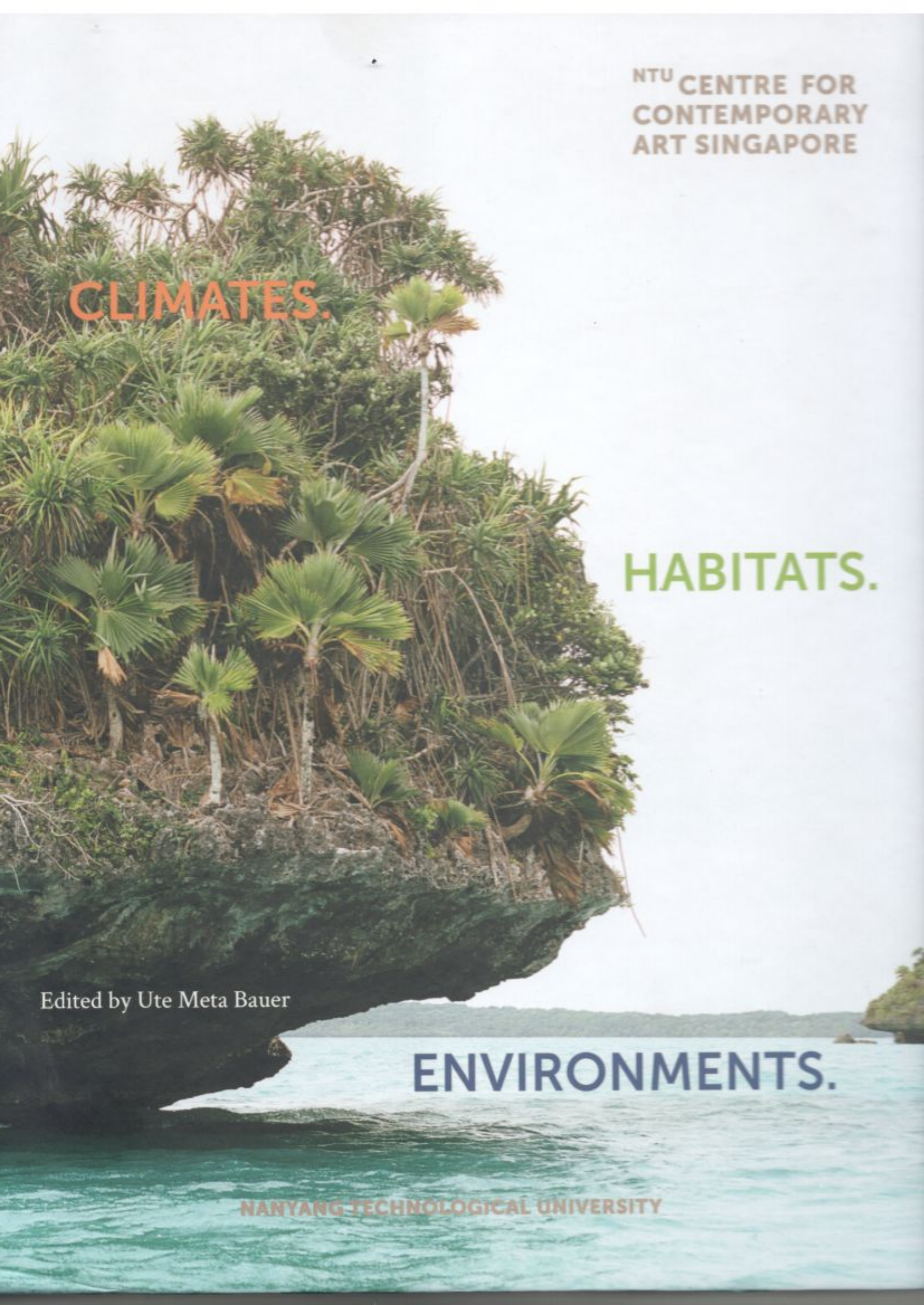




NTU CENTRE FOR
CONTEMPORARY
ART SINGAPORE

CLIMATES.

