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Labor Laid Waste: An Introduction to the Special Issue on Waste Work

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Abstract: Waste studies brings to labor history a suite of conceptual tools to think about precarious and labor, human capital, migration, the material quality of labor in urban and rural infrastructures, and the porosity and interchangeability of workers' bodies in the toxic environments in which they labor. In this introduction, we explore the conceptual insights that the study of waste offers for the field of labor history, and what, in turn, a focus on labor history affords to social science research on waste. We examine the relationship between surplus populations and surplus materials, the location of waste work at the ambiguous fulcrum of trash and value, and the significance of labor for the understanding infrastructure.

In Amsterdam, on a sleepy Saturday morning in June 2018, I (Kate Brown) joined a group of waste workers for a regular clearing of the city's canals. The waste workers did not have the profile you would expect. Two were from Indonesia, come to Amsterdam not as migrants, but as tourists. They were IT workers, who had purchased their right to scour Amsterdam's canals on Airbnb for \$31.00 apiece. A retired Dutch pair won their tickets in a raffle. A third couple, young professionals, had also obtained on a website their chance to put on gloves, grab a fishing net and sweep plastic bottles from the canals with the tour company "Plastic Whale."

The morning grey and cool, we set off on a boat made from recycled plastic. As we trolled for what our captain and guide, Jurriaan Grolman, called "treasure," he held up a swatch of torn, dirty plastic. "A lot of people think of this as junk," he said, "but look at how beautiful it is. It is strong, flexible and can be used for some many things."

Stretching out our long nets we reeled in lots of treasure: bottles, packaging, beer cans, cigarette butts, plastic straws, even a brand new workman's jumpsuit. We carefully sorted our catch into bins on the boat. Soon we smelled of urine. Passengers on conventional tour boats and pedestrians on bridges applauded and gave us thumbs up. Waste workers normally do not win accolades as they go about their day, nor do dumpster divers, the gleaners of trash cans, or scavengers for deposit bottles. We were a special class of waste workers: paying volunteers. We did not have to pick up garbage for

a living. That made our efforts to combat the growing mountain of plastic waste circling the globe appear as praise-worthy, as meager as the efforts were. While such unpaid waste work signals the moral worth and environmental bonafides of those who undertake it, badly paid waste work tends only to signal desperation and under-development.

In March, 2017 waste work made international headlines when a landfill collapsed, killing 113 people who were working and living at the site on the outskirts of Addis Ababa, Ethiopia.¹ Rising between a highway and a leper colony, the Koshe landfill had been the city's dump for over four decades. Hundreds of people searched through the rubbish every day, an occupation they called "scratching."² They too gathered plastic, earning a meager living from scraps: discarded water bottles, plastic bags, and broken PVC chairs and basins. The landfill had been a space of opportunity, a route into the urban economy for rural migrants looking for better work. There was plenty of waste, a product of the city's rapidly expanding economy and the widespread availability of low-cost Chinese plastics imported to Ethiopia and manufactured locally. The landfill was in fact overfull. The government had planned to close it and open a new site elsewhere, until protests from neighbors there meant Koshe stayed open. Many of the "scratchers" lived precariously in improvised shacks on the edges of the dump. Unable to afford housing in Addis's booming property market, they settled on the periphery, living and working at the landfill, whose name means "dirty" in Amharic. The mounting landfill finally gave way, burying the scratchers' homes in an avalanche of garbage. Ethiopia declared three days of mourning for the seventy-five women and thirty-eight men who died. Even so, officials blamed scratchers for the collapse. Denying workers' explanations that ongoing construction of a biogas plant destabilized the landfill and triggered the wasteslide, officials charged that it was the scratchers' scavenging work that undermined the landfill. While the immediate cause of the deaths remains unknown, the deep-rooted causes are all too familiar and widespread: structural unemployment, undermined rural livelihoods, and speculative urban real estate development. The Koshe collapse is the extreme and spectacular end of the spectrum of slow violence that shapes waste work around that world in ways that are typically more chronic and mundane.³

¹Agence France-Press, "Death toll from rubbish dump landslide in Ethiopia rises to 65," The Guardian, March 13, 2017; Ahmed, Hadra and Jacey Fortin. "As Trash Avalanche Toll Rises in Ethiopia, Survivors Ask Why." The New York Times, Mar 20, 2017.

²Caroline Knowles, "Untangling Translocal Urban Textures of Trash: Plastics and Plasticity in Addis Ababa," Social Anthropology 25 (2017): 288–300.

³ Fatal landfill collapses are not rare, however. Less than a year later this story was replayed in Mozambique, when torrential overnight rains caused a landslide at Maputo's landfill that killed sixteen people. Naturally occurring

This special issue “Labor Laid Waste” investigates the range and depth of labor designated as waste work. The articles in this issue show how as the globe has become littered with more and more toxins, the volume of waste workers is increasing apace. The authors of this issue also show that the reverse is also true; as global markets toss more people out of labor markets and/or disenfranchise them from ownership of the means of production, they turn to waste work to get by.

The expanding global volume of waste work points to jobs that have yet to be characterized as waste work, but should be. A few summers before my (Kate Brown’s) Dutch garbage tour, in 2016, I joined another group of waste workers. They were teens working in the swampy pine forests of northern Ukraine about 300 kilometers West of Chernobyl. The teens spent their days picking berries to sell to local buyers to make about \$25 a day, a good salary in an economy where a school teacher earned \$80 a month. With my colleague Olha Martynyuk, I joined the teens for a day of picking, trying to keep up as they groomed berry bushes with small scoops made of tin cans. They worked quickly, picking about five to ten pounds a day. Some had lips stained blue from eating berries as they went.

