel and its neighbors and the closure of the Suez Canal, there was a brief reduction in the volume of oil produced. The US excess crude oil capacity had to make up for the Middle Eastern oil lost to the market. It was during this Texas oil bonanza that Amoco acquired the land for the plant.

There are layers and layers still to recover. There is the Texas City disaster of 1947, which occurred just a scant thirty miles away from Chocolate Bayou, and the Great Galveston hurricane of 1900. Both crises redrew the maps of life, work, labor, and community in the region. There is the fact that the area originally belonged to Stephen Austin, the city's namesake and the so-called "father of Texas." The acclaim bestowed on the man notwithstanding, he is best known for bringing slaves into Mexican-controlled Tejas, despite the Mexican government's opposition to slavery, and for his attempts at exterminating the Indigenous Karankawa people.[5] Enslaved Africans produced cotton on Austin's Peach Point Plantation (which was later passed on to his sister). There are still public buildings called "Peach Point" thirty miles away from Chocolate Bayou.

The political and legal indulgences that granted the manufacture of plastics in a specific place have an accumulated history and a leaden ideology that grow in a substrate of exploitation and cruelty, absent of care. Chocolate Bayou, the freshwater river that collects pollution from the densely placed petrochemical plants near it and dumps it in a bay near Galveston, lazily meanders through these strata of time and of social relation.

That I, an Iranian woman who arrived by sheer happenstance in Texas in 1985, would end up working on the shores of this river years later, also speaks to other buried histories that are inevitably tangled up with fossil extraction, imperial power, and political cataclysms.

Peach Point Plantation, Fort North elevation, date unknown.
Courtesy of the Texas Historical Commission.

1 PA Media, “Ineos Wants to Drill UK Fracking Test Site in Attempt to Show It Is Safe,” *Guardian*, April 11, 2022, https://www.theguardian.com/environment/2022/apr/11/ineos-wants-to-drill-uk-fracking-test-site-in-attempt-to-show-it-is-safe-jim-ratcliffe.

2 “Fire at BP Subsidiary Nearly Extinguished in Texas,” *Firehouse*, August 11, 2005, https://www.firehouse.com/home/news/10507453/fire-at-b-subsidiary-nearly-extinguished-in-texas.

3 BP Amoco Chemical - Chocolate Bayou and its successor INEOS USA LLC, 16-CA-020258, https://www.nlrb.gov/case/16-CA-020258.

4 Christopher Dietrich, *Oil Revolution: Anti-colonial Elites, Sovereign Rights, and the Economic Culture of Decolonization* (Cambridge: Cambridge University Press, 2017), 4.

5 Gerald Horne, *The Counter-Revolution of 1836: Texas Slavery & Jim Crow and the Roots of US Fascism* (New York: International Publishers, 2022).

Aesop Condoms
by Aurelia Guo

One night, while dancing, she fell off the stage and crashed onto a customer

a body clad in a resilient gleam

acting as a tantalizingly flimsy barrier

Strange hands. Inquisitive hands. Dirty hands.

A large number of fancy articles, such as chessmen, thimbles, buttonhooks, umbrella and parasol handles, paper knives, baby rattles, dolls’ heads, pocket rules, card receivers, etc. are also made from it.

Perhaps celluloid’s greatest impact was serving as the base for photographic film. Here celluloid’s gift for facsimile achieved its ultimate expression: the complete transmutation of reality into illusion.

They were bombarded by images of all times and places, the fantastic or exaggerated as well as the authentic

that could take on bright colours, remain crystalline clear, or be puffed up with air

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It is surprising how quickly human beings get used to better circumstances

Masks, headgear, clothing, and costumes (ape, dragon, banana)

how thoroughly plastic would permeate their lives, even eventually their bodies

in hazy zone where balloons, UFOs, and missiles fly

the "trivial" and "futile" pleasure of inhabiting that moment

A transformative mask is split along the vertical axis, allowing the two halves to fold in to meet along the dividing line, and to fold out to reveal another mask—which can itself be similarly split and concealing

A homemade abortion device based on a similar design from the 1970s—Cabinet with implements—steel, glass, rubber, & plastic

shop-soiled storefront mannequins sourced from surplus stores and charity shops

Opium poppy exuding fresh latex from a cut

[N]ature has been knitting polymers since the beginning of life. Every living organism contains these molecular daisy chains. The cellulose that makes up the cell walls in plants is a polymer. So are the proteins that make up our muscles and our skin and the long spiraling ladders that hold our genetic destiny, DNA.

A material epitomizing inferiority

The mountains of waste in non-regulated dumps are haunted by waste pickers who are often not efficient in collecting plastic, which is sometimes as light as the wind

"Plastic has climbed down, it is a household material."

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Advertisement for DuPont Cellophane c. 1955.

Adam Hanieh is professor of political economy and global development at the Institute for Arab and Islamic Studies, University of Exeter. He is author of *Money, Markets, and Monarchies: The Gulf Cooperation Council and the Political Economy of the Contemporary Middle East* (Cambridge University Press, 2018), which won the 2019 British International Studies Association, International Political Economy Group Book Prize.

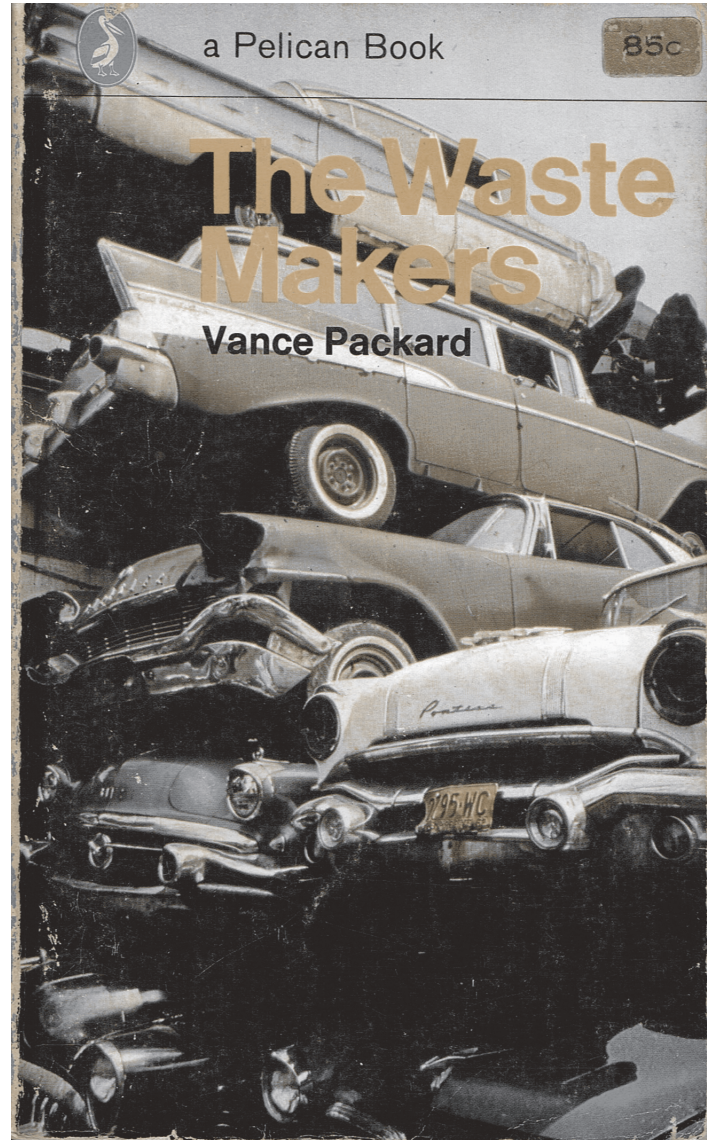
The Making of a Synthetic World
by Adam Hanieh

In the decades immediately following World War II, the rapid spread of synthetic materials derived from petroleum colonized all aspects of everyday life. These new petrochemicals reshaped the cultural practices and material products associated with the "American Dream." At its core, the petrochemical industry represented a qualitative shift in *how we produce*. The functional attributes of natural materials, such as wood, glass, paper, natural rubber, natural fertilizers, soaps, cotton, wool, and metals, would now be served by plastics, synthetic fibers, detergents, and other petroleum-based chemicals. This was the beginning—proclaimed a *Fortune* magazine headline in 1950—of the "Chemical Century."[1]

As injection-molding machines were developed through the 1950s and 60s, plastics enabled the automated fabrication of cheaply reproducible components that transformed whole branches of industrial production. Akin to modern day alchemy, a bag of small pill-like thermoplastic pellets could be transformed into any simple commodity with the appropriate mold. Once a mold was set, there was little extra cost to manufacturing each item—not only dramatically reducing the need for labor but also encouraging enormous increases in commodity output.

As huge quantities of new and easily reproducible synthetic goods displaced natural materials, corporations were faced with the obstacles of limited market size and the restricted needs of the postwar consumer. Ever-accelerating quantities of waste, inbuilt obsolescence, and automated production became the hallmark of capitalist manufacture—a situation presciently narrated by Vance Packard in his 1960 classic, *The Waste Makers*. As Packard noted, the solution to this dilemma was closely connected to the emergence of another "new" industry: advertising, which aimed at inculcating the mass consumer "with plausible excuses for buying more of each product than might in earlier years have seemed rational or prudent."[2] Wants became needs, with the malleability of desire driving an ever-present disposability—a fickleness ultimately aimed at speeding up the circulation of commodities. But branding needed a "skin," and advertisers turned, once again, to plastics for a solution. The pervasive supply of cheap and pliable petrochemicals enabled a vast expansion in packaging and labeling, which soon came to encase all consumer goods. Packaging quickly became the largest end-use for plastics, now making up more than one-third of the current demand for global plastics.

This narrative points to the real problem with fossil fuels. Having become so accustomed to thinking about oil and gas as primarily an issue of energy and fuel choice, we have lost sight of how the basic materiality of our world *literally* rests upon the products of petroleum. These synthetic materials drove the postwar revolutions in productivity, labor-saving technologies, and massified consumption. Today, it is almost impossible to identify an area of life that has not been radically transformed by the presence of plastics and petrochemicals. These synthetic products have come to define the essential condition of life itself—they have become normalized as *natural* parts of our daily existence. This paradox must be fully confronted if we are to move beyond fossil fuels.



Cover of Vance Packard, *The Waste Makers* (New York: Pelican, 1960).

1 "The Chemical Century," *Fortune* 41, no. 3 (March 1950): 116–121.
2 Vance Packard, *The Waste Makers* (New York: David McKay, 1960), 29.

Hard Mother
by Anjuli Fatima Raza Kolb

Last night I was in them guts
Slimm Calhoun

You think I'd leave your side baby
You know me better than that
Sade

Most spinal catheters—for example, those used to deliver epidural anesthesia during childbirth—are made of polyamide resin, polyurethane, and nylon block copolymers. By the time my catheter was placed between the dura mater (hard mother in Latin, from the Arabic al-'umm al-jāfiya) and the ligamentum flavum, I also had in my body a dinoprostone suppository encased in a "knitted polyester retrieval system," an IV line (polyethelyne) in my forearm hooked up to a bag (PVC) of saline, and a catheter (plastic) to eliminate urine. I was girdled in a poly-blend "stockinette" (its plastic packaging read "In-Place Queen") to hold the disposable plastic-housed tocodynamometer tracking my contractions. When she was out, the baby's cord was clamped with a disposable plastic alligator clamp, and heart rate monitors were taped to her chest with plastic tape. She was outfitted in a standard-issue newborn hat (poly-blend) and weighed in a plastic scale next to an (opened) AirLife Tri Flo Single Use Suction Catheter (PVC) in case she needed naso-gastric

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suction (she didn't). I needed two stiches (Vicryl, a dissolving polyglactin copolymer). I made everyone crazy looking for a pink ethylene-vinyl acetate slipper I lost during labor. When we couldn't find it, I threw the other one out. The placenta is in the freezer in a plastic take-out container, waiting to be planted under a tree when the ground thaws in "spring." The tree will remain long after we both die. So, of course, will the plastics.