HABITATS.

Edited by Ute Meta Bauer

ENVIRONMENTS.

NANYANG TECHNOLOGICAL UNIVERSITY

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LANDFILLS — NON-PLACES OF THE ANTHROPOCENE

Ravi Agarwal

It appears as a small, natural mountain, looming against the twilight sky, a growing moonlit-silver aura around its skyline, like in an Ansel Adam photograph. It is, however, anything but "natural". Here in India's tallest landfill, at Ghazipur in New Delhi, lies an archive of the city, its waste. Gargantuan and overflowing, the decades-old dump is a location of biopolitics, science, equity, nature, culture, and the ignored nonhuman. As a site of entanglements and an assemblage of worlds of commodities, it is capitalism's heterotopia—hidden from view in its interstices, but without which capitalism cannot exist. This essay explores the multiple ways in which the idea of waste is present all around us. It suggests that waste cannot be seen in isolation from our ontological and epistemological relationships with nature and cultures. To think of waste sustainability is to shift our positions vis-à-vis nature per se.

The landfill is a messy assemblage of materials¹ and non-materials. The waste in one is a "hyperobject",² a non-value, and a marker of commodities as they decay or transform—outcasts of capitalism and globalisation. Wastes are entangled with a plethora of gases, toxicities, waste pickers, bacteria, animals, technologies, international treaties, and so forth. Systems of ethics, justice, relationships, legalities, and behaviours are encompassed in them. Materials that form waste end up in the "non-places"³ of landfills. Coming from elsewhere, they transform local ecologies to non-nature—an "accumulation without metabolism".⁴ In fact, landfills mirror the larger world they inhabit because "in collecting

goods and people from around the world, capitalism itself has the characteristics of an assemblage.⁵ In the post-Enlightenment age of human exceptionalism, landfills and wastes are markers of the Anthropocene.

The landfill is a wasteland—"a space that figures as the antithesis, the absolute Other, of civilization".⁶ No one except the nonhuman and less-than-human (e.g., scavengers, waste pickers) venture here, a disgusting place of rot and toxicity. Owing to industrial and military histories, some have been made barren, contaminated with deadly chemicals and radioactive materials, or have been turned into burial sites for disposed weapons. Many are beyond redemption, and their hazardous nature is not in public knowledge, causing harm to those who use these sites. In the United States, a few are classified as "Superfund sites",⁷ requiring massive, exorbitantly expensive, and almost impossible cleanups. Those storing mercury, nuclear wastes, and the like are often out of sight in old, deep salt mines or even on the seabed. Once located on the outskirts of habitations, many landfills are now in their midst, often in the poorest neighbourhoods, increasing risks to those living there.⁸ Such "wastelands" are along riversides, in old mines, in cities, even on ships, and now the Great Pacific Garbage Patch contests for the term itself. They are, to paraphrase Walter Benjamin's description of Paul Klee's painting *Angelus Novus* (1920), the debris of progress.⁹

A commodity culture infuses landfills. What ends up here has passed through institutionally and technologically determined consumer behaviours, which valorise cleanliness and efficiency according to social and legal norms of waste separation, collection, and disposal. Consumers, though, have little knowledge about the earthly origins of these commodities or their post-use trajectories. Economic values, which facilitate nature's entry into capital markets, have eliminated all other forms of its worth. Such a commodification of the world is rooted in human society's alienation from nature; when this state is prolonged, violent displacement results and commodification is exacerbated.