We followed the pickers to the road where women waited in front of vans. The merchants weighed the pickers’ berries and paid them in cash on the spot. We trailed the buyers to a local warehouse in the town of Rokitne where many vans were off-loading the day’s pick.

A wholesaler went among the plastic crates of berries waving the wand of a radiation detection device. I asked her how many of the berries come in radioactive. “All the berries are radioactive,” she exclaimed, “but some are really radioactive, over 3,000 Becquerels a kilogram!”

The threshold for that warehouse was 450 Bq/kg. About half the berries, the wholesaler put aside because they came in above the permissible norm for radioactivity. Despite that fact, she bought all the berries, the hotter ones at lower prices. The pickers told me that the wholesalers simply mix the dirtier and cleaner berries to come up with an average level of radioactivity that passed the EU and US threshold of 1250 Bq/kg. Then the berries pass into Poland for processing

methane gas in a landfill in Sri Lanka exploded in April 2017, killing twenty-eight people and destroying nearby homes. Similar disasters have taken place killing 4 people in Guatemala in 2016 and as many as 91 people in Shenzhen, China 2015. (Respectively: Swingler, Shaun. “Living and dying on a rubbish dump: the landfill collapse in Mozambique.” *The Guardian*, Feb 26, 2018; Kotelawala, Himal. “Sri Lanka Death Toll Rises in Garbage Dump Collapse.” *The New York Times*, Apr 17, 2017; “Massive garbage landslide in Guatemala leaves at least four dead.” *The Washington Post*, Apr 27, 2016; and Forsythe, Michael. “Landslide Hits Southern City, Sending Hundreds Fleeing, China Reports.” *The New York Times*, Dec 20, 2015.)

and from there they are sold as “wild, organic berries” in Europe, Canada and the US.⁴

The amazing thing about the expanding berry trade in northern Ukraine is what was obvious to our captain Jurriaan Grolman in Amsterdam. In a world where synthetic toxins have saturated ecosystems, people confuse the distinctions between waste and treasure. The berries were prized as wild produce in a global economy of industrialized food products, while the plastic in the canals was discarded as junk in structural systems that hide the price of petroleum products with state-supported oil industries and lax regulation about the treatment of industrial waste. Bart Elmore points out in his history of Coca Cola that the prime US advocate in the founding of recycling programs was the Coca-Cola company, interested in privatizing the cost of disposing of the Company’s plastic packaging.⁵ Northern Ukrainian berries, however, are garbage of a special kind. Efficient native plants such as blueberries (or bilberry), cranberry and mushrooms are excellent gleaners of radioactivity from local soils that were contaminated after the Chernobyl accident which occurred on April 26, 1986. International scientists found in the decades after the accident that no amount of cleaning with chemical agents or terra-engineering cleaned up radioactivity from local environments. Native plants, however, are extremely adept at drawing radioactive cesium and strontium from forest soils and handing them in neat packaging to the humans who desire them. The berries and mushrooms, sold globally as food, should instead be disposed of as nuclear waste. The child-pickers with blue lips are nuclear waste workers. The consumers who ingest the berries are nuclear waste repositories.

Waste studies brings to labor history a suite of conceptual tools to think about precarious and labor, human capital, migration, the material quality of labor in urban and rural infrastructures, and the porosity and interchangeability of workers’ bodies in the toxic environments in which they labor. The expanding volume of waste and people engaged in waste work demands serious attention from labor historians. The authors of this volume approach the topic from an impressive geographic and theoretical range. The aim of this introduction is to explore what conceptual insights the study of waste offers for the study of labor history, and what, in turn, a focus on labor history affords to social science research on waste.

First, what do we mean by waste? Waste is unstable. It is a relational category and an effect of judgements applied to objects, people, and places. It is matter and it is malleable. Depending on

⁴For more, see Kate Brown, *Manual for Survival: A Chernobyl Guide to the Future* (New York, 2019).

⁵Bart Elmore, *Citizen Coke: The Making of Coca-Cola Capitalism* (New York, 2014).

the context and the analytic approach, waste can be viewed as “hazard, object of management, commodity, resource, archive, filth, fetish, risk, disorder, matter out of place, governable object, abject, and actant.”⁶ The pieces in the collection don’t have a single approach – the historical and ethnographic contexts in which they work reveal moments when waste is constituted as a filthy resource, as a risky archive, or a disorderly governable object. The materials they engage with are often domestic garbage – as diverse as that ends up being in distinct contexts, but also include construction debris and industrial pollution. Likewise, the manner and extent that wastes’ material qualities matter for the social and economic processes the authors of these essays discuss is not an a priori assumption, but emerges through accounts of waste work itself. Indeed, the essays reveal the extent to which waste work often involves precisely the labor of converting materials and substances from one category to another, especially from abject hazard to commodified resource. In other cases, it becomes clear how much labor is involved in the apparently technical processes of waste management, governance, and trading, and this labor is on the one hand unevenly distributed across social categories of class, caste, race, gender, and citizenship, and on the other hand central to the production and reproduction of these categories.