This is my homoreproductive Anthropocene confession. I could do this same bit about pump parts, the baby's infinite stuff, my sex toys, the inconceivable volume of plastic I used to inject hormones while reading pamphlets in the fertility clinic about reducing exposure to plastic if you are having trouble conceiving. When I surveyed a group of mothers with same-age babies, all of whom had been living intentionally low-waste lives, they reported trashing an astonishing amount of plastic since giving birth. Every postpartum pad in a plastic wrapper, the tear-off tops of breastmilk bags, the packaging of premium "sustainable" diapers, the bubble wrap swaddling eco-friendly baby dishes, on and on. More arresting than the compendium of plastics was the intensity of affect around this waste: shame, panic, horror, guilt—a feeling of being trapped, of creating further inescapable traps. "Don't blame/ the Junk for being discarded," Tommy Pico reminds us.[1] Can we live without this stuff? Obviously. What is the material vanishing point of any individual effort? I wanted to give birth at home but couldn't. What is "couldn't"? What threshold of risk? Of pain? Hers, mine? What is an organic wooden exersaucer? Why does it cost 1001 dollars.

We've made things possible, we've made other things impossible. Reproductive freedom since the turn of the century has increasingly meant—especially for queers—less body, more plastic. The vial. The injection pens. The dish. The tubes. The romance—so many forevers. Almost none of this material, especially the medical waste, is recuperable. All of it will end up pulverized in the guts of living beings. Almost all of us have microplastics in our blood. They flow

alongside the cellular threads the baby left in me, and they will flow in her blood, where my cells linger also.

A single hysterectomy, the second most common surgical procedure among women in the US, produces nearly twenty pounds of waste.[2] Considering the formation of a "way out" in the absence of a way out (say, through a pelvis made plastic by relaxin), Catherine Malabou writes, "Plasticity appears diametrically opposed to form… [T]he formation of a new individual is indeed this explosion of form, an explosion that clears the way."[3] For birthing parents, this way-clearing is not just physical; it is also profoundly cognitive. We know full-time caregivers experience a radical return to accelerated neuroplasticity, almost as rapid as their own infants'—but how we metamorphose or decompose into elements-in-formation is as difficult to quantify as it is to describe. Our containers rip, our minds unravel and braid themselves into novel, unrecognizable patterns. Our senses transform, including heightened hearing acuity and a more focused and purposive sense of smell. This total liquidation is normal, we are told.

"The body, bearing something ordinary as light/ Opens," writes Aracelis Girmay, of childbirth. "This/ fact should make us fall all/ to our knees with awe." And so it does, in all the ways. We melt and merge, become our own guts, our legs go limp and plastic, bathed in the pink glow of a plastic LED light brought from home for vibes. Remaking the sense of what accumulation might mean, Girmay speaks of the "the stacks and stacks of near misses/ & slimmest chances that birthed one ancestor into the next and next… how improbable it is that this iteration of you or me might come to be at all…. —& even last a second."[4] The duration and vastness of climate change are hard for the mind to compass. Critics liken the trying of it to sublimity, an impossible and unmediated witnessing of nature in all its terror and all its perfection. The ancestors through her, the baby is born into a trash-filled world, beneath a bright elastic sky, amid a pile of trash—it dysregulates the mind, the climate sublime's inverse. Birth is a visceral experience

not just of the body's plasticity but also of time's—the golden hour, the first latch, the shortest joy, her long life, inshallah, the everlasting waste.

1 Tommy Pico, *Junk* (Portland, OR: Tin House, 2018), 7.
2 Cassandra L. Thiel et al., "Environmental Impacts of Surgical Procedures: Life Cycle Assessment of Hysterectomy in the United States," *Environmental Science and Technology* 49, no. 3 (2015): 1779–1786.
3 Catherine Malabou, *Plasticity at the Dusk of Writing: Dialectic, Destruction, Deconstruction*, trans. Carolyn Shread (New York: Columbia University Press, 2009), 68.
4 Aracelis Girmay, *the black maria* (Rochester, NY: BOA Editions, 2016), 100–101.

On the Plasticity of Plastics
by Carolyn L. Kane

> The plastic configurations of our neural connections... are the forms of our identity. Plasticity, then, is the transcendental structure of our existential experience.
> Catherine Malabou

No laboratory of the future is possible without the stuff of the past. The conditions of possibility for any "new" technology always derive from the present. Plastics are no exception.

Embraced by the Western world in the mid-twentieth century as something of a modern panacea, plastics promised to transform human nature and society through synthetic chemistry. Indeed, plastics have had enormous cultural, medical, and technological benefits, from electric wire insulation to vinyl blood bags for safe transfusions and light-emitting polymers for colored light in computing. And we might have failed to recognize just how radically they have reconfigured our everyday lives if they had not also come under the crosshairs of health and environmental advocates.

Critiques of plastic first emerged in the 1960s. Around the time pink flamingos and synthetic leather showed up on our lawns and our bodies, scientists began to link the so-called miraculous substance to acute environmental

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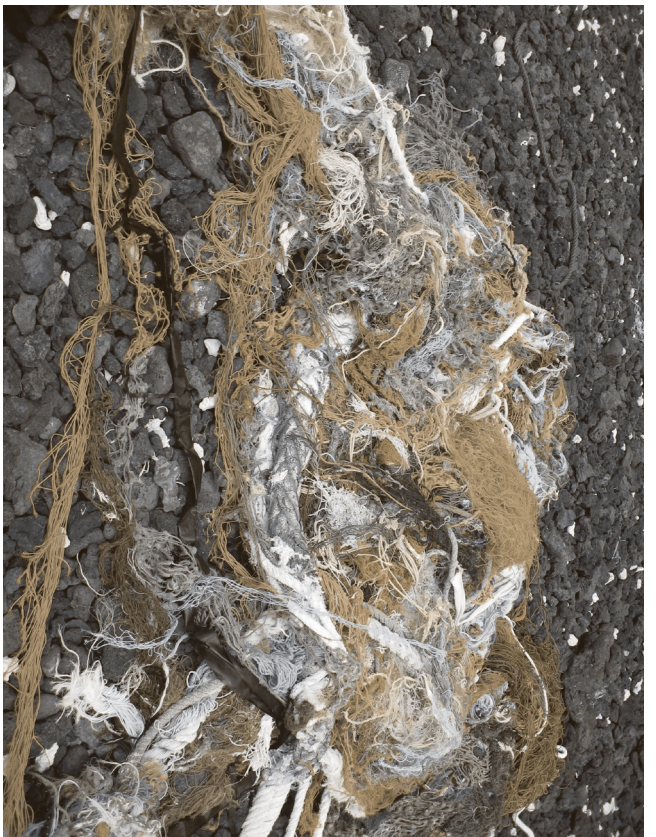

Ghost nets at Black Rock, Ka'anapali Beach, Hawai'i, August 2008. Photograph by Eric Johnson. Courtesy of the National Oceanic and Atmospheric Administration.

and health hazards. The research surmounted but, despite its findings and oppositions, the production and consumption of plastic has continued to scale, increasing almost twenty-fold in the last sixty years, with an annual production reaching 390 million metric tons in 2021.[1] It is no longer a mystery where all this plastic goes: it ends up in our oceans, the same location that once supplied the fossil fuels to process natural gas, which, in turn, generated the byproducts used to develop plastics in the first place. Now these same oceans are haunted by our ghost gear, or "ghost nets," plastics that do not biodegrade (polyurethane takes a thousand years to break down)—littered with toxic debris that traps, chokes, contaminates, and entangles ocean life. Each year, approximately one billion seabirds and mammals die from eating plastic bags.[2] Ghost gear not only evidences how plastic waste is disposed of in deadly ways but also, in its very status as lasting waste, structures plastic "neural nets" that bind our psyches to a future-past of unresolved trash. There is no escaping this ghost, but it can be a source of transformation.

When the ancient Greeks proposed a rigorous pursuit of "the good life," the acquisition of endless streams of cheap plastic stuffs could not be further from what they had in mind. And yet, we have made the logic of consumption synonymous with "bettering" one's self, family, and country. Spiritually motivated or not, it is what we do and work for. Artists, intellectuals, and many others have been critiquing our culture's excessive consumption and plastic's key role in it. And still, the belly of the beast grows stronger with each new consumer report.

How can we change the fate of plastic in the next millennium? Over the last two centuries, some innovations in recycling have enabled consumers in the Global North to yield more energy and power from less resources, causing fewer forms of direct biological and environmental destruction. But who is forgotten in this so-called global march to progress? In the service of a world-being for all—versus the postindustrial few—such questions must continually

shape a truly progressive plastic laboratory of the future.

At the same time, a world-being in service of a future for all must start at home, with the individual's capacity to function as a creative, generative being (*homo faber*), to transform the detritus of our personal psyches into a new home for a novel future. French philosopher Catherine Malabou suggests as much in her recent work on neuroplasticity, insisting past destructions can be resuscitated to form ourselves anew, "to fold oneself, to take the fold, not to give it."[3] Granted, Malabou did not have consumer plastics in mind, but she nonetheless invokes the uniqueness of plastic in its capacity—like humans—to give and receive fresh shape and form from the already wounded and traumatized in personal and collective registers. This is the material essence of plastics and it must remain the real matter of the future. How else can we recuperate plastic's spiritual and ethereal fortitude, if not through its own plasticity?

1 "Annual production of plastics worldwide from 1950 to 2021," Statista Research Department, January 25, 2023, https://www.statista.com/statistics/282732/global-production-of-plastics-since-1950.

2 Murray R. Gregory, "Environmental Implications of Plastic Debris in Marine Settings–Entanglement, Ingestion, Smothering, Hangers-on, Hitch-hiking and Alien Invasions," Philosophical Transactions of the Royal Society of London. Series B, *Biological Sciences* 364, no. 1526 (2009): 2013–2025; Martin Wagner, Magnus Engwall, and Henner Hollert, "(Micro) Plastics and the Environment," *Environmental Sciences Europe* 26, no. 16 (2014): 16.

3 Catherine Malabou, *What Should We Do with Our Brain?*, trans. Sebastian Rand (New York: Fordham University Press, 2008), 13; see also Catherine Malabou, Tyler Williams, and Ian James, *Plasticity: The Promise of Explosion* (Edinburgh: Edinburgh University Press, 2022), 27, 164.

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DuPont's Better Living,
Working Women, and Industrial Toxicology
by Gabrielle Printz

It is 8:00 pm. My baby has just settled in his crib, and I am doing a bit of work. While he sleeps, I scroll the Hagley Library and Museum's digital archives on my laptop from bed, while hooked up to two Medela breast pumps humming the silicone-softened song of mechanically expressed milk. Among my own tangle of tubing and power cords, I expand a black-and-white image of a woman operating an "electrically loaded" stationary bicycle in a temperature-controlled room.[1] She is outfitted in a sleeveless polyester set, a blood pressure cuff, and a thatch of nodes connecting her vitals to an adjoining room. The unnamed woman is a volunteer in a fatigue research study at the Haskell Laboratory for Toxicology and Industrial Medicine, the research institute established by the synthetics giant DuPont de Nemours, Inc. (DuPont) in 1935, initially to assess the occupational hazards of working in the pursuit of a "new world through chemistry."[2] This was the company slogan that debuted in 1939 alongside an exhibition of its products—including a new artificial rubber called neoprene and a silk-like fiber called nylon—at the New York World's Fair.[3] But the chemistry that wrought this new world was, by that time, already understood to be potentially volatile: a decade earlier, a concerning number of DuPont dye plant workers had been diagnosed with bladder cancer.

The Haskell Laboratory opened in the intervening years in response, facilitating internal research on its own products and manufacturing processes, professing its motivating concern to be worker safety. To that end, DuPont's contribution to the twentieth-century pantheon of polymers was situated not only in petrochemical R&D but also the attendant field of toxicology. The creation of synthetics and the assessment of their unruly effects (or, in the company's positive terms, their "safety") would both be handled in controlled environments, separate from, but ever in relation to, the plant and the home.

Riding a bike, painting a ceiling, and ironing a shirt provided registers for manufacturing tasks in domestic labor. These activities have been recorded in stroboscopic photos which multiply the body performing already repetitive motions, and the archives of the Haskell Laboratory are replete with images that depict women working.

Better Living

By the late 1940s, DuPont's slogan exchanged the novelty of synthetic invention for one of convenient use. "Better living... through chemistry" tethered the good life to be had at home to the chemical enterprise with an ellipse (it reads to me now like an omission of relevant information rather than a dramatic pause). It referred to a lab-created and lab-maintained vision of a world of consumer goods: not only discrete objects, such as nylon stockings and grease-resistant neoprene gloves, but also coatings that integrated slick, non-stick, water-repellant, and unwrinklable surfaces into households and onto the bodies of American families.