From landscapes of entangled and complex ecosystems, nature converted to the category of Other has allowed its abstraction and extraction into raw material. This stark separation goes right to the heart of a man-and-nature divide, where even the possibility of understanding another

ethos seems remote. On the other end of the spectrum are cultures where materials are considered part of local ecologies of life-support systems. Here they are not materials, but part of relationships of coexistence. When extracted, they are done so with an ethic of care and reciprocity. Indigenous communities, for example, take from nature only as much as they need, not more. Plants are not uprooted; instead, their roots are left intact, so that they can provide again. Another kind of identification with nature is evoked. What kind of ontological self does an Indigenous person inhabit when she claims that "she is the land, and not *on* it"? As theorist Karen

1 In this essay, "materials" refers to what is extracted from the earth to form part of an industrial economy.

2 The term was coined by environmental philosopher Timothy Morton to describe indestructible materials like Styrofoam, then evolved to refer to his idea of "entities of such vast temporal and spatial dimensions that they defeat traditional ideas about what a thing is in the first place." See Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013); Timothy Morton, *The Ecological Thought* (Cambridge: Harvard University Press, 2010).

3 The term proposed by anthropologist Marc Augé generically refers to places that produce feelings of alienation as opposed to places that are historical, relational, or connected with identity. See Marc Augé, *Non-places: Introduction to an Anthropology of Supermodernity*, trans. John Howe (London: Verso, 1995).

4 Heather Davis, "Plastic: Accumulation without Metabolism", in *Placing the Golden Spike: Landscapes of the Anthropocene*, eds. Dehli Hannah and Sara Krajewski (Milwaukee: INOVA, 2015), 66–73, exhibition catalogue.

5 Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015), 133.

6 Vittoria Di Palma, *Wasteland: A History* (New Haven: Yale University Press, 2014), 4.

7 Thousands of contaminated sites exist in the US "due to hazardous waste being dumped, left out in the open, or otherwise improperly managed." See "What is Superfund?", United States Environmental Protection Agency, n.d., <https://www.epa.gov/superfund/what-superfund>.

8 See, for example, James T. Hamilton, *Environmental Equity and the Siting of Hazardous Waste Facilities in OECD Countries: Evidence and Policies* (paper presentation, OECD Environment Directorate Workshop on Distribution of Benefits and Costs of Environmental Policies, Paris, 4–5 March 2003), <http://www.oecd.org/greengrowth/tools-evaluation/38436943.pdf>.

9 Walter Benjamin, "Theses on the Philosophy of History", in *Illuminations: Essays and Reflections*, trans. Harry Zohn (New York: Schocken Books, 1969), 258.

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Barad writes, "Practices of knowing and being are not isolable; they are mutually implicated. We don't obtain knowledge by standing outside the world; we know because we are of the world. We are part of the world in its differential becoming. The separation of epistemology from ontology is a reverberation of a metaphysics that assumes an inherent difference between human and nonhuman, subject and object, mind and body, matter and discourse."¹⁰

Materials thus alienated from their moorings, cultures, and meanings start their journey to end up in a landfill. Anthropologist Anna Tsing writes, "Alienation is that form of disentanglement that allows the making of capitalist assets. Capitalistic commodities are removed from their lifeworlds to serve as counters in the making of further investments... Thus, too, alienation makes possible accumulation—the amassing of investment capital."¹¹ With such vast chasms in ways of being, the violence accompanying material extraction is unseen, let alone atoned for. Curator-activist Lucy Lippard in her book *Undermining* (2014) explores how the notion of "land use" was detrimental to landscapes colonised as wastelands, referring to American Indian lands. When "some of these 'wastelands' turned out to be rich in mineral resources, industrial intrusion—with and without the sovereign nations' consent—became rampant, trampling on Native rights and land ethics."¹² Likewise, the artist Navjot Altaf in her film *Soul Breath Wind* (2018) shows the wanton destruction left in India by the mining of tribal lands without local communities' permission. Their land is turned into Martian landscapes, leaving ancient cultural connections to the soil broken.¹³ Subsequently, such wastelands become "a geological lockbox for chemical sludge, lab gear, and filters laced with plutonium"¹⁴—Superfund sites!