Aside from the historical diversity of waste streams themselves and the built environments through which they flow, the ways waste becomes a problem is historically and culturally specific. Alongside dramatic changes in the composition of household rubbish with changing patterns in consumption,⁷ garbage has been posed as a problem of health and hygiene, thrift and domestic virtue, morality and civic duty, and more recently as an environmental concern – each phase in waste’s conceptual transformation elaborating different practices of waste disposal and management. In many contexts it is problematized less in terms of environmental threat, and more in terms of “respect to civilization, religion, and cleanliness.”⁸ As Jamie Furniss observes, “what constitutes the category [of waste], where it comes from, who is responsible for its creation and management, what sort of a problem it poses and how best to deal with it are subject to huge variation across societies and to debate within them.”⁹ As such, we do not seek to define waste at the outset, but to bring together research where the category and the labor surrounding it has come to matter in historically particular ways.

⁶Sarah A. Moore, “Garbage Matters: Concepts in New Geographies of Waste,” *Progress in Human Geography* 36 (2012): 781.

⁷Susan Strasser, *Waste and Want: A Social History of Trash* (New York, 2000).

⁸Jamie Furniss, “What type of problem is waste in Egypt?,” *Social Anthropology* 25 (2017): 303.

⁹*Ibid*, 305.

Surplus Populations and Surplus Materials

Waste has become a common metaphor for theorizing ongoing dislocations of work and citizenship that render people and peoples disposable.¹⁰ Neoliberal capitalism, write Brad Evans and Henry Giroux, has “a strong tendency to view the vast majority of society as dead weight, disposable just like anything that gets hauled off and dumped in a landfill.”¹¹ Disposability has been used to describe and critique contemporary slavery, migrant labor and deportation regimes, and the gendered recruitment and exploitation of maquiladora workers.¹² Zygmunt Bauman’s *Wasted Lives* is an extended treatment of the production and condition of surplus populations framed by waste metaphors: “to be declared redundant means to have been disposed of because of being disposable – just like the empty and non-refundable plastic bottle.”¹³ Alongside this process of excreting people and people into “wageless life,”¹⁴ labor is expended in a more embodied sense as “the body of laborer is used up or wasted at accelerated rates.”¹⁵ Far from novel, in fact, this trope extends to the some of the earliest theorizations of capitalism. Adam Smith observed that barring government intervention, the industrial division of labor would decimate the bodily and intellectual capacities of the vast majority of workers whose “dexterity at his own particular trade seems, in his manner, to be acquired at the expense of his intellectual, social and martial virtues.”¹⁶ Marx famously distinguished between those cast out of work into a reserve army of labor whose existence held down others’ wages, and those cast into the lumpen proletariat, “the social scum, that passively rotting mass thrown off by the lowest layers in the old society.”¹⁷

¹⁰ This use of the term dislocations comes from Harvey and Krohn-Hansen who use it to identify changing geographies of production, the sense of disruption that these new geographies produce, and the new locations from which they demand we theorize labor. See: Penny Harvey and Christian Krohn-Hansen, “Introduction. Dislocating Labour: Anthropological Reconfigurations,” *Journal of the Royal Anthropological Institute* 24 (2018): 10–28.

¹¹ Brad Evans and Henry Giroux, *Disposable Futures: The Seduction of Violence in the Age of Spectacle* (San Francisco, 2015), 45.

¹² Kevin Bales, *Disposable People: New Slavery in the Global Economy* (Berkeley CA, 2004); Grace Chang, *Disposable Domestic: Immigrant Women Workers in the Global Economy* (New York, 2000); Tanya Maria Golash-Boza, *Deported: Immigrant Policing, Disposable Labor, and Global Capitalism* (New York, 2015); Melissa Wright, *Disposable Women and Other Myths of Global Capitalism* (New York, 2006).

¹³ Zygmunt Bauman, *Wasted Lives: Modernity and Its Outcasts* (Malden MA, 2004), 12.

¹⁴ Michael Denning, “Wageless Life,” *New Left Review* 66 (2010): 79–97.

¹⁵ Michelle Yates, “The Human-As-Waste, the Labor Theory of Value and Disposability in Contemporary Capitalism,” *Antipode* 43 (2011): 1680.

¹⁶ Adam Smith, *An Inquiry in to the Nature and Causes of the Wealth of Nations*, 5th edition (London, 1904), Book V, Chap 1, Art ii.

¹⁷ Karl Marx and Friedrich Engles, *The Communist Manifesto* (Chicago, 1888), 27.

What's distinctive about the post-Fordist moment in the global north, however, is the way automation, globalization, and financialization mean that capitalism increasingly threatens to render labor itself as waste. Under neoliberalism, Jonathan Parry writes, workers are recast "as the autonomous, self-directed sovereigns of their own persons. They must be flexible, which means disposable."¹⁸ The valorisation of entrepreneurialism in general and of billionaires in particular means "job-creators" are heralded at the same time that job-holders are increasingly demeaned as dependent and even parasitic. Recast as human capital,¹⁹ rendered precarious,²⁰ and even disavowed as "workers" under the guise of labor forces constituted as self-employed contractors,²¹ workers and wages are being dislodged from the center of definitions of citizenship and political agency.²² The 2008 financial crisis and its aftermath have made apparent that "the capitalist system seems to have no use for an increasing number of people, either as labor, consumers, or rent providers."²³ Under these conditions, waged work has become a "melancholic object of desire,"²⁴ an object of affective attachment predicated on a misrecognition of the stability of a previous era.²⁵

Waste work, however, offers a valuable reminder that disposability is not simply a metaphor. Waste is not merely a way to identify marginalized social status, but an ever-expanding material category filled with the debris of extractive industries, of construction, demolition, and real-estate speculation, of just-in-time production, and of global consumer cultures predicated on petro-products and planned obsolescence. Just as industrial work places generate global flows of garbage, waste streams themselves become work places. By attending to the labor involved in actual processes of disposal, the essays in this collection track the material conditions, social relations, and

¹⁸Jonathan Parry, "Introduction: Precarity, Class and the Neoliberal Subject," in Industrial Labor on the Margins of Capitalism, ed. Chris Hann and Jonathan Parry (New York, 2018), 29.