The promise of "better living" was facilitated by DuPont's own notion of polymerization: not just the technical process from which its proprietary materials sprung forth to constitute an entirely modern world of things but also the means by which that modern world could be engaged in its

“Energy output in ironing,” 1955. Photograph taken with a stroboscopic camera as part of a test at DuPont’s Haskell Labs. The test revealed that a woman ironing a shirt uses twice as much peak energy as a man does painting the living room ceiling. 1972341_3891, Series XIV, Box 12, Folder 2 “Studies of Industrial Fatigue.” DuPont Company Product Information photographs (Accession 1972.341), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807.

own self-reproduction *through* polymers. Plasticity was a social process: born in a lab, multiplied in a factory, and brought home by shoppers and factory line workers alike. Man-made and woman-worn, nylon, teflon, dacron, and other patented synthetics graced the bodies and the surfaces of everyday life, thus proliferating instances of exposure to them.

Forever Chemicals

DuPont's polymers of non-transfer—resistant to ordinary messes and "indifferent to time," as neoprene was introduced in 1939[4]—depended on the staying power of fluorocarbons, something Haskell was investigating as early as 1950.[5] In contemporary toxicology, these are PFAS (per- and polyfluoroalkyl substances) and "forever chemicals," the bonds of which are very difficult to break down and thus remain persistent parts of our environment and ourselves.[6]

I'm only an amateur toxicologist, a specialization bred by the paranoia that accompanies new motherhood in the world of forever chemicals. I speak in millennial determinations of "that's toxic" and in the syntax of "free from" to navigate the badness of the world I rely on to live and to make life. But my training is in history, so I bring this paranoia to the DuPont archives and to a short text that Roland Barthes wrote more than half a century ago. Reflecting on a 1953 exhibition of plastics in Paris, Barthes remarked on the material's essential process of transformation—not plastic as object, but rather plasticity as an elemental force of production—as one that was conspicuously unpeopled: it was "nothing; nothing but a transit, hardly watched over by an attendant in a cloth cap, half-god, half-robot."[7] DuPont showed a vision of plasticity that was necessarily human, contrary to Barthes's observation. However, the idea of plastic as consisting in barely intelligible links—"nothing but a transit"—intuits something about the bodily thresholds that are only suggested by the TV parents and real life employees of DuPont's "better living" media. While we are

afforded glamor shots of artificial silk and microscopic images of mylar enhanced 25,000 times, what can't be shown is the evidence of exposure to a volatile polymer or an indissoluble F-C bond. The hard-to-bind consequences of such repeated exposure might appear on medical charts years later, but, in the meantime, DuPont offered up pictures of people working toward that evidence, as professional observers or with their own bodies as research subjects.

The social and physical reproduction of life in plastics has largely been born by women, and certainly at this black-and-white moment of DuPont's worldbuilding, when its fashioning of a new or better life was refracted through staid gender roles and corporate paternalism. The fatherly voice of mid-century advertising enunciated the convenience of its domestic products in the same breath as it assured houseworkers of the safety of synthetics in the home. Over footage of a mother at the sink with her small child, lathering her hands with a bar of soap (another DuPont offering), a gray-suited announcer effuses the importance of the "exhaustive tests" conducted by DuPont's researchers. In a home office, he addresses the camera as a kind of disciplinarian: "You know, like people, chemicals are of many different types. Now most present no special problem. But some do require special care and treatment to make sure they behave properly and normally."[8] The camera shifts back to Haskell space, where caretaking is shown to proceed in the lab, as it does at home.

DuPont no longer produces PFAS, it professes on a dedicated page on its website and in a 2019 corporate commitment. But it hasn't yet figured out how to decouple its processes from forever chemicals. The company, which has long pursued its own toxicology—for the products that still comprise and coat the world as we know it—instead leaves this decoupling up to people like me... a consumer, an academic, and a mother.

"Comparison of Teflon and plastic," 1945. From a boiling bath of hot sulfuric acid, a laboratory technician lifts two rods of plastic. One has charred and deteriorated. The other, a rod of DuPont's new Teflon tetrafluoroethylene resin, is not affected at all by the highly corrosive hot acid. 1972341_2498B, Series VIII, Box 8, Folder 10 "The creation of 'Teflon' at the Richmond, Virginia Plant." DuPont Company Product Information photographs (Accession 1972.341), Audio-visual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE 19807.

1 "Fatigue studies at the Haskell Laboratory for Toxicology and Industrial Medicine," c. 1950–1959, DuPont Company Product Information photographs (Accession 1972.341), Series XIV, Box 12, Folder 2 "Studies of Industrial Fatigue," Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE, https://digital.hagley.org/1972341_3886.

2 "Haskell Laboratory for Toxicology and Industrial Medicine records 2739," Finding Aid, December 11, 2022, Manuscripts and Archives Department,Hagley Museum and Library, Wilmington, DE, https://hagley-aspace-pdf.s3.amazonaws.com/2739.pdf.

3 "A New World Through Chemistry," 1939, FILM_1995300_FC121, DuPont Company films and commercials (Accession 1995.300), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE, https://digital.hagley.org/FILM_1995300_FC121.

4 "A New World Through Chemistry."

5 "DuPont commercial featuring Haskell Laboratories," 1950, FILM_1995300_FC12_02, DuPont Company films and commercials (Accession 1995.300), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library, Wilmington, DE, https://digital.hagley.org/FILM_1995300_FC121.

6 The "F" and "C" of "forever chemicals," so named by the Harvard public health researcher Joseph Allen in a 2018 op-ed, refer to their component parts, fluorine and carbon; it's less a play on words than a repackaging that he hoped would maintain concern about such toxins in the popular imaginary. See Joseph G. Allen, "Opinion: These Toxic Chemicals Are Everywhere—Even in Your Body. And They Won't Ever Go Away," *Washington Post*, January 2, 2018, https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e_story.html.

7 Roland Barthes, "Plastic," in *Mythologies*, trans. Richard Howard and Annette Lavers (New York: Hill and Wang, 2013), 194–195. DuPont's branding language is invoked in an article about the exhibition and its female spectators: "'Do it by chemistry' has now become a fashionable slogan in the feminine circles of Paris; in "French Impressed by Plastics Exhibit; Week's Program of Chemical Salon Introduces Latest Developments to Women," *New York Times*, July 11, 1953.

8 "DuPont commercial featuring Haskell Laboratories."

Seduction Concentrate

A conversation with Ilana Harris-Babou and Pallavi Sen

Ilana Harris-Babou I wanted to talk to you, because we are collaborators. One of our biggest collaborations was being roommates during the first Covid lockdown in 2020. I learned a lot from you and your relationship with plastics and waste during that time.

We had very different experiences with plastic at home growing up. What was it like for you?

Pallavi Sen Yeah, I grew up in the 1990s in India, when, suddenly, a lot of packaged products were coming in. We didn't have big-box stores yet, but I remember my father describing the Container Store from his first trip to the US. We just couldn't believe that things could come in so many colors and sizes.

He brought back two small, plastic toothpick containers: a pink one and a blue one. At the time, everything in my home was mostly handmade. There were some plastic things, like water jugs, but almost everything else was made of a natural material with a coating.

Plastic was so special; when Ruffles Lays came to India, my grandmother would wash out every bag of chips and save them underneath her oven.

IHB I grew up in an environment where plastic was about expediency. It was special, but it was also everywhere.

Ilana Harris-Babou's work is interdisciplinary; spanning sculpture and installation, and grounded in video. Her work explores the ways we seek connection and identity through everyday objects. She speaks the aspirational language of consumer culture and uses humor to digest painful realities.

Pallavi Sen is from Bombay, India. She works with installation, printmaking, textiles, and intuitive musical movement. She received her MFA in sculpture and extended media from the Virginia Commonwealth University, and is assistant professor of multiples and distributed art at Williams College. She is author of *Dead Planet Cookbook*, and is currently working on a second book about a garden-based curriculum.

My mom was born in the early 1940s and is very much a mid-twentieth-century American. She was also a pediatric nurse. I remember visiting her in the hospital and seeing plastic machines, IVs, and syringes everywhere.

My family are very much New Yorkers. We had takeout for dinner almost every night, and the containers were all over the house. We'd bond by going shopping in Manhattan on weekends and bringing back lots of branded plastic bags.

PS The novelty and promise of bringing something new home—I have memories of that too.

I feel that there was this moment in India when our plastic use could have gone one way or another. In my childhood I saw many products becoming available in tiny sizes, all held in crimped plastic. You could buy a one-time use shampoo or a snack for not very much money. Now when you're on the train or walking along the road, you can see small, silver rectangles of plastic everywhere.

Still, even though plastic waste is very visible in India, the same amount exists in the US. It's hidden, because of the way it's discarded, but just as revolting. And a curtain has been pulled away from the magic of a material, because we now understand the composition and fallout.

IHB I like making videos, because they allow me to make materials unfamiliar again.

I can take a plastic bag, put it under studio lighting, reframe it through different angles, and feel the joy of transformation. I can suspend a material in the constant flux that exists on the screen. I relish it! I can have new experiences with the stuff that's already there.

PS I was recently watching a video you made and was reminded of how, when I was younger, I used to love playing with wet mud after the rain, because of how it felt, the squishing sounds of it, so delicious but you cannot eat it. It was lovely and chocolatey and glossy, and I think that, in your work, there's also that same loveliness of something spreading, the temptation of something setting and then becoming shiny again.

IHB Yeah, being an artist gives us an excuse to return to the same material experiments we loved as children.

PS I think about the work of artists from the early twentieth century, when there were synthetics coming in, like Annie Albers and her weavings. She worked with so many new fibers, testing how they each move, how they feel, how you can combine materials, synthetic with organic.

IHB Synthetics are just concentrated seduction! How do they do it?

PS Yeah, I wonder if it's the glossiness. There's a gloss to the surface of stuff that doesn't disintegrate—something that organic substances in their raw form just don't have. And maybe it's how light hits something that can't break down.

The very vibrantly colorful, like something at its peak ripeness, has the same draw as plastic, and we want to move close to it. I don't know if there's an equivalent to it, but it's like the molded letters on a keyboard going *clack clack* with the touch of acrylic nails.

Maybe a lusciousness beyond plastic is sonic! Like a conversation or song. Or it's interaction; it's dance; it's a motion that makes you feel excited.

IHB Or a meal that's about to be consumed. Or the shine in the eyes of someone you love. Right?

Currants near the garden; tofu marinated according to a recipe in a short story; rhubarb crisp; toast with mayonnaise and tomato harvest; Alice Waters' kale soup; dal roti with arbi and hari sabzi. Photographs by Pallavi Sen.

Naa Oyo A. Kwate is an interdisciplinary social scientist with wide ranging interests in racial inequality. Her research has been funded by grants and fellowships from the National Institutes of Health, the Smithsonian Institution, and others. She is currently writing a book about corner liquor stores in Black urban life.

Whither the Forty Ounce?
by Naa Oyo A. Kwate

At the end of *Boyz n the Hood*, Doughboy crosses the street to talk to Tre. It's morning—we don't know what time, exactly, but Doughboy confesses that he hasn't been up this early in a long time. It's the day after his brother Ricky was gunned down in cold blood in an alley just blocks from their home, followed by Doughboy avenging his death with another volley of bullets. Doughboy carries a 40-ounce glass bottle of St. Ides malt liquor, two-thirds of his breakfast already consumed. It was probably purchased on location in South Central (now just called South) Los Angeles by the film's prop department. The big red price sticker remains on the front: $1.49. The bullet-shaped bottle cuts an iconic silhouette, one that, in the 1990s, became a visual shorthand for young Black male masculinity.

Two summers ago, I saw a bottle of Olde English 800 in a supermarket in Philadelphia. It was plastic. At some point in the 2010s, the bottle changed from glass to plastic. This smaller, squat bottle actually contained more liquor: 42 ounces. It had a label that turned blue when the liquid was appropriately cold—necessary for a drink that is otherwise unpalatable. Plastic is cheaper than glass, but why give up a design that is so recognizable, even by people born long after the drink's heyday, even by winemakers in other countries, such as the French Domaine Julien Braud, which sold its blend of Muscadelle, Loin de l'Oeil, and Muscat

white wine in the iconic 40-ounce bottle shape and labeled it "Forty Ounce White"? And why market the *terroir* of southwest France in the visual language of a drink meant to be drunk to get drunk?