With such discards born of alienation and uprooting, the planet is being re-stratified. First mined, extracted, and deep-sea drilled to uncover billions of years of evolution locked in its substrate, then replaced by new layers of plastics, nuclear waste, toxic materials, and chemicals. Waste is scattered all over and even beyond the surface of earth. From plastics at the bottom of the Mariana Trench—the deepest-known point of the planet—to outer space, littered with space debris circulating the earth, waste is everywhere. Landfills preserve remnants from a long time ago. Landfill archaeologists have found newspapers buried from more than 50 years back, which are still readable. Nuclear waste buried in deeper strata are like time capsules. These layers are the archives of our fragmented times, to be read and interpreted by those who will unearth them in the future.

Waste can be toxic. However, arguably the idea of contamination and toxicity is only an anthropogenic one and assumes that something pure exists in nature. Tsing affirms, "Everyone carries a history of contamination; purity is not an option."¹⁵ This is true but only in an evolutionary time frame. For example, the coronavirus that causes Covid-19 is deadly, not only to humans but to some animals as well.¹⁶ It safely coexists in bats and has coevolved in age-old bacterial assemblage and in entangled "worldings"¹⁷ with them. In this industrial age, however, toxicity has assumed another dimension, as it has been introduced into processes and products at a spatial and temporal scale like never before. When the earth is extracted as raw material, which are processed, purified, and infused with chemicals, a concentrated toxicity is produced. For instance, a ton of radioactive soil yields only a few grams of uranium-238, usually the most naturally occurring uranium isotope. Almost 100,000 mostly untested chemicals are in use in various everyday products, all produced in the last century.

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Cancer-linked brominated flame retardants lace electronic plastics, PVC plastic products contain harmful phthalates, and lead and volatile organic compounds pervade household paints to make them longer lasting. Many of these chemicals cause low-level or chronic toxic impacts like the disruption of the endocrine system, cancer, and lowering of IQ, even intergenerationally, as they can be transmitted through breast milk. These health ramifications have been a cause for concern since the 1960s, when Rachel Carson published her path-breaking book, *Silent Spring* (1962).¹⁸ The chemicals are toxic throughout their life cycle as well: from landfills, owing to moisture and bacterial action, such chemicals leach out into the groundwater and wide arterial network, while factories spew them into the air.

The biopolitics of contamination invades human and nonhuman bodies. Toxins become burdens on the body and impact different bodies differently. Recycling workers and waste pickers are especially vulnerable, as are the communities living nearby chemical industries, waste incinerators, and landfills, in particular the women and children amongst them. Now, their bodies have been additionally infiltrated with nanoparticles and microplastics containing chemicals. Till recently, scores of vultures soared over the landfills in Delhi, but today they are gone, almost extinct. The bodies of these ancient disposers of organic waste were designed to assimilate flesh and bones but not industrial toxins, which have also infused the carcasses of livestock. The question is: How does a species that has survived for millions of years just die out in a matter of years?¹⁹ Fish have been found to be deformed due to exposures to chemical effluents. The body itself has become a landfill for toxic chemicals.

The precise nature of the toxicity of waste is often legally indeterminate due to difficulties in pinning down specific impacts. The standardisation, classification, and categorisation of waste determines if it is termed hazardous or not and significantly changes the costs of its handling, storage, and treatment. Yet, there is no single global definition for hazardous waste. The classifications are done primarily from human-health perspectives and rarely consider impacts on the nonhuman world. The levels in question often are in microscopic quantities of parts per million. The process of making such standards is not based on empirical evidence alone, but is a political contestation of science, health,

and policy, where industrial lobbyists, scientists, technology providers, and activists are involved. In theory, standards protect human health from environmental pollutants. In practice, they struggle continuously with a far more complex reality. Standards are thus about both technology and law, but are also set through political mechanisms.²⁰ Where contaminants with low-level chronic toxicity are concerned, the negotiations become even more complex as the science is not conclusive. Industries are in opposition since the setting of stricter standards impacts their products. For example, plastics designated as hazardous cannot be easily recycled, incinerated, or disposed of. In some cases, different UN conventions have classified the same waste in different categories, leading to great confusion.