¹⁹Wendy Brown, Undoing the Demos: Neoliberalism's Stealth Revolution(Brooklyn NY, 2015); Michelle Murphy, The Economization of Life (Durham NC, 2017).

²⁰Guy Standing, The Precariat: The New Dangerous Class (New York: Bloomsbury, 2011). The utility and specificity of precarity as a concept for understanding contemporary work is contested. See: Jan Breman, "A Bogus Concept?," New Left Review 84 (2013): 130–138;and Ronaldo Munck, "The Precariat: A View from the South," Third World Quarterly 34 (2013): 747–762.

²¹Biju Mathew, "The Neoliberal Firm and Nested Subsumption: Labour Process Transformations in the NYC Taxi Industry," Urban Studies52 (2015): 2051–2071.

²² As Kathi Weeks argues, distilling four decades of feminist labor theory and activism, this decentering is in many ways salutary and long overdue. See: Kathi Weeks, The Problem with Work: Feminism, Marxism, Antiwork Politics, and Postwork Imaginaries (Durham NC, 2011).

²³Susana Narotzky, "Rethinking the Concept of Labour," Journal of the Royal Anthropological Institute24 (2018), 37.

²⁴Franco Barchiesi, Precarious Liberation: Workers, the State, and Contested Social Citizenship in Postapartheid South Africa (Albany NY, 2011). See also: Lauren Berlant, Cruel Optimism(Durham NC, 2011).

²⁵ For example, see: Miles Larmer, "Permanent Precarity: Capital and Labour in the Central African Copperbelt," Labor History 58 (2017): 170–184.

cultural logics through which people and things are thrown away. They describe how waste work is embodied, how it shapes a sense of identity and a sense of place, the social relations in which it is embedded and that sustain it. Waste streams have provided new locations to earn a living for surplus populations in contexts of financial crisis and factory closure in Argentina, agrarian dispossession in India, extreme inequality in Brazil, and rapid urbanization in Vietnam.²⁶ Crises have swelled the ranks of waste workers to the extent that in 2007 salvagers constituted an estimated two percent of the world's urban population.²⁷ Waste workers occupied in garbage collection, recycling, and re-purposing reveal that far from being entirely cast off, structurally irrelevant, and absolutely excluded from capitalist production, surplus populations are tenuously, unevenly, integrated into the global economy.

This kind of precarity – informal labor held at arm's distance from capital intensive formal production – Vinay Gidwani argues, has been the modal condition of labor in many parts of the post-colonial world since independence – and is as important to understand as the conditions of work and labor organizing in factories and other traditionally industrial worksites.²⁸ Far from structurally irrelevant, waste workers are illustrative of how surplus populations are subject to “new forms of super-exploitation at the bottom of global commodity chains, BoP (Base of Pyramid) distribution networks, and ICT [Information and Communications Technology]-enabled distance labor.”²⁹ Moreover, their work is not simply a small scale survival strategy, but contributes to national, multi-billion dollar recycling economies. Because waste work that often appears casual and improvisatory is actually deeply embedded in long term patterns of urbanization, statecraft, and population biopolitics, and entangled with transnational networks of commodity trading, it offers a valuable insight into the ways that colonial histories shape contemporary cities, how emergent value chains move along established routes, and contemporary forms of exploitation exacerbate and remake longstanding hierarchies of race, gender, caste and citizenship. Ethnographic and historical

²⁶ See, respectively: Carolina Sternberg, “From ‘Cartoneros’ to ‘Recolectores Urbanos’. The Changing Rhetoric and Urban Waste Management Policies in Neoliberal Buenos Aires,” Geoforum 48 (2013): 187–195; Vinay Gidwani and Rajyashree Reddy, “The Afterlives of ‘Waste’: Notes from India for a Minor History of Capitalist Surplus,” Antipode 43(2011): 1625–1658; Kathleen Millar, “The Precarious Present: Wageless Labor and Disrupted Life in Rio de Janeiro, Brazil,” Cultural Anthropology 29(2014): 32–53; Minh T. N. Nguyen, “Trading in Broken Things: Gendered Performances and Spatial Practices in a Northern Vietnamese Rural-Urban Waste Economy,” American Ethnologist 43 (2016): 116–129.

²⁷Martin Medina, The World's Scavengers: Salvaging for Sustainable Consumption and Production (Lanham MD, 2007).

²⁸Vinay Gidwani, “The Work of Waste: Inside India's Infra-Economy,” Transactions of the Institute of British Geographers 40 (2015), 590.

²⁹Kate Meagher, “Capitalist Redux: The Scramble for Africa's Workers,” Review of African Political Economy Blog (blog),2016: <http://roape.net/2016/11/09/capitalism-redux-workers-transformation-africa/>.

attention to waste work then, allows us to understand the entanglement of surplus populations and surplus materials with more texture, specificity, and attention to the contingencies of place and history than simple comparisons of people to waste would allow.