The new Olde English 800 had a big, fat, graspable plastic cap like soda, like juice, like iced tea, like Gatorade. It's deceptive, but malt liquor is deceptive. Because packaged drinks are meant to taste good, but this is just meant to be swallowed. Malt liquor's *terroir* is the shop floor, not south-facing calciferous parcels of earth that come through in a taste of crisp minerality. But the Olde English doesn't deceive. The 42-ounce never promised anything but a math problem of percent alcohol by volume and what the liver can metabolize. Meanwhile, the planet cannot digest the container, and it takes revenge. Plastic is ill-suited to beer: the air oxidizes the brew; UV rays skunk it—still digestible, but ever more unpalatable sitting in the cold case.

42 ounces of 7.5 percent malt liquor meant to be a single serving, meant to be drunk quickly before you can actually taste it, before room temperature sets in. If you're drunk—when you're drunk—and your fine motor control is less than state of the art, and you drop it, the bottle won't send up a fine spray of corn sweet malt and glass shards. And you won't be out the couple of bucks you spent on it. The bottle won't shatter, but the planet will.

The bottle says,

— I'm just trying to save you money!
I'm just trying to save you disappointment.
— Well, inasmuch as...
The bottle says,
— I will not shatter.
— I may shatter you.

Doughboy walking down the street. Film still from *Boyz n the Hood*. © 1991, 1992 Columbia Pictures Industries, Inc. Courtesy of Columbia Pictures.

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Edges, Ends of Worlds, and Plastic Oceans
by Jennifer Gabrys

Edges and ends of worlds are encountered frequently in the films of Harun Farocki.[1] They form recurrent courses of navigation, tugging along ships and airplanes, riders and avatars, waves and clouds, memories and simulations. In one sequence in the nine-minute-long film *Parallel II* (2014), a rider on horseback charges toward a horizon that at once recedes and refreshes. In this scene from *Parallel II*, the narrator relates:

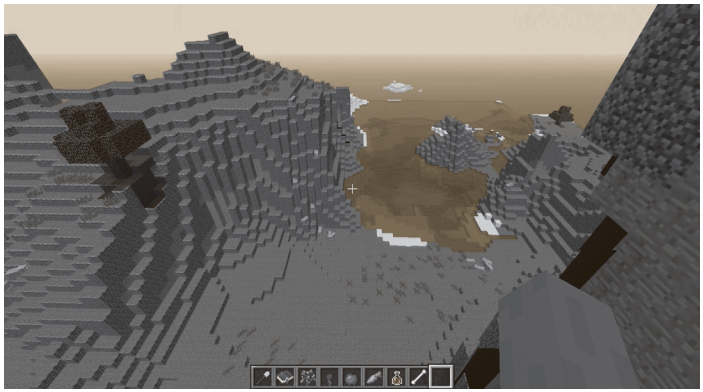
> Galloping swiftly out from the gate,
> how far can the rider ride?
> Where does this world end?
> This world appears infinite,
> a world generated by the gaze that falls upon it.[2]

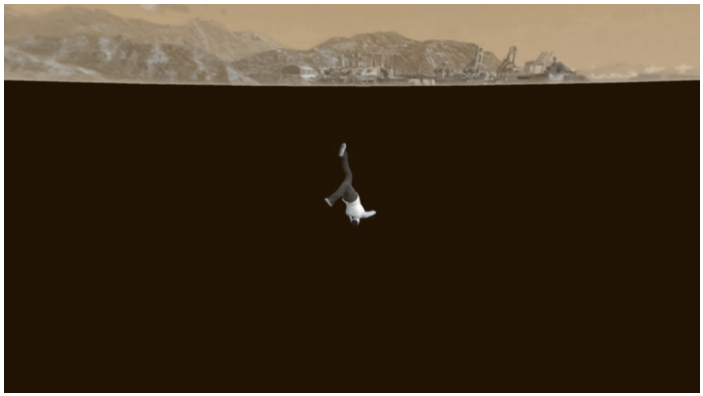
World-ending is by now a pervasive topic. It is the default script written into the story of environmental change. Yet it is also a concept and event with a longer history. Worlds are projected to end in the face of climate breakdown, with people displaced and dispossessed from melting landscapes and submerged communities. Worlds have also continually been ending, with settler colonialism, environmental racism, and ecological exhaustion wreaking terminal destruction over the span of several centuries. The worlds and endings that are conjoining and collapsing are then many, with different consequences for the inhabitants and relations of those worlds.

The worlds I explore here are ocean worlds. Located across the world's oceans are several sizeable concentrations of plastic debris that have variously earned the title of "garbage patches." The Great Pacific Garbage Patch in particular has become an object of popular and scientific interest. It is an environmental anecdote that confirms our worst fears about overconsumption—and the dark side of the durable wonders of plastics that were promoted in so many post-war contexts. It is also an imagined indicator of what may even outlive humans, given the lengths of time that plastics require to degrade. The garbage patch is in many ways an amorphous object, drifting through oceanic and media spaces as an ominous sign that focuses attention toward the ways in which oceans have become planet-sized landfills. Yet it also signals a certain world-ending moment, arriving as the oceans become saturated with this synthetic and disposable material.

Popular imaginings of the Great Pacific Garbage Patch have included comparisons of its size to the state of Texas, or suggestions that it is an island that might be named an eighth continent, formed of anthropogenic debris. Upon hearing of the concentration of plastic wastes in the Pacific, many people search for visual evidence of this environmental contamination on Google Earth. Surely a human-induced geological formation of this magnitude must be visible from a satellite or aerial view? However, because plastic wastes are largely present as microplastics in the form of photo-degraded and weathered particles, the debris exists more as a suspended soup of microscopic specks that is mostly undetectable at the surface of the ocean.

While Google Earth may be a platform for visualizing and locating ocean data, this visualization technique presents a much different approach to "sensing" than seeing the patch as a photographic object.[3] The inability to





Harun Farocki (with Matthias Rajmann), *Parallel II*,
2014. HD video; color, sound; 9 min (loop); Germany.

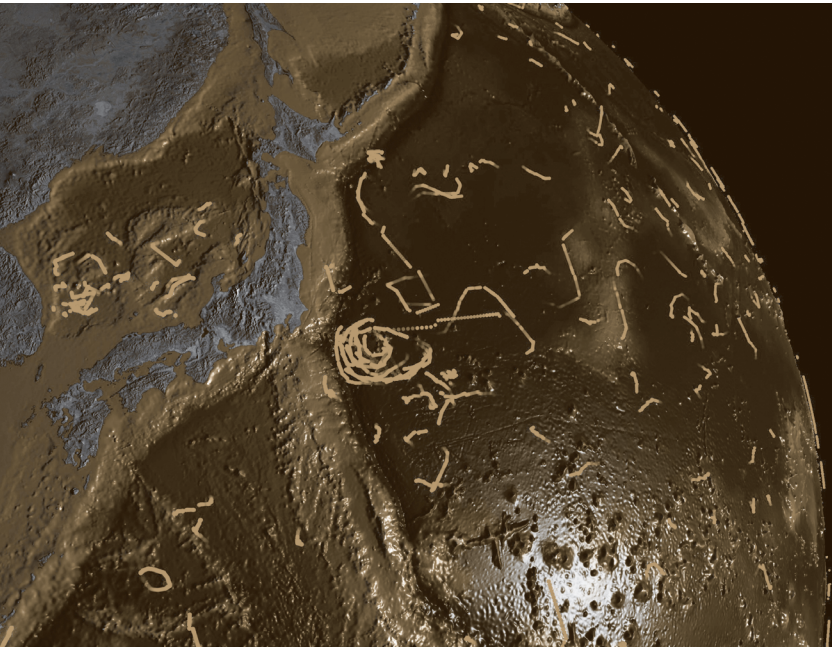
locate the garbage patches on Google Earth, a tool for scanning the seas through a conjunction of remote sensing, aerial photography, and online interfaces, even gives rise to popular controversy about how to locate the patch and whether the plastic conglomerations are actually present in the oceans—and, if so, how to address the issue. The relative invisibility and inaccessibility of the patches render them as looming imaginative figures of environmental decline that are yet relatively amorphous and unlocatable and so seemingly resistant to incentives toward environmental action. All of which raises the question: To what extent do environmental problems need to be visible in order to be actionable? Or do they instead become sense-able and navigable in different ways, less as images that raise concern and more as shifting conditions that unevenly surface and require unfolding and expanded sensing practices and tactics? As Farocki's computer game investigations indicate, modes of navigation and sensing can also become ways of constructing these worlds, including their edge conditions.

If a Google Earth or satellite view of the garbage patch proves to be an impossible undertaking, it is because the plastics suspended in oceans are not a thick choking layer of identifiable objects but more a confetti-type array of suspended plastic bits. Locating the garbage patch is on one level bound up with determining what types of plastic objects collect within it and what effects they have. Yet, on another level, locating the garbage patch involves monitoring its shifting distribution and extent in the ocean. The garbage patch is not a fixed or singular object but a society of objects in process. The composition of the garbage patch consists of plastics interacting across organisms and environments. But it also moves and collects in distinct and changing ways due to ocean currents, which are influenced by weather and climate change, as well as the turning of the earth (in the form of the Coriolis effect) and the wind-influenced direction of waves (in the form of Ekman transport). As an oceanic gyre, the garbage patch moves as

a sort of weather system, shifting during El Niño events, and changing with storms and other disturbances.[4] Ocean sensing then requires forms of monitoring that work within these fluid and changeable conditions.

The garbage patch as a figure does not directly come into view through ocean-sensing practices and technologies, but instead registers in a more indirect way, through proxy sensing. Environmental monitoring techniques, often developed for purposes other than sensing plastics, are subsequently tuned in to the drift of oceanic debris. Most sensors are set to detect the salinity, temperature, and movement of ocean currents, in order to bring patterns of climate change into view, a similarly elusive event that is not easily visualized. Rather than a *visual* fix on plastic pollution, sensing practices and technologies for monitoring environmental change instead indirectly register plastics within the mix of other environmental processes, geopolitical infrastructures, and digital devices.

The material occasions of oceans are not only a remote object of digital study, but also an actual occasion in which we are now participating and through which we will continue to be affected. Here, new societies of objects emerge from the remains of techno-scientific pursuits and in turn give rise to new monitoring practices for studying these residual and yet generative objects with unknown and indeterminate effects. A key question arises from monitoring the oceans as generative techno-scientific and computational objects: What experimental forms of politics and environmental practices might materialize that are able to attend to these indeterminate and emergent effects, which also portend the end of a world, if not this world?



ARGO buoys over the western Pacific from the ARGO Float Animation #2. Courtesy of NASA/Goddard Space Flight Center Scientific Visualization Studio.

1 This is an edited excerpt. Previously published in *e-flux journal*, no. 101 (June 2019), https://www.e-flux.com/journal/101/272633/ocean-sensing-and-navigating-the-end-of-this-world; also revised and reprinted from chapter 5 of Gabrys, *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet* (Minneapolis: University of Minnesota Press, 2016). Courtesy of e-flux and the University of Minnesota Press.

2 Harun Farocki, *Parallel II*, 2014. HD video; color, sound; 8:38 min.

3 For example, see National Center for Ecological Analysis and Synthesis, "A Global Map of Human Impacts to Marine Ecosystems," https://www.nceas.ucsb.edu/globalmarine. Not to be confined to surface views of the ocean, Google Earth has also added a "Street View" for navigating underwater. See Underwater Earth, "Underwater Google Street View," https://www.underwater.earth/google-underwater-street-view; and Google Maps, Street View Gallery #oceans, https://www.google.com/streetview/gallery/#oceans.

4 Evan A. Howell et al., "On North Pacific Circulation and Associated Marine Debris Concentration," *Marine Pollution Bulletin* 65, no. 1–3 (2012): 16–22.

Seed Bead Inheritances & Other Toxicities

by Kristen Bos

Years before I would turn to seed beads and beading as a research subject and co-conspirator, I learned, while beading with an Elder in a beading circle at the Native Women's Resource Centre of Toronto, that we did not *just* get seed beads from colonizers as is commonly thought. She shared that glass seed beads could be found long before the colonizers arrived, shimmering in the waves and washing up on the shores at water's edge. I believed her. After all, beading circles are spaces for grandmothers to share their knowledge, in person or in the beadwork themselves, across time and space *as we have always done.*[1] Evoking a time wherein "the rivers acted as our Internet—though undoubtedly at dial-up speed—and beadwork served as a guide for the territories we navigated, a map for our bloodlines, a coded knowledge for prayers and good thoughts embedded in the clothing of our loved ones."[2] Stoking time after time wherein resistance must be centered and balanced like in a good floral.