10 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), 185.

11 Tsing, *Mushroom at the End of the World*, 133.

12 Lucy R. Lippard, *Undermining: A Wild Ride in Words and Images through Land Use Politics in the Changing West* (New York: The New Press, 2014), 49.

13 *Soul Breath Wind*, directed by Navjot Altaf (2018).

14 Lippard, *Undermining*, 112.

15 Tsing, *Mushroom at the End of the World*, 27.

16 Denmark culled 17 million minks for Covid-19 infection. See Adrienne Murray, "Coronavirus: Denmark Shaken by Cull of Millions of Mink", *BBC News*, 11 November 2020, <https://www.bbc.com/news/world-europe-54890229>. Confirmed Covid-19 cases in tigers have also been reported from the Bronx Zoo (USA) and in the Pench National Park in India. See Jacob Koshy, "Pench Tiger Death Raises COVID-19 Fears", *Hindu*, 7 April 2020, <https://www.thehindu.com/news/national/pench-tiger-death-raises-covid-19-fears/article31275062.ece>.

17 Feminist theorist Donna J. Haraway has used "worlding" to refer to ways of "world-making by which different species, technologies, and forms of knowledge interact", as Erik Bordeleau puts it. See Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).

18 Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962).

19 For a detailed essay, see Ravi Agarwal, *In the Shadow of the Vulture: An Extinction of Memory* (New Delhi: Public Art Ecology, 2008), <https://www.raviagarwal.com/2018/09/18/in-the-shadow-of-the-vulture-an-extinction-of-memory/>.

20 For a detailed essay, see Ravi Agarwal, "Standardised, Packaged, Ready for Consumption", *Sarai Reader* 5 (2005): 412–19, <https://www.raviagarwal.com/2018/02/11/standardised-packaged-ready-for-consumption-sarai-reader-05/>.

Such indeterminacy between waste and non-waste plays an important role in the international waste trade. End-of-life ships, for example, may have been constructed with hazardous material such as asbestos (depending on when they were made), paints containing the carcinogenic biocide TBT, or toxic oils like PCBs. Under the UN Basel Convention, hazardous waste is prohibited from being exported to ship-breaking yards in developing countries.²¹ But the question of at what point in a ship's final journey it becomes waste has plagued the parties to the Convention for over a decade and is mired in politics.²²

Indeterminacy is also owed to other factors. In some societies, products are used for longer and have extended lives as secondhand goods or hand-me-downs, going through several rounds of repairs and repurposing. Decay and breakdown because of bacteria and fungi, aided by moisture, air, and physical force, is another factor. Some things, like plastic and nuclear materials, can take many millennia to decompose. Decaying food is waste, but the resultant compost is not. There is ambiguity as well as fluidity about the changing forms of wastes, and at what point they end up in a landfill.

The legal as well as illegal international waste trade is based on an economic logic of flows from richer to poorer countries, and classifications play a big role. Estimated to be worth over several hundred billion dollars, this trade is in effect a neocolonisation of poorer nations. The US frack-ing industry was recently reported to have lobbied its government for a trade deal that lifts the export ban of plastic waste to Kenya.²³ The UN Basel Convention was precisely designed to prevent such exports, but it has been only partially successful because of the high economic stakes involved. Till today, the bulk of global electronic waste is still dumped and recycled in China, due to poor environmental and labour oversight.²⁴ Moreover, of late, as production centres have moved from Europe and North America to South and Southeast Asia, so have the waste outfalls of production and mining. The documentary *Darwin's Nightmare* (2004) shows how fish from Tanzania's Lake Victoria are converted into expensive fillet for European markets, while the waste of maggot-ridden fish heads are sold as food to local people.²⁵ Similarly, it is easy to find "export-surplus" clothing--discarded rejects of exports--in cities like New Delhi. The waste economy works solely on harsh economic realities.