Conversions and Diversions

Waste is a rapidly growing by product of post-Fordist capitalism and a big business in its own right. This duality is made possible by the socially-constructed nature of both waste and resources,³⁰ and by waste workers at multiple sites and scales who elaborate a complex set of conversions and diversions that capture marginal gains in the global recycling economy.³¹ The streams of materials that flow between these categories amount to a multi-billion dollar trade in scrap metal, PET plastics, e-waste, second-hand clothing, used cars, and dead ships. At its current scale, this trade emerged as a by-product of the containerization of shipping, as it became possible to cheaply fill and ship empty containers returning to China from North America allowing waste traders to arbitrage uneven environmental regulation and booming demand for industrial inputs.³² Just as the logistics revolution has destabilized analytic and spatial distinctions between the production and distribution of commodities by unpacking the factory form and distributing it around the world,³³ the waste trade blurs the boundaries of discrete stages of extraction, manufacturing, distribution, consumption, and disposal. These new supply-chains also upset the linearity of commodity biographies, giving rise to myriad material afterlives. Landfills are remade as mines for new rounds of resource extraction.³⁴ Dead ships are stripped, remade, and given new life as raw materials and as middle class consumer goods.³⁵ Foreclosed homes and abandoned barns become forests, harvested to supply timber for trendy coffee shops and wood-floored lofts.³⁶ Discarded phones, TVs, and computers are being broken down and mined for the valuable materials

³⁰Kirby, Peter Wynn, "Mangling and Promiscuity: Materialities of Waste Conversion in East Asia," *Electronic Journal of Contemporary Japanese Studies* 18 (2018).

³¹ For case studies of global recycling economies see: Catherine Alexander and Joshua Reno, eds., *Economies of Recycling: The Global Transformation of Materials, Values and Social Relations* (London, 2012).

³² This repurposing of the return leg of container shipping routes in fact echoes the original mass commercial application of container logistics that emerged during the Vietnam War, when empty military supply containers returned to the US via Japan to be filled with consumer electronics. See: Marc Levinson, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger* (Princeton NJ, 2006).

³³Deborah Cowen, *The Deadly Life of Logistics: Mapping Violence in Global Trade* (Minneapolis MN, 2014).

³⁴Melanie Samson, "Accumulation by Dispossession and the Informal Economy – Struggles over Knowledge, Being and Waste at a Soweto Garbage Dump," *Environment and Planning D: Society and Space* 33(2015): 813–830.

³⁵Nicky Gregson et al., "Following Things of Rubbish Value: End-of-Life Ships, 'Chock-Chocky' Furniture and the Bangladeshi Middle Class Consumer," *Geoforum* 41 (2010): 846–854.

³⁶ Catherine Fennell, "House Harvests of the Upper Midwest,"(unpublished manuscript, nd).

they contain. The division of labor in this de-manufacturing work largely reproduces the gendered and racial ideologies of industrial manufacturing, fetishizing the “nimble fingers” of manual workers while disavowing the skill and knowledge required to deconstruct sophisticated high-tech products.³⁷

From an environmental justice perspective, these diversions entailed in waste economies are an obvious example of toxic imperialism, in which dangerous substances from the wealthy world are dumped on the poor people and places.³⁸ This environmental justice perspective is the basis of much NGO activism and international efforts to regulate e-waste. Recently, however, geographers have emphasized the need to rethink this story in order to make visible the complex trading networks, new geographies of extraction and production, and forms of waste economies involve.³⁹ While the environmental and embodied effects of waste work can be devastating, waste workers are not tragic victims of trans-national dumping, but are actively involved in shaping waste flows. While the creative re-use of waste materials sustains new kinds of cultural production, generates livelihoods and new strategies for organizing and claiming power, campaigns predicated solely on the injurious aspect of waste work have in fact paved the way for the displacement of informal recyclers in favor of large-scale corporate recyclers.⁴⁰ Waste streams have been described as a manifestation of the commons, with informal recyclers articulating a “right to waste,” demanding access to the discarded materials that form the basis of livelihoods.⁴¹ Like wastelands before them,⁴² these commons are currently undergoing processes of enclosure as more capital intensive forms of recycling take the place of small scale salvagers. The new corporate waste managers demand both exclusive access to the raw materials from which new resources are made and on-demand access to the labor necessary to enact the most valuable waste conversions.

³⁷Rajyashree Reddy, “Producing Abjection: E-Waste Improvement Schemes and Informal Recyclers of Bangalore,” *Geoforum* 62 (2015): 166–174.

³⁸ For an overview of this perspective, see: Max Liboiron, “Waste Colonialism,” *Discard Studies*(blog), November 1, 2018, <https://discardstudies.com/2018/11/01/waste-colonialism/>.

³⁹ See: Josh Lepawsky, “The Changing Geography of Global Trade in Electronic Discards: Time to Rethink the e-Waste Problem,” *The Geographical Journal* 181(2014): 147–159; Peter Wynn Kirby and Anna Lora-Wainwright, “Exporting Harm, Scavenging Value: Transnational Circuits of E-Waste between Japan, China, and Beyond,” *Area* 47 (2015): 40–47; Jamie Furniss, “Alternative Framings of Transnational Waste Flows: Reflections Based on the Egypt-China PET Plastic Trade,” *Area* 47 (2015): 24–30; Nicky Gregson and Mike Crang, “From Waste to Resource: The Trade in Wastes and Global Recycling Economies,” *Annual Review of Environment and Resources* 40 (2015): 151–176.

⁴⁰ Reddy, “Producing Abjection.”