I have been changed before in this and in other spaces, that is, "if the thread doesn't tangle and the needles don't break"—though broken needles tell us something too.[3] I don't need to reference the written records or even the genetic analyses that support "pre-colonial" and "pre-historic" relations between Indigenous peoples and others—other peoples, other lifeforms, other kin—to understand that

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White rabbit fur; smoked deer hide bag; Métis floral beadwork consisting of pre-1920s vintage Venetian and Parisian beads, 1920s French steel cut beads, and contemporary charlotte cut beads from India, on a piece of smoked deer hide that will become an iPhone case; beaded needle case by the artist and designed by their mentor and Master Beadworker Jennine Krauchi; beaded pin template on smoked moose hide that the artist is beading for Métis Elder and Matriarch Maria Campbell; four vials of pre-1920s French vintage seed beads; Wolf willow seed beads harvested by the artist in downtown Winnipeg; Snail shells the artist collected on the shores of Greenwater Lake in Treaty 3 Territory; Lake trout vertebrae beads from a trout caught by the artist in Treaty 3 Territory at Sherwood Lake where their dad lives; Manitoba choke-cherry dyed pickerel vertebrae beads handmade by the artist; thread cutters. Courtesy of Claire Johnston.

it is possible to find glass seed beads at the meetings of the water. These exchanges continue, with and without our consent.

I think of our conversation as I doomscroll through the headlines—

> "Microplastics from European rivers spreading to Arctic seas, research shows," says *The Guardian*.
>
> "Microplastics have moved into virtually every crevice on Earth," says *National Geographic*.
>
> "Microplastics found in human blood for first time," says *The Guardian*, again.

Since time immemorial, pierced materials such as shells, turquoise, native copper, and meteoric iron have circulated between Indigenous relations. Following colonization, our beads took on new materials and relations in the form of glass. Though in English, these were known as glass seed beads, they were often "given the older names" of either *mekis* (shells) or *manidoo minens* or *mines* (spirit seeds).[4] I learn later from Jennifer Meness that the spirits of the seed beads are in their capacities for bringing us together and in how, in their loose forms, they offer us infinite possibilities. In Michif, it's *pèrl* (pearl) or *dé mémoyr dno zansèt* (stories of our ancestors).

I wonder how much of microplastics count as microbeads. Microbeads, or "Ugelstad particles," named after the Norwegian chemist who invented and then patented his method of producing uniform polymer particulars in the late 1970s, are used as exfoliating agents in products like toothpaste, soap, and face wash. Microbeads replaced other materials like pumice, oatmeal, and walnut husks. As far as I know, they have not been given any older names. Though I think something like *oochaywaahtamwuk* (swarm), *ka pakwatutt* (enemy), or *ahkosôwin* (disease) might work.

I think of our conversation whenever I remember that microplastics refuse to dissolve and, so, they are found everywhere, especially shimmering in the waves and washing up on the shores at water's edge.

1 Leanne Betasamsoake Simpson, *As We Have Always Done: Indigenous Freedom through Radical Resistance* (Minneapolis: University of Minnesota Press, 2017).
2 Adrienne Huard, "Beads They're Sewn So Tight," *Public* 30, no. 60 (2020): 278–281.
3 Sherry Farrell Racette, "If the Thread Doesn't Tangle and the Needles Don't Break: Beading Utopia" (paper, Manidoominensagemin Toronto [we are beading in Toronto], Textile Museum of Canada, Toronto, January 25, 2019).
4 Sherry Farrell Racette, "My Grandmothers Loved to Trade: The Indigenization of European Trade Goods in Historic and Contemporary Canada," *Journal of Museum Ethnography* 20 (2008): 71.

Esther Leslie is professor of political aesthetics at Birkbeck. Her recent work explores the biopolitical economy of dairy. She is author, in collaboration with Melanie Jackson, of *Deeper in the Pyramid* (Banner Repeater, 2018 and 2023) and *The Inextinguishable* (Limerick Biennial, 2020–2021). Her future work includes a study of Imperial Chemical Industries (ICI) and its impact in Teesside with Palgrave Pivot.

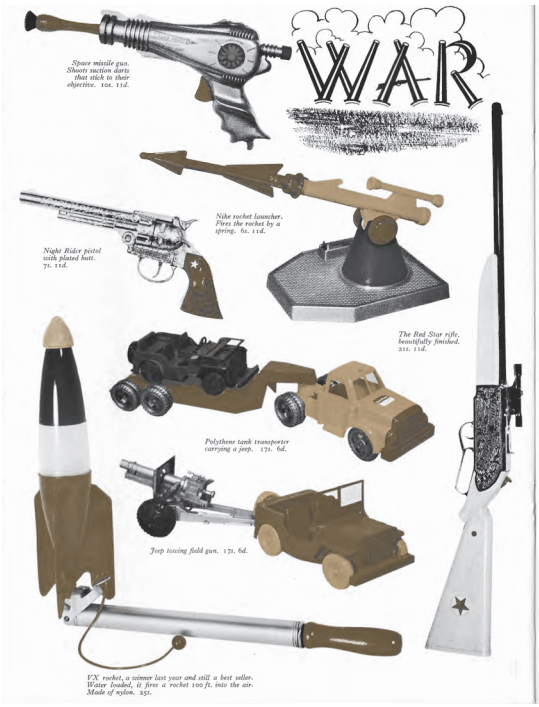
Imperial Serial
by Esther Leslie

"Arctic Junky: Plastic Sugar Puffs toy from 1958 washes up in the Arctic 59 years later to give a chilling warning about plastics in our ocean," declared a 2017 headline in *The Sun*.[1] The miniature replica of the RMS Mauretania had bobbed 1,500 miles from Britain to Jan Mayen Island in the Arctic, from cereal box to gutter to dump, adrift in a sea for which it was never destined. "Ahoy! A Free Toy!" was the advertising tagline, and millions of children rummaged through cereal for this booty. However insignificant and throwaway its design, the material body of this giveaway has persisted, decaying only gradually, fading from pink to cream. In fact, it outlasted the original: the (roughly) 30,000-ton Cunard–White Star. A transatlantic ocean liner, built in Birkenhead and launched in 1938, which was scrapped at Thos. W. Ward's shipbreaking yard in Fife in the mid-1960s.

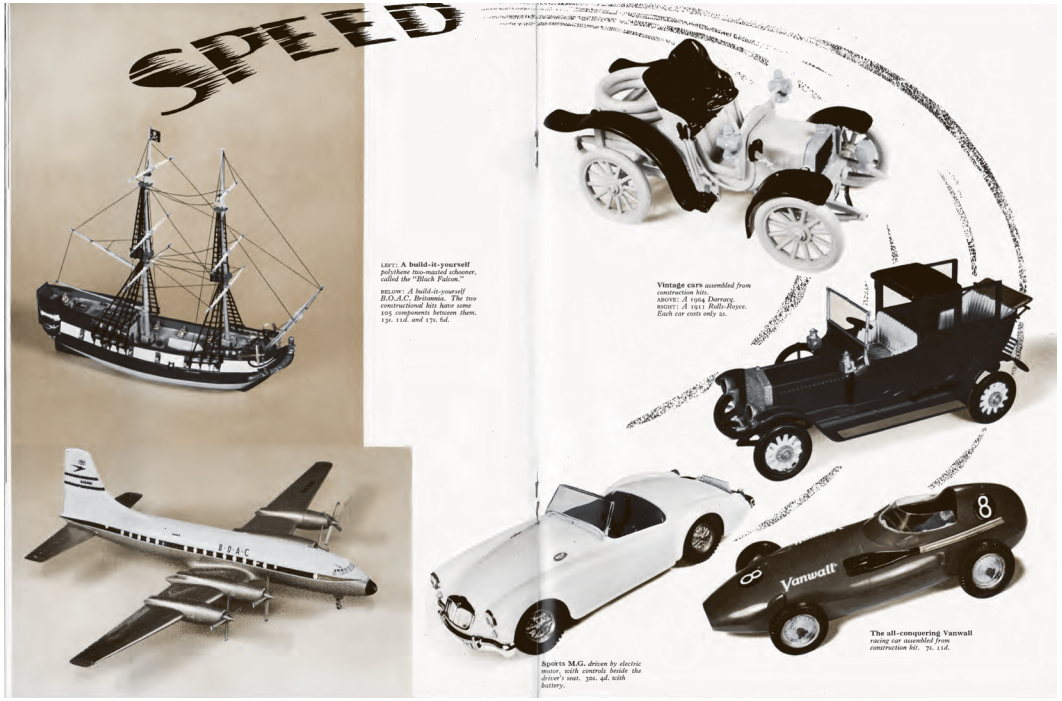
Synthetic garments, like those made from Imperial Chemical Industry's Terylene—the first 100-percent synthetic fiber invented in the UK—were sold on the promise of their durability, on their ability to keep shape. Yet, with each wash, their microfibers escape into water, into the world. Plastics drift and travel, depositing on the ground, in the sea, the air, and bodies. They have a way of finding their way back to where they came from (before they were plastic, before a thousand complex processes divided and recombined them)—to the sea where crude oil is siphoned, into the rocks where natural gas is extracted, or into the ground, concentrated in landfill, where they meet the now almost exhausted stocks of coal. Burned plastic waste reappears, like geological replicas, almost indistinguishable from stones and pebbles ("plastiglomerates" or "pyroplastics") floating in the sea, washing up on beaches.[2] This, too, is a truth of plastic items—for, as much as they are durable, they are also cheap and made to be thrown away.

As the plastics disperse, so too does each item's promise of a better life. Their bold colors, their resistance to the environment, to water, wind, and sun, their capacity to form anything and everything, by tricking nature or outwitting it—and holding all this for us forever—proves to be a lie. That they persist, even as they endlessly transform or shed themselves into the environment, becomes a problem in waiting.

The December 1958 issue of Imperial Chemical Industry's in-house magazine included a three-spread graphic titled "The World of Toys."[3] Crowing about the competitive advantage of ICI's plastic toys, which beat the historically dominant German toy industry, the feature revels in new playthings on the market. Rendered in miniature, in foam, nylon, and polythene, is a world of cowboys and wild animals, of war, of speed. A build-it-yourself polythene two-masted schooner called the "Black Falcon" sits next to a B.0.A.C. Britannia airplane. A Nike rocket launcher sits next to a space missile gun with darts that "stick to their objective." Cheap, disposable toys do not disappear with childhood but rather persist, just like the imperial legacies they play at.



Cowboy "Swoppets" *are new this year and selling fast. Made of polythene, they take to bits on the poppet system and can be put together with heads, arms, legs, and even pistols, on different bodies. 27s. 6d. per set or 2s. 11d. each.*



"The World of Toys," *ICI Magazine* 36, no. 266 (December 1958): 414–417.

1 Holly Christodoulou, “Arctic Junky,” *The Sun*, December 20, 2017, https://www.thesun.co.uk/news/5178336/sugar-puffs-plastic-toy-1958-warning-oceans.

2 See Madeleine Stone, “New Plastic Pollution Formed by Fire Looks like Rocks,” *National Geographic*, August 16, 2019, https://www.national-geographic.com/environment/article/new-plastic-polllution-formed-fire-looks-like-rocks; and Angus Chen, “Rocks Made of Plastic Found on Hawaiian Beach, *Science*, June 4, 2014, https://www.science.org/content/article/rocks-made-plastic-found-hawaiian-beach.

3 “The World of Toys,” *ICI Magazine* 36, no. 266 (December 1958): 414–417.

Stone Now Cuts Like Cheese

by Adie Mitchell and Timothy Mitchell

In November 1851, the German architect Gottfried Semper articulated the material crisis facing the arts. Semper had spent the previous year in London, helping design the Canadian, Danish, Swedish, and Ottoman pavilions at the Great Exhibition. The exhibition displayed industrial machinery and industrially-produced goods against colonial subjects and their crafts—maintaining a juxtaposition between the industrial and the primitive, colonizer and colonized. While this display of imperial confidence aimed to assert the superiority of the West, it also disguised a profound uncertainty about the materials produced by industrial civilization and the consequences of such malleable matter.