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These realities, combined with the hierarchies of social and political power, race, class, and caste, mark notions of waste. Social ideas of purity and contamination permeate such discriminations, entrenched in age-old concepts of clean and dirty to determine how human and nonhumans are viewed. For example, in India, upper-caste Brahmins are considered pure, while lower-caste Dalits²⁶ are considered dirty, as are vultures, while cows are pure. Poorly paid waste workers, many of them women and children, come from lower castes and engage in jobs thought of as impure and dirty by others, risking high exposure to contaminated wastes. They are socially ostracised, often trapped in structures of endless poverty. At landfills is also where most waste, local or international, ends up, dumped out of sight in the name of recycling, a stark reminder of the environmental injustices involved.

Today, with landfills overflowing, there are world-wide efforts to reduce waste. Citizen initiatives are underway in many places to create local zero-waste systems and improve consumer participation in cooperative waste

collection. Beach cleanups and ocean-garbage collections are supported by UN agencies as well as by corporate stakeholders. There are global campaigns against plastic usage in favour of more biodegradable materials. These are all commendable efforts, of course, but they may not be enough. Globally, the volume of waste is rising and it is increasingly being dumped on vulnerable and poorer countries, where its true cost to health and the environment is hidden. In the last decade, electronic waste increased at about 5 per cent annually, yet less than 20 per cent was recycled.²⁷ Despite the hype around recycling plastics, less than 9 per cent is recycled, and their production will quadruple in the next three decades.²⁸ Toxins in products render their waste too hazardous to recycle, hampering new efforts towards creating circular economies. The question of environment equity and justice also remains unaddressed. The fact that global economies are based on constantly increasing the consumption of goods is at the root of this conundrum.

Hence, to conceive of a less wasteful planet may require a more fundamental shift besides improving the above efforts. Waste needs to be rethought of, not in narrow silos but as part of "naturecultures".²⁹ A reconfiguration in the form of multilayered ecological relationships would also entail a shift towards an ethos of humility, respect, reciprocity, and cooperation, rather than the exploitation and dominance of nature. New Materialism scholars like Karen Barad have proposed an "ethico-onto-epistemological" shift. She defines "erhics" as being "about responsibility and accountability for the lively relationalities of becoming, of which we are a part."³⁰ The landfill is only the symptom of a larger malaise. It is the sign of things that have gone terribly wrong elsewhere.

21 UN Environment Programme, *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, n.d., <http://www.basel.int>.

22 For the status of and various reports on ship breaking (the demolition of a ship), see NGO Shipbreaking Platform (website), n.d., <http://www.shipbreakingplatform.org>.

23 Hiroko Tabuchi, Michael Corkery, and Carlos Mureithi, "Big Oil Is in Trouble. Its Plan: Flood Africa with Plastic", *New York Times*, 30 August 2020, <https://www.nytimes.com/2020/08/30/climate/oil-kenya-africa-plastics-trade.html>.

24 For the status of e-waste dumping and reports, see "Electronics Stewardship", Basel Action Network, n.d., <https://www.ban.org/estewardship>.

25 *Darwin's Nightmare*, directed by Hubert Sauper (2004; Toronto: Capri Releasing, 2005), DVD.

26 In the Hindu caste system, now illegal but pervasive, the lowest caste of Dalits (or "untouchables") carry out jobs like sweeping and are considered untouchable by higher castes.

27 "Electronic Waste Generated Worldwide from 2010 to 2019 (in Million Metric Tons)", Statista, n.d., <https://www.statista.com/statistics/499891/projection-ewaste-generation-worldwide/>.

28 Darin Qualman, "Global Plastics Production, 1917 to 2050", *Darin Qualman* (blog), 17 December 2017, <https://www.darinqualman.com/global-plastics-production>.

29 The term, introduced by feminist scholar Donna J. Haraway, seeks to collapse the nature-culture divide, suggesting their inseparability in ecological relationships. See Donna J. Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003).

30 Barad, *Meeting the Universe Halfway*, 393.