⁴¹ Vinay Gidwani, “Six Theses on Waste, Value, and Commons,” *Social & Cultural Geography* 14 (2013): 773–783; Bharati Chaturvedi and Vinay Gidwani, “The Right to Waste: Informal Sector Recyclers and Struggles for Social Justice in Post-Reform Urban India,” in *India’s New Economic Policy: A Critical Analysis*, ed. Ahmed Waqar, Amitabh Kundu, and Richard Peet (New York, 2011), 125–153.

⁴² Jesse Goldstein, “Terra Economica: Waste and the Production of Enclosed Nature,” *Antipode* 45 (2013): 357–375.

Far from simply being a marginal subsistence activity for individual survival, waste work is the basis of a logistically complex global trade in recyclable commodities. It underpins highly valuable and technologically complex material conversions and geographic diversions that are the basis of new commodity chains. In its entanglement with these capital-intensive flows, waste work reveals the limitations of the concept of informality for understanding contemporary labor conditions. Careful ethnographic attention shows there is only a thin, porous, and manipulable line between “wage workers in formal capitalist production and those in non-wage, self-employed, home-based, piece-rate and contract work.”⁴³ The apparent informality of much of this work is part of an industrial strategy that devolves risks and capital costs onto workers while evading labor regulation, undermining the possibilities of collective organization, and outsourcing responsibility for the environmental harms recycling entails. The patterns of employment, entrepreneurship, and exploitation structured by and structuring waste conversions and diversions are exemplary of the ways a global informal working class has been integrated into the contemporary world economy, through flexible, precarious arrangements that make resources available and circulation possible, while subverting the need to sustain a permanent, stable, and secure working class.

Infrastructure’s Living Labor

While a great deal of waste work is dedicated to the diversion of materials from waste streams and their conversion into resources and goods, waste workers are also involved in the construction and maintenance of waste streams in urban waste. They fill trash trucks domestic rubbish, sort and categorize garbage, sweep streets, clear drains, unclog sewers, manage landfills and more. In post-colonial contexts with high levels of unemployment, governments devolve “infrastructure onto labor,”⁴⁴ using labor-intensive means of collection and disposal both because they are cheaper than investing in high-tech waste management equipment and because they offer a means of incorporating surplus populations into urban governance. This municipal waste work offers an important, often overlooked, insight for understanding urban infrastructures: socio-technical systems are work places. Infrastructure is not just dead labor that takes the form of capital intensive technical systems like electricity grids and road networks.⁴⁵ Infrastructure’s vitality depends

⁴³Gidwani, “Work of Waste,” 590.

⁴⁴Rosalind Fredericks, “Vital Infrastructures of Trash in Dakar,” *Comparative Studies of South Asia, Africa and the Middle East* 34 (2014): 532–548.

⁴⁵Thanks to Josh Reno for this observation, made in conversation during the panel “Living and Dying with Waste Infrastructure” at the 2016 Annual Meeting of the American Anthropological Association.

on the ways it enrolls human bodies and living human labor in the daily work of maintenance and repair.⁴⁶

Infrastructure, waste work shows, is labor. But what counts as labor in a given context is ideologically determined and politically consequential. Waste workers are often excluded from the official category of worker and the attendant rights, benefits, and social recognition that comes with it.⁴⁷ Cities around the world, grappling with growing populations and structurally adjusted budgets, struggle to provide waste management services to their residents. In the place of fully functioning public systems, informal infrastructures have emerged to fill the gaps.⁴⁸ These small-scale, low-cost and wage-less informal waste workers subsidize urban infrastructure. They re-make the world anew, provide vital maintenance and repair work that keeps cities functioning and makes urban life possible. Meanwhile, they are themselves dismissed and displaced as a form of aesthetic pollution.⁴⁹

The organization of, recognition afforded, and value placed on waste work is often predicated on gendered assumptions that naturalize municipal labor as a form of housework. In South Africa, for instance, framing waste work as a form of municipal housekeeping has been a central discursive strategy in privatizing services and casualizing working conditions, passing the burden of cleaning the city to women described as community-based volunteers.⁵⁰ Unpaid, these women are remunerated with skills training, ‘empowerment,’ and vague allusions to future employment. This reframes waste work as an opportunity for self-investment, disavowing labor-relations as the cultivation of human capital. Critical urban infrastructure is positioned as the natural

⁴⁶ While this theme is not central to this issue, waste work in fact extends well beyond human labor, including the work of cart-pulling horses, trash eating pigs and birds, garbage decomposing bacteria, and more. See: Jacob Doherty, “Trash Eaters: Kampala’s Animal Infrastructure,” *Feral Atlas* (blog), forthcoming; Colin Hoag, Filippo Bertoni, and Nils Bubandt, “Wasteland Ecologies: Undomestication and Multispecies Gains on an Anthropocene Dumping Ground - Dimensions,” *Journal of Ethnobiology* 38 (2018): 88–104; Joshua Reno, “Toward a New Theory of Waste: From ‘Matter out of Place’ to Signs of Life,” *Theory, Culture & Society* 31 (2014): 3–27.

⁴⁷ Millar, “Precarious Present.”

⁴⁸ Jo Beall, “Dealing With Dirt and the Disorder of Development: Managing Rubbish in Urban Pakistan,” *Oxford Development Studies* 34 (2006): 81–97; Garth Myers, *Disposable Cities: Garbage, Governance and Sustainable Development in Urban Africa* (Burlington VT, 2005); Christine Furedy, “Garbage: Exploring Non-Conventional Options in Asian Cities,” *Environment and Urbanization* 4 (1992): 42–61; JML Kironde, “The Governance of Waste Management in African Cities,” in *The Challenge of Environmental Management in Urban Areas*, ed. Atkinson et al (Brookfield VT 1999).