Of the industrially produced objects, Semper observed:

> We can accomplish the most intractable and laborious things with playful ease by the application of technical means borrowed from science; the hardest porphyry and granite can be cut like chalk and polished like wax, ivory can be softened and pressed into shapes, india rubber and gutta-percha can be vulcanized and used to produce deceptive imitations of carvings in wood, metal and stone, in ways which far transcend the natural domain of fabricated materials.[1]

Adie Mitchell graduated Magna Cum Laude from Williams College, where he was awarded the Bruce Sanderson 1956 Prize in Architecture. He has worked at Yestermorrow, a design/build school in Waitsfield, Vermont and at Gluck+, an architect led design build firm in New York City. He is currently a graduate student at the Princeton University School of Architecture.

Timothy Mitchell is a professor at Columbia University. He teaches and writes about colonialism, political economy, the politics of energy, and the making of expert knowledge. His books include *Colonising Egypt* (University of California Press, 1991); *Rule of Experts: Egypt, Techno-Politics, Modernity* (University of California Press, 1991 and 2002); and *Carbon Democracy: Political Power in the Age of Oil* (Verso, 2011).

Semper understood architecture's power to lie partly in the durable local customs of material use, lost now in the face of rapid industrial invention, and partly in the encounter between the "harsh, resistant material itself and the softness of the human hand"—asking what role material plays "now, when we can cut through the hardest stone like bread and cheese?" Industry rendered all materials plastic: effortlessly moldable in the hand of the architect and devoid of connection to history or place. To reveal the double impact of plasticity—that materials have lost both their resistance and their situatedness—Semper relies upon a racialized framework. "For a complete historical picture, for cultural cross-comparison, and for general reflection alike," he writes, "one only has to consider... all those works... which have been produced by peoples at a most basic level of human culture." For Semper, the plight of the arts in modern times is defined in part by their comparison to the modes of primitive production also on display at the Great Exhibition.

The Great Exhibition imagined an age of plenty that depended not only on a command of new materials but also on their ability to command the imagination. For modern architecture, this power derived from the embrace of industrial production and materials, as Le Corbusier put forward in his 1923 book *Toward a New Architecture*.[2] The power to shape the imagination was also strongly exemplified by the development of plastics. The mentality of progress—the timelessness and placelessness of the material that Semper identified—is the same one exploited by the oil industry in converting its own forms of excess and waste into ubiquitous and disposable plastics.

In *Plastic Matter,* Heather Davis explores "the ways that matter is understood to be plastic, in both the metaphorical and material senses, [and] the kinds of philosophical assumptions that fostered the conditions for plastic to emerge in the world in the first place." The concept of plastic matter, Davis writes, "speaks to how the materiality of plastic has been imposed on to our expectations of matter more broadly, how matter itself has come to be produced as inherently pliable, disposable, and consumable."[3] This mentality results in a spatial dislocation organized along the same colonial lines as the 1851 Great Exhibition; the places and races of colonial subjugation in Semper's day now bear the brunt of the environmental and health burden of our plastic mentality, in which the perceived malleability and disposability of matter underwrite an ethics of discard and waste. Since architects, too, are guilty of plastic thinking, and have indeed largely embraced it since the rise of modernism, architecture itself depends upon a willful blindness around these spatial arrangements.

Our spatial blindness around plastic is accompanied by a temporal blindness. In her study of synthetic chemistry, the scientific discipline that grew up around making use of the waste products of the petroleum industry, Bernadette Bensaude-Vincent observes that plastic has been labeled as both malleable and ephemeral. These properties of plastic, however, are largely epistemic rather than physical. Most plastics are, in fact, long-lasting and difficult to remold. Bensaude-Vincent writes,

> The ephemeral present of plastics, is not just an instant detached from the past and the future. It is the tip of a heap of memory, the upper layer of many layers of the past that have resulted in crude oil stored in the depths of the soil and the sea. The cult of impermanence and change has been built on a deliberate blindness regarding the continuity between the past and the future.[4]

Recognizing the temporal connections of the materials we use, then, becomes a way to work against plastic thinking.

The oil industry is banking on the failure of political institutions and the discipline of architecture to engage with the temporal and spatial blindness of plastic thinking. In *The Future of Petrochemicals,* the International Energy Agency estimates that, in the United States and Europe, the

per capita consumption of fossil fuels due to the use of plastic will, by 2050, far outstrip consumption for transportation.[5] The oil major BP recently predicted that 95 percent of the growth in demand for oil between now and the year 2040 will come from plastics.[6] It may seem that the discourse around the future of architecture in 1851 could hardly resemble contemporary debates. However, the concerns with materials and production that preoccupied Semper after the Great Exhibition offer a way to understand how architecture is embedded in the world today: its material networks and its connections to colonial pasts, imperial presents, and environmental futures.

1 Gottfried Semper, "Science, Industry and Art," in *The Four Elements of Architecture and Other Writings*, trans. Harry Francis Mallgrave and Wolfgang Herrmann (Cambridge: Cambridge University Press, 2011), 130–167.
2 Le Corbusier, *Toward a New Architecture* (Mineola, NY: Dover Publications, 2013), 18.
3 Heather Davis, *Plastic Matter* (Durham, NC: Duke University Press, 2022), 9.
4 Bernadette Bensaude-Vincent, "Plastics, Materials and Dreams of Dematerialization," in *Accumulation: The Material Politics of Plastic*, ed. Jennifer Gabrys, Gay Hawkins, and Mike Michael (London: Routledge, 2017), 24.
5 International Energy Agency, *The Future of Petrochemicals: Towards More Sustainable Plastics and Fertilisers* (Paris: International Energy Agency, 2018), 97.
6 David Roberts, "Big Oil's Hopes Are Pinned on Plastics. It Won't End Well," *Vox*, October 28, 2020, https://www.vox.com/energy-and-environment/21419505/oil-gas-price-plastics-peak-climate-change.

In Place Of

by Terry Schwarz

In *Cradle to Cradle*, architect William McDonough describes pollutants as misplaced materials.[1] Carbon, for example, doesn't belong in the atmosphere, where it traps the sun's energy and contributes to global warming. Carbon belongs in the soil, where it supports plant life and, by extension, feeds the entire world. This framework of belonging—for understanding the harms and possibilities of materials as they relate to place—echoes the work of anthropologist Mary Douglas who argues that what we classify as "waste" is determined by context, rather than by the intrinsic characteristics of the materials in question.[2]

So what is the place of plastic? Unlike carbon, plastic is a human invention, one that has become both deeply embedded in the built environment and increasingly unwelcome, especially when used in the wrong forms and concentrations and in all the wrong places. We've constructed our own reliance on it without much attention to context, or to where it might belong and not belong.
When plastics emerged in the 1920s, they often mimicked the appearance and function of wood, glass, ivory, and other natural building materials in ways that conformed to consumer preferences. Over time, however, the adaptability and low cost of plastic led to its widespread use, not just because of what it could replace (or displace) but also because of what it could enable.

Terry Schwarz is Director of the Cleveland Urban Design Collaborative at Kent State University. Her work includes neighborhood planning, commercial design guidelines, and community. She leads the CUDC's Shrinking Cities Institute, which focuses on the implications of population decline and large-scale urban vacancy in Northeast Ohio.

PVC pipes deliver water efficiently and affordably to millions of people every day; plastic particles contaminate the water supply, infiltrate our blood streams, and damage our DNA. Plastics encase the fiber optic cables and power grids that make modern telecommunications possible; discarded devices accumulate in landfills and leach carcinogens into the water table. Airplanes, trains, and cars made of durable, lightweight plastics move people and products across great distances; hazardous fumes from the plastics manufacturing process cause respiratory illnesses, eye irritation, and nervous system damage. People rely on plastic and ignore, or tacitly accept, the negative consequences. How do we reconcile the harm and possibilities attendant to these materials, or the opposing but interconnected forces at work in plastic cities?

Perhaps it's too late. Plastic is everywhere. Buildings may be clad in wood, metal, or masonry, but plastic is always there—in the walls, windows, structural members, coatings, fasteners, furnishings, plumbing, and mechanical systems. City trees and urban landscapes depend on plastic for irrigation and drainage, and plastic permeates urban infrastructure networks. Cities also manage and export vast amounts of plastic waste. Most of this plastic will never fully disappear; it just gets smaller and smaller, infiltrating water bodies and human bodies at an alarming rate.

If the boundaries between people and plastic have been irretrievably breached, are there ways to embrace, contain, and transform plastics—and by extension, our cities—differently, away from harm? Would it be possible, for instance, to filter plastic particles out of the Great Lakes and aggregate them into building materials to address global housing shortages? Could single-use plastic bags be extracted from landfills and woven into landscape fabrics that protect against shoreline erosion and sea level rise in coastal communities? With all respect for reality, can we envision a radically different future in which plastics are used sparingly, responsibly, and with a full reckoning of their costs and their benefits? This would require not only

remaking or retrofitting almost every aspect of the built environment but also rethinking our entire relationship to "use." Is changing the context of plastic waste or redirecting the processes for which plastic is useful a place to start?

In addition to changes at the urban scale, perhaps humans need to become more malleable in response to our increasingly plasticized communities. Phenotypic plasticity refers to the ways that organisms change their behavior, shape, and physiology in response to a unique environment. In other words, if people are to flourish in plastic cities, we may need to remold ourselves and adapt to new realities. Plastic in many ways is humble and versatile—virtues to embrace as we reorganize the world and adapt to altered environments.

1 William McDonough and Michael Braungart, *Cradle to Cradle: Remaking the Way We Make Things* (London: Vintage Classics, 2009).

2 Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge Classics, 1966).

Kyla Schuller is associate professor of women's, gender, and sexuality studies at Rutgers University–New Brunswick. She is author of *The Biopolitics of Feeling: Race, Sex, and Science in the Nineteenth Century* (Duke University Press, 2018) and *The Trouble with White Women: A Counterhistory of Feminism* (Bold Type, 2021).

The Racial Logic of Impressibility
by Kyla Schuller

Plasticity comprises the capacity to change, to be molded, to radically deform and transform under pressure while miraculously retaining self-sameness. Instead of falling apart, plasticity persists in the face of destruction. It may even condense the miracle of life itself—potentiality crystallized, the materialization of growth and change.

As a concept, plasticity describes these fantastical capacities of matter. Yet plasticity simultaneously has a politics. Ideas about the qualities of matter and the potentiality of life itself are far from neutral. Rather, they are foundational to the modern practice of power and sovereignty, to what Michel Foucault called "biopolitics," which grants life to some and leaves others to die.[1] Western metaphysics depends upon a plastic body, as articulated most famously in the Lockean idea that babies arrive as impressible blank slates. In this schema, growth and progress depend on a person's responsiveness to the environment around them, as well as their capacity to absorb the effects of these sensory impressions over time. Yet qualities praised as "human" in the abstract have often been restricted (i.e. limited to only some humans) in practice. Plasticity is a battleground.

Plasticity structures the modern, biological logic of race. When nineteenth-century race scientists, including Louis Agassiz and Edward Drinker Cope, codified race as a state of profound physical difference, they relied on an alleged unequal capacity to receive impressions. For Cope, "fine nervous susceptibility" and "mental force" were the exclusive features of Indo-Europeans.[2] Whiteness came to signify "the capacity for capacity," writes queer theorist Jasbir Puar—pure potentiality rendered in human form.[3]

This modern framework of biological racial difference—used to justify racism and white supremacy—denied the capacity of plasticity to colonial subjects and nonwhite people. People of color were considered immutable in body and mind, insensitive and incapable of absorbing impressions over time. Cope, for example, condemned African American bodies as "dead material" housing a "mind stagnated" by a life of "fleshly instincts."[4] Blackness became allegedly inert or hyperreactive matter, raw material (at best) capable of being molded and manipulated, especially through labor, but incapable of dynamic change on its own. Rather than a blank slate, Black life came to signify "flesh." "Before the 'body,' there is 'flesh,'" writes Black feminist theorist Hortense Spillers, "that zero degree of social conceptualization," the state of being stripped of social meaning, that attempted to hold captive and deny the possibility of growth.[5] Envisioned as unable to accumulate experience, captive Black flesh became capitalism's "living laboratory," a site of "total objectification," for extraction, in the form of slavery, of medical experimentation, and of the economies which they built. Meanwhile, the scientific theory that Blackness was a hardened state benumbed to progress radiated outward, shaping an anti-Black modernity that stigmatized and delimited, among other aspects, Black people's relation to pain, intellect, and criminality.