⁴⁹ Jacob Doherty, “Filthy Flourishing: Para-Sites, Animal Infrastructures, and the Waste Frontier in Kampala,” *Current Anthropology*, forthcoming; Kaveri Gill, *Of Poverty and Plastic: Scavenging and Scrap Trading in India’s Urban Informal Economy* (New York, 2010).

⁵⁰ Faranak Miraftab, “Neoliberalism and Casualization of Public Sector Services: The Case of Waste Collection Services in Cape Town, South Africa,” *International Journal of Urban and Regional Research* 28 (2004): 874–892.

extension of women's domestic duty to provide a clean home.⁵¹ As with other forms of infrastructural labor, waste work is devalued, like housework, for being merely reproductive.

Waste work is painful and precarious. It wastes workers' bodies and lives. Combining workplace threats including chemical exposures, burns, cuts, respiratory illness, lead poisoning, traffic accidents, landfill collapse, bacterial and fungal infection, parasites, and musco-skeletal damage with common problems of insecure housing, inadequate neighborhood sanitation, minimal access to clean water and health care, as well as crime, violence, debt, and police harassment, waste work contributes to lower life expectancy, higher child morbidity and infant mortality.⁵² Such chronic exposure to slow violence is what resilience often means in practice. In contexts of extreme inequality and insecurity, waste work also has its appeal and a certain level of job security. In the words of *catadores* at Rio de Janeiro's Jardim Gramacho landfill, "the garbage never ends."⁵³ The mountains of garbage provide a kind of guaranteed income, a refuge that sustains precarious lives, and a source of accessible materials that supports flexibility in other areas of life. Compared to over-structured factory work, informal garbage collection and recycling can afford workers autonomy: control over when and where they work, when and to whom they sell materials, work and income on an as-needed basis.

New organizing strategies have emerged in these contexts to demand recognition and combat waste workers' displacement. From Argentina to Ethiopia to India, garbage collectors and recyclers have formed cooperatives and alliances to represent their interests as municipal waste management is reformed, privatized, and outsourced.⁵⁴ There are many obstacles to these labor organizations, including fragmented and decentralized workplaces, an entrepreneurial wage structure, the emergence of exclusionary nationalism within waste economies, and co-optation by

⁵¹ Rosalind Fredericks, *Garbage Citizenship: Vital Infrastructures of Labor in Dakar, Senegal* (Durham NC, 2018), 97-122.

⁵² Eric Binion and Jutta Gutberlet, "The Effects of Handling Solid Waste on the Wellbeing of Informal and Organized Recyclers: A Review of the Literature," *International Journal of Occupational and Environmental Health* 18(2012): 43-52.

⁵³ Millar, "Precarious Present," 39.

⁵⁴ For examples of research on these organizations see: Ana Carolina Ogando, Sally Roever, and Michael Rogan, "Gender and Informal Livelihoods: Coping Strategies and Perceptions of Waste Pickers in Sub-Saharan Africa and Latin America," *International Journal of Sociology and Social Policy* 37 (2017): 435-451; Jutta Gutberlet, "Informal and Cooperative Recycling as a Poverty Eradication Strategy," *Geography Compass* 6 (2012): 19-34; Oscar Fergutz et al, "Developing Urban Waste Management in Brazil with Waste Picker Organizations," *Environment and Planning* 23 (2011): 597-608; Camilla Bjerkli, "Governance on the Ground: A Study of Solid Waste Management in Addis Ababa, Ethiopia," *International Journal of Urban and Regional Research* 37 (2013): 1273-1287; Poornima Chikarmane, "Integrating Waste Pickers into Municipal Solid Waste Management in Pune, India," WIEGO Policy Brief (Urban Policies) (Cambridge MA, 2012); Wael Fahmi and Keith Sutton, "Cairo's Contested Garbage: Sustainable Solid Waste Management and the Zabaleen's Right to the City," *Sustainability* 2 (2010): 1765-1783.

NGOs and development industry efforts to manage poverty. Neoliberal strategies for public private partnership have opened a space in which these associations can claim a role as popular participants in waste management. However, such recognition often amounts to a form of discipline and marginalization as well-established waste collection routines are subject to new forms of spatial and temporal regulation, audit cultures, and competition with trans-national waste contractors. Nonetheless, waste collectors' cooperatives reveal the varieties of environmentalism that exist in the global south. The cooperatives overcome the exclusionary norms of bourgeois environmentalism, with its tension between labor and environmental politics, to articulate a pro-poor vision of social infrastructure and urban management.⁵⁵ Interestingly, workers struggles are often articulated primarily against the state, urban governments in particular, as opposed to employers. In doing so they use waste work as a platform from which to materialize and demand a place for migrants, ethnic and religious minorities, and the urban poor in the neoliberal city.

As the stories that began this introduction illustrate, a complex moral economy shapes the value of waste work. Lionized as volunteering, garbage collecting is discounted as wage-work. Cleaning the pacific garbage patch is entrepreneurial and heroic. Recycling plastics in an urban dumpsite is desperate and abject. Waste workers' campaigns are often struggles for recognition, making apparent the contributions of their work to cities and environments, and the role waste plays in making livelihoods. The importance of such recognition makes evident the centrality of moral and symbolic registers for understanding the conditions of waste work and the objectives of organizing. Waste's materiality also matters. It reveals the ongoing importance of place and substance in a contemporary economy ideologically dominated by stories about digital dematerialization and deterritorialization. While waste work is always embodied and embedded in particular material waste streams, the conditions of waste work are never solely products of 'waste' itself. Rather, as the essays in this collection detail, they emerge from histories of industrialization and de-industrialization, colonization and nation-building, urban abandonment and regeneration.