Plastic materials and environments extend the racist and colonial dynamics of plasticity into new arenas. Currently, the toxic burden of plastic accumulates in the Global South as islands in the ocean and as endocrine disrupters in the glands. Yet this movement can also open up ways to reconceptualize the body and power altogether. Anthropologist Vanessa Agard-Jones draws on interviews with people in Martinique concerned about the little-

regulated flow of toxins throughout their bodies and land. In her hands, plasticity becomes a tool of interrogating, rather than reproducing, power. How bodies take shape in dynamic relation with the chemical products of the post-colonial economy exposes "the multiple levels at which our material entanglements—be they cellular, chemical, or commercial—might be connected to global politics."[6] As it forms and deforms, blending the line between bodies and materials, plasticity crystallizes as the interface between life and power.

1 Michel Foucault, *"Society Must Be Defended": Lectures at the Collège de France, 1975–1976*, trans. David Macey (New York: Picador, 2003).
2 E. D. Cope, "Two Perils of the Indo-European" (part 1 of 2), *Open Court* 3, no. 126 (1889): 2054.
3 Jasbir K. Puar, *Terrorist Assemblages: Homonationalism in Queer Times* (Durham, NC: Duke University Press, 2007), 199.
4 Cope, "Two Perils," 2054.
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Rebirth Garments
by Sky Cubacub

Rebirth Garments specializes in making swimwear, dancewear, and athleticwear for queer and trans disabled folks of all sizes and ages. I started the clothing line in the summer of 2014, when there were very few gender-affirming undergarment options and even fewer swimwear options available. In surveys I've both seen and conducted, the number one desire from trans folks that is still unmet by the fashion industry is gender-affirming swimwear. Trying to meet this need, Rebirth Garments almost exclusively uses spandex and a compression material called powernet (a nylon/spandex blend).

I first dreamed of this clothing line when I was in my sophomore year of high school in 2008. I was under eighteen, and I couldn't find a place to buy a chest binder (a garment for compressing the chest). I also didn't have access to a credit card to buy one online. At the time, all the leading trans undergarment lines adhered to now outdated pre-/post-operative surgical thinking, using categorizations like FTM (female to male) or MTF (male to female) that conformed to binary frameworks. I was also unsatisfied with how boring the options were. Everything was largely white, black, or beige. I wanted something that was celebratory of my identities, something that made me feel cute and seen at the same time. Later, when I turned twenty-one, I gained a stomach/digestion disability tied to my polycystic

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Photograph by Colectivo Multipolar. Courtesy of the author.

ovarian syndrome. I was unable to wear most of my clothing because of their lack of stretch, or their very tight elastic waistbands that aggravated my stomach. I started making myself soft stretchy things to wear, sometimes with the seams on the outside in order to accommodate my lifelong sensory sensitivities. I figured that if I, a nonbinary disabled person, was struggling to have both my physical and emotional needs met by mainstream fashion, then maybe others were too. Maybe others would want custom-made clothing that celebrated all of their identities.

While we should all do what we can to use fewer petroleum products, there are just some things that we currently don't have the option of making in a truly eco-friendly way. Disability access should be the last place to eliminate plastics as we work toward cutting them out in other parts of life. We might work with powernet, but Rebirth Garments makes less than 1,000 garments a year in our own studio, by myself and a couple of neurodivergent and/or disabled queers. Compared to companies like Zara, which produce over 1 million garments a day on their own, in sweatshops, with primarily white, cis, thin, nondisabled people in mind, Rebirth Garments takes a more collective and intimate approach to accessibility. By staying small, our process is able to honor the needs of every individual while resisting the often individualized burden of self-care. Models and clients who are interested are interviewed; they are asked what their custom dream clothing would be, what would make clothing more accessible to them, what would make clothing more gender affirming. Every garment is handmade, every piece custom designed to the client's measurements, accessibility needs, and aesthetic preferences.

The fashion industry has purposely separated us from the knowledge needed to create and tailor our own garments in order to force a reliance on it; it lacks transparency, devalues the labor put into garment-making, and designs garments to fall apart after a season so that we can't escape the cycle. Fashion schools are just as guilty: they teach you not to question the status quo.

In the last year, I have been pivoting the focus of my work to teaching youth how to create their own intersectional clothing lines. I gained myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) in December 2019, which has impacted my energy and production, and I have had to severely limit my offerings and close my shop often in order to try to not exacerbate my health. Focusing on teaching the new generation of designers is what is giving me hope for the future and makes me feel like they can fill in the gaps that I am currently leaving.

Ani Liu is an internationally exhibiting research-based artist working at the intersection of art and science. Ani's work examines the reciprocal relationships between science, technology, human subjectivity, culture, and identity. Reoccurring themes in the work include gender politics, bio-politics, labor, reproduction, simulation, and sexuality.

Intimate Synthetic Entanglements
by Ani Liu

Shortly after I finished breastfeeding my son, I learned that researchers had found microplastics in human breastmilk.[1] It was a startling revelation; like many mothers, I went to great lengths to breastfeed. Considered one of the most nutritious foods for a baby, breastmilk is custom made by the lactating body for each individual baby. In addition to calories and vitamins, it contains antibodies and culture-specific flavor molecules.[2] And as I now know, also tiny particles of polyethylene, polyvinyl chloride, and polypropylene.

We have colonized the Earth with plastics, and now these plastics are colonizing our bodies in the most intimate of ways. Microplastics have been found in our blood,[3] our lungs, even our placentas.[4] Even more intimately, some plastic molecules mimic the shape of our own hormones, becoming endocrine disruptors. Bisphenol A (BPA), polyfluoroalkyl substances (PFAS), and phthalates have a molecular shape so similar to hormone structures that our bodies are tricked into thinking they *are* hormones. This is a kind of simulation with real implications—it can block our hormones from functioning correctly and can cause cancer, diabetes, neurological impairment, and reproductive disorders.

While the effects of our industrial processes on climate change and ecological destruction are well known, most people turn a blind eye until the realization that plastic colonization has infiltrated their own bodies. These individualistic beliefs are harmful: after all, we live in a complexly woven net of interdependence. What is considered an individual body is actually a rich community of other species we call a microbiome, which we could not survive without. To thrive, we exist in an ecology of cooperation, in complex relationships beyond human to human: with plants, animals, fungi, microorganisms, minerals, climate. The impact of our activities on these entities should be enough to awaken us to change, but perhaps it is not until our own bodies are notably impacted that we feel compelled to change.

That microplastics exist in placentas and breastmilk entered my news feed around the same time that abortion rights were challenged in the United States. Where I live, the constitutional right to abortion ended in 2022 when the Supreme Court abandoned its duty to protect this fundamental right. So, what of plastics and bans? These two simultaneous realities swirl together in my head: we are forcing people with uteruses to bear and care for children as our capacity to care for our planet—and even for ourselves—is strained. In the context of both plastics and reproductive rights, seemingly intimate acts between bodies are urgently re-entangled into the larger systems they exist in. The private body *and* the social body are both compromised in these toxic transgressions.

In recent years, the rallying cry for bodily autonomy, "My Body My Choice!," has come to mean many things for many people across the political spectrum. For some, it remains the ability to choose healthcare for one's own uterus, including abortion; for others, the ability to choose whether or not to receive a vaccine. And yet, as microplastics and endocrine disruptors course through our bodies, it also signifies no choice at all—or, rather, to what shouldn't be a choice at all: the collective, shared *right* to parent or remain childfree "in safe and healthy environments."[5]

1 In a study published last year in *Polymers,* researchers detected microplastic contamination in the majority of breastmilk samples from healthy mothers. See Antonio Ragusa et al., "Raman Microspectroscopy Detection and Characterisation of Microplastics in Human Breast Milk," *Polymers* 14, no. 13 (2022): 2700–2713.

2 Joanne M. Spahn et al., "Influence of Maternal Diet on Flavor Transfer to Amniotic Fluid and Breast Milk and Children's Responses: A Systematic Review," *The American Journal of Clinical Nutrition* 109, no. 1 (2019): 1003–1026.

3 R. L. Kuhlman, "Discovery and Quantification of Plastic Particle Pollution in Human Blood," *Environment International* 167 (2022): 107199–107206.

4 Antonio Ragusa et al., "Plasticenta: First Evidence of Microplastics in Human Placenta," *Environment International* 146 (2021): 106274–106281.

5 Loretta J. Ross and Rickie Solinger, *Reproductive Justice: An Introduction* (Berkeley: University of California Press, 2017), 9.

Picking Our Poison

by Ayesha A. Siddiqi

Plastics have a long history and, evidently, an even longer future. The word "microplastic" was coined in 2004, fifty-one years after General Electric and Bayer began developing polycarbonate, fifty-four years after DuPont began manufacturing polyester, and sixty-two years after Dow Chemical built a polystyrene plant. These innovations changed the world. And the post–World War II boom in manufacturing and consumption would only accelerate that change. Plastic was always known to have a range of forms and uses—the discovery of microplastics has proven the material can swirl like wind, fall like rain, be absorbed like nutrients, all while invisible to us. Microplastics have been found in the ground and in our blood. One can imagine them atomizing in the air with every twist of a plastic bottle cap, every snap of a Styrofoam clamshell food container.

Microplastics are everywhere, because plastic is everywhere and it reduces into specks so small they become aerosol. This fact lends microplastics an air of inevitability, which can come as a kind of bitter relief. To remain nourished as a human is challenging enough without the added rigor of avoiding poison. Microplastics join "heavy metals" and other toxins on the list of ambient threats to health I can only shrug at or close my hands in prayer against. The average body in the United States is a testament to the absence of regulations and consumer protections in this

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country. My parents live in an area where the tap water isn't safe to drink. They rely on water delivered in plastic bottles. Indeed, within the free market economy, the phrase "pick your poison" can be applied literally to any choice those in the US might make regarding what we put on, in, or near our bodies. Disrupting our internal systems, creating cancer in our cells, microplastics may prove to be to our human bodies what human bodies are to Earth. Wouldn't that be a tidy metaphor? It's an exculpatory impulse, to imbue environmental stressors with the wisdom of karma—as if it were our choices creating the consequences, as if the consequences were delivered equitably.

The US is among the top producers of plastic waste in the world. The highest concentration of microplastics in the world are in the beaches and waters of the Maldives, a tiny archipelago in the Indian Ocean. In addition to an ecosystem being choked by plastic, the Maldives are at risk of drowning in sea levels rising as a result of climate change, driven by consumption habits that occur far from them. Ancient civilizations can be tracked along water routes. Likewise, the flow of plastics reveals a historical record too: who eats and who gets shit on.

before / another
by Stephanie Ginese

birds & flowers make for better poems than this /
especially ones with names that require some research
when read or heard / everyone wants to read about
the bird perching or cooing in the novelty of morning /
what if instead of cooing / the bird coughed /
the moment before its petty heart seized / the moment
after the explosion / the moment the smoke plumed
unlike any feathers you've seen before /

the only truth: a grim plastic nebula has swallowed
the sky

& what of the water below

sterling fish bloat to the surface / of the sheened river /
the moment before the rain poisons / down on this town /
automobiles peel like eager fruit / small eyes burn
from the gas of a strange future / that only guarantees a
vacant field jeweled with the orange pill bottles / the
eyes' father left behind—

Stephanie Ginese is an author, workshop instructor, and stand-up comedian from South Lorain, Ohio. Her debut collection of poetry, *Unto Dogs*, was released in July of 2022 on Grieveland. She currently lives in Cleveland with her two children. She can be found at www.sginese.com.

in another moment / in another part / in another
explosion / there's another bird / too choked
to whistle a last song / flakes of alloy alley oop like
seed pods in the wind /

past a window where Ziploc bags are
being washed in hot leaded water
/ reduce / reuse / residue /
on the counter, plastic butter containers
cupping day-old beans
white clumps of rice
leftover ensalada de papas
memories of a home hugged by water
never any butter in them
like the cookie tin that promised the riches
& distance of Danish cookies
but there were never any inside
just needle, thread & the pin cushion that
looks like a tomato / red as the light

of a railroad signal in Ohio.

The Ontological Slippage and the Amassing Utility of Blackness
by Zakiyyah Iman Jackson

While scholars of race have critiqued the conflation of black(ened) humans with animals, objects, and machines in Enlightenment discourses, my concept of ontologized plasticization reframes the confluence of blackness and the nonhuman. My book *Becoming Human: Matter and Meaning in an Antiblack World* reinterprets Enlightenment thought not as black "exclusion" or "denied humanity" but rather as the violent imposition and appropriation—inclusion and recognition—of black(ened) humanity in the interest of plasticizing that very humanity, whereby "the animal" or "the machine" is one among many possible forms that blackness is thought to encompass.

Ontologized plasticization does not refer to the unnatural ordering of man and beast, simple objectification, or interchangeability, replaceability, or exchangeability. It is not the conceptualization of how an asset is understood as being of equal value to another. In other words, it is not a conception of the commodity and its uses. It is not a conceptualization of property—but of the properties of form. Ontologized plasticization critically engages the philosophical concept of "hylomorphism," or the form-matter distinction. Ontologized plasticization is a conceptualization of form itself rather than a conceptualization of how a form is taken up within the logics of law, economic markets, or political economies. It is a mode of transmogrification

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whereby the fleshy being of blackness is experimented with as if it were infinitely malleable lexical and biological matter—a form where form shall not hold. Consequently, blackness is produced as human, subhuman, and suprahuman at once. The "at once" here is important: it denotes immediacy and simultaneity. Blackness, in this case, functions not simply as negative relation but as a plastic, fleshy being that stabilizes and gives form to "human" and "nonhuman" as categories. It is precisely via blackness's inability to access conceptual and material stability other than by functioning *as* ontological instability for the reigning order that categorical forms such as "animal" and "machine" amass the semblance of both definitional clarity and endogenous coherence.

To put it another way, the concept of ontologized plasticization maintains that black(ened) people are not so much dehumanized, cast as nonhumans or as liminal humans, nor framed as animal-like or machine-like or simply exchangeable with these nonhuman forms, as they are rather cast as subhuman, suprahuman, and human *simultaneously* and in a manner that puts being in peril—because the operations of simultaneously being any-thing and no-thing for a given order constructs black(ened) humanity as the privation and exorbitance of form. The demand for willed *privation and exorbitance* that I describe does not take the structure of serialized demands for serialized states but rather demands that black(ened) humanity be all forms and no form simultaneously: human, animal, machine, object... In other words, plasticization, here, is a mode of ontologizing not at all deterred by the self-regulation of matter or its limits, nor by the fragility and finitude of the corporeal form we call "black."

Black studies scholars have often interpreted the predicament of black(ened) being in relation to either liminality (movement from one state to another state), interstice (being in between states), or partial states. What the concept of ontologized plasticization suggests is that these appearances are undergirded by a demand that

tends towards the fluidification of state or ontology. This demand for statelessness collapses a distinction between the virtual and the actual, and abstract potential and situated possibility, whereby the abstraction of blackness is enfleshed through an ongoing process of wresting form from matter. Antiblackness's materialization is that of a de-materializing virtuality.

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K. Jake Chakasim is a Cree designer from the Mushkegowuk Territory, located in Northern Ontario, Canada. His approach to community design is interdisciplinary, informed by architecture, engineering and Indigenous planning principles. He is cross-appointed with Carleton University's Azrieli School of Architecture and the School of Indigenous and Canadian Studies.

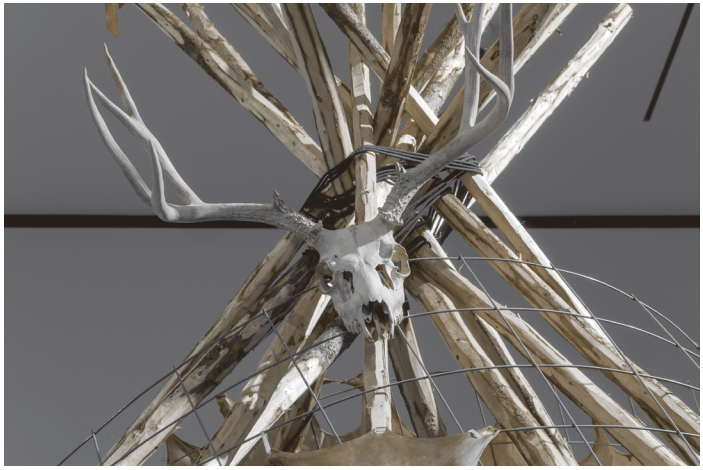
LeCreebusier Encounters the Plastic "Other"
by K. Jake Chakasim

LeCreebusier, the Indigenous Trickster, unearths a discarded phoropter, a thing of the past that can quickly determine the exact vision correction needed to readjust the twenty-first century Indigenous gaze.[1] What the plastic-lens space-age visor reveals is a contemporary "resistance structure" of a different kind, one that still carries remnants of "Otherness"—that is, the "white male" construct that *layers* and *speaks to* (but not from) Indigenous lands, all the while informed by the resurgence and reclamation of Indigenous identity that seeks to mediate the impact of global civilization.[2] This is a structure that comes to terms with not only the proliferation of twenty-first-century materiality but also a settler and diasporic ideology that is scattered across the Native American Indigenous landscape. An extractive resource industry has provided very little relief to temporary comforts in the form of standardized building products and a plethora of discarded "plastic emotions and emotives." Plastic is informed by the quality of disbarment (by the wayside, discarded, packaged, barcoded, and shipped throughout the world). It's no wonder LeCreebusier is left standing on their head trying to make sense of the realities on the ground, all while those holding the economic reconciliation purse strings in federal positions continue to make uninformed policy decisions about the preservation of culture and livelihood of Indigenous peoples. Is it a coincidence

that LeCreebusier dually questions and exposes a financial sleight-of-hand, that is, the tokenistic flip side of truth and reconciliation, which happens to be nothing more than the latest form of trickery offered up by the Canadian government? I think not!

For many Indigenous communities, there is a certain way of being in the world that is built upon intergenerational Indigenous knowledge. From a Cree perspective, to practice one's *wapimisow*[3] is a way to think of the phoropter as a "reflexive strategy'"—again a kind of Indigenous "resistance structure" born out of an awareness of time that draws our attention back to the northern landscape and then forward in the direction of the metropolis, only to repeat itself from place to place, from generation to generation, from existence to near extinction, and, finally, from adaptation to survival. And that's only a surface analysis based on what LeCreebusier sees taking place "inside the community," that is, the federally regulated Indian Reservation border—deemed emotive constructs of the mind—or the attitude that Indians need and continue to be contained. What occurs outside the community, beyond the borderlands out on the land, is where the real cultural action (and inaction) takes place.

I emphasize "inaction" because there has been an influx of unnatural materials, foreign assemblages, and consumerism into Indigenous communities that has disparagingly contaminated, gamified, and altered our way of life and supporting ecosystems. These discarded items never seem to recede, be reclaimed, or recycled through acts of Indigenous stewardship. In fact, many communities believe it's far more valuable to extract and export natural resources than it is to reclaim and restore the landscape that seeded our Indigenous knowledge. What results is a further decentering of Indigenous living, away from the natural and into an abysmal synthetic sea of compounds, components, and heterogeneous elements imported and made elsewhere. Take, for instance, the Canada Goose jacket: a luxury brand worn everywhere around the world from urban



K. Jake Chakasim, *WAPIMISOW: Trickster Builds A Nest for the End of the World* (detail), *2020*. Charred tipi poles with locally sourced materials. Installation view of *Nest for the End of the World*, Alberta Gallery of Alberta, *2020*. Photographs by Charles Cousins.

business districts to major cultural festivals.[4] Akin to trickster narratives, it's often hard to sort out truth from fiction when it comes to accurate information about how synthetic down vis-à-vis natural feathers are sourced. This further problematizes not only the sustenance of Cree societies and their ecological relationship to the migratory goose (*niska*) but also how the company ethically goes about sourcing goose down feathers, not to mention coyote fur (the coyote happens to be trickster archetype too) for its jackets. As the popularity of Canada Goose jackets continues to grow, so too has the backlash against them. Especially when the jacket has become a diasporic status symbol predicated on an embroidered sleeve patch that has nothing to do with *Kanata* (the name "Canada" is derived from this Huron-Iroquois word, meaning "village" or "settlement") as a place but, rather, with the onslaught of a meaningless synthetic material culture that, for one, is dominated by animal cruelty and, secondly, overshadows the genocidal atrocities inflicted upon Indigenous peoples in the form of American Indian boarding schools and Indian Residential Schools, institutions that were established and carried out by US and Canadian state governments with aid from Vatican Christian Missionaries. Thank you very much, plastic Jesus!

As we Indigenous people strive to live and maintain our semi-nomadic lifestyles between seasonal hunting camps and inadequate housing on Indian Reservation lands often funded by the federal government, one must wonder how we can maintain our Indigenous sensibility when we are assailants in the environmental crises that lay before us. Whether by way of shotgun shells and their plastic casings, forever scattered across Indigenous lands, or discarded Jerry gas cans used as target practice devices, we too have become a detriment to the environment. We also use plastic-laden (oil-based) geese, deer, and duck decoys in place of the handmade artifacts that preserve the tactile importance and wisdom of Indigenous knowledge. Indeed, as Indigenous hunters grapple with the demands of global commodification and standardization—using plastic luminant materials, camouflage tarps in place of (animal) skins, and plastic laminate flooring in place of natural flooring materials—Indigenous communities are under increasing pressure to alter and adapt their Indigeneity in the hope of keeping pace with an ever-changing world. But the situation is one in which Indigenous hunter-gatherers have haphazardly warpainted themselves into the center of the circle and can't seem to get out.

Embracing change, the Cree trickster must discard the phoropter to adjust their gaze—*from the oral to the tactile, the tactical to the visual, and now the visual to the digital*. LeCreebusier hears an "unceded voice from the land" come through on Spotify. "Is anybody out there?" A voice of adolescence emerges—it is Chakabush, another Cree Trickster. "I've got the latest LG tablet with my sketches in. Got a St. Anne's Indian Residential School bag, a plastic toothbrush, and a comb. When I'm a good boy the augurs sometimes throw me a bone. I got elastic bands keeping my moccasins on. Got swollen hand blues. I've got thirteen channels of shit on my plastic Smart TV to choose from. I've got electric lights. And I've got second sight. I've got amazing powers of observation."[5] Imagination. Transformation. Reclamation. "But oh, lately, that addictive impulse to pick up the phone says, 'There's nobody home.'" And should we be surprised when, in fact, the plastic Other is here to stay?

K. Jake Chakasim, *WAPIMISOW: Trickster Builds A Nest for the End of the World*, 2020. Chakabush, Cree Trickster. The red Cree syllabics translate to *Wapimisow*. Courtesy of the author.

1 The concept of the “gaze” within Indigenous architecture interrogates it from historical, cultural, and ontological standpoints—addressing the Indigenization of the architectural image as a means for decolonizing the field of design and contemporary architecture studies.

2 Kenneth Frampton’s “critical regionalism” proposes a segue into Indigenous architecture as a register for dialogue between Indigeneity and the forces of globalism. As John McMinn and Marco L. Polo suggest, it serves as an important model for a contemporary (Indigenous) architectural criticism that not only challenges the status quo but also reinforces cultural practices. Parentheses added are my own. The framework participates in a broader critical discourse by engaging with sustainability not only as a technique or method but also as a cultural paradigm inspiring contemporary theorists to establish their own distinctive cultural forms, voices, and identities, and reacting to those who already do so. Hence, the imaginary Cree Trickster LeCreebusier. See John McMinn and Marco L. Polo, *41° to 66°: Regional Response to Sustainable Architecture in Canada* (Cambridge, ON: Cambridge Galleries/ Design at Riverside, 2005).

3 The cultural term applied, *Wapimisow,* is an Omushkegowuk Cree term used to describe the ability to see a reflection of oneself physically, mentally, and/or in a premeditated form.

4 Our Changing Climate, “The Problem with Canada Goose,” video, 7:03, YouTube, July 15, 2019, https://www.youtube.com/watch?v=v-Ik89bbHRk.

5 Quote inspired by Pink Floyd’s “Is There Anybody out There?” and “Nobody Home” from their concept album *The Wall*, which explores abandonment and isolation. Severing family relations, leading to cultural isolation and feelings of abandonment, was a procedure and psychological practice used by the Church and state governments to isolate Indigenous children from the influence of their own culture and spirituality, in order to assimilate them into the dominant US and Canadian cultures.

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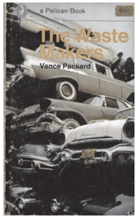
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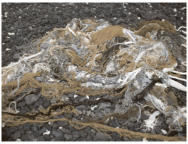










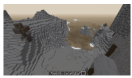
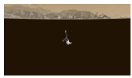
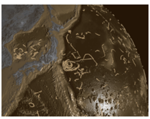



WAR

SPEED


ACTIVE TRAPLINE

ACTIVE TRAPLINE