⁵⁵ On varieties of environmentalism see: Ramachandra Guha, Varieties of Environmentalism: Essays North and South (London, 1997); Amita Baviskar and Raka Ray, eds., Elite and Everyman: The Cultural Politics of the Indian Middle Classes (New York, 2011). On the conflicts between multiple forms of environmentalism and livelihood struggles around waste, see: Patrick Bond and Rehana Dada, "A Death in Durban: Capitalist Patriarchy, Global Warming Gimmickry and Our Responsibility for Rubbish," Agenda 73 (2007): 46–56.

Labor Laid Waste: the Essays

In “Caste and Waste Work in Urban Pakistan,” Waqas Butt asks why caste, as a historical category of social stratification and exclusion, continues to be relevant in the distribution of work in Lahore’s waste economy. In answering that question, he describes the creation of a menial class of workers under British rule, when various groups of landless migrants were grouped in a few classifications within the “scheduled castes.” It fell to these *acchut*, “untouchable” people, to clean up garbage, human waste, animal carcasses, and to work with animal products. Butt follows chronologically the enlargement, urbanization, and formalization of this inheritable occupational caste status as these groups became municipal waste workers in the city of Lahore. Caste was formalized again in post-colonial municipal waste management contracts that drew on the same hereditary relations as the colonial state to keep lower caste people in waste work. Butt argues that waste workers have used these long-standing concepts of status and caste to organize waste work and waste itself in Lahore, a development that enabled them historically to dominate certain trades and attain positions of power in municipal departments of medicine, public health and sanitation. As the volume of waste increased, new kinds of labor emerged to deal with it. These jobs in recycling, junkyards, warehouses, purveying used goods also fell to low-caste and non-caste Christians. The more waste there was to be recycled and cleaned up, the more people were enclosed in heritable status of waste workers. After Partition, these workers have replenished the labor supply of expanding, new municipal institutions and helped developed urban space while reproducing and renewing caste differences that in turn have drawn more people into low status designations and profitable waste work. The caste system, it turns out, is not a fixed category of the past, but is as vibrant and flourishing as Pakistan’s ever-renewing waste streams. Historic notions of caste, not anachronistic belief in bodily pollution and purity, have worked to reorganize urban development spatially and in terms of infrastructure, institutions, and land ownership. Waste emerges not as a signifier of “abjectness and lowliness,” in Butt’s account, but as a means by which low-status urban migrants have earned a living, established properties and communities, and found a place in the city.

In “Trashing Solidarity” Melanie Samson unpacks a labor dispute among informal workers at the Marie Louise landfill in Soweto, South Africa amidst a contraction of business caused by global pressures from the 2008 recession. Triggered by a collapse in the price of recyclables and exacerbated by privatization-oriented municipal waste management reforms, the conflict, between

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South African and Zimbabwean workers, looks, on the face of it, like a classic case of populist xenophobia inciting workers against each other. Moving beyond classic political and ideological explanations, however, Samson argues that identity categories are materially reproduced by the spatial and temporal institutions which informal workers created at the dump in order to gain access to the landfill and ownership of the salvage. She shows how South African workers used the rationality of waste as a specifically national resource to regulate access to salvageable trash, by temporally organizing access to the confines of the landfill. This distribution of access, in turn, consolidate national identities such that a space at the dump came to constitute a place in the nation. These informal institutions reclaimers created, Samson argues, are central to the production and regulation of the social differences and power relations that exploded under the duress of the 2008 global recession. To unify and organize informal workers, Samson concludes, it is vital to understand and transform the specific institutions that shape their work places and, in turn, their social identities and allegiances.

Syantani Chatterjee posits an understanding of precarious labor as an existential state that serves as a rhetorical tactic for survival. In “The Labor of Failure,” Chatterjee describes Shivaji Nagar, a Mumbai neighborhood built on landfill, and wedged between one of Asia’s largest dumps and the city’s biggest slaughterhouse. Most residents live a precarious existence: they have a tenuous hold or no claim to the land on which they live; they perform illegal or unrecognized labor; they have illnesses few doctors claim are legitimate; police and officials suspect the mostly Muslim residents of suspect “attitudes” and criminal or terrorist activity. Chatterjee points out that the failures of Shivaji Nagar are important in order for Mumbai to narrate its story of success. The notoriously trash-ridden, poor neighborhood stands in relief to Mumbai’s developmental progress. As is common with urban wastelands, the neighborhood is at once inside and outside the city. Chatterjee argues that in addition to the salvage work that is the basis of the city’s recycling system, one of the many jobs Shivaji Nagar residents perform is that of narrating their own failure in order to qualify for subsidies, continued residency and release from jail. As she describes this labor, Chatterjee expands the definition of precarity from its focus on post-industrial workers, to an existential condition encompassing health and housing, land use and zoning, as well as encounters with both police and garbage mafias. Waste work reveals that while precarity is widespread, it differs in important ways from place to place.

Marisa Solomon likewise reads the urban landscape through waste to reveal the simultaneous production of inequalities and the movement of materials across highly unequal racialized geographies. In “The Ghetto is a Gold Mine,” flows of waste are entangled with gentrification, understood in her account as a way of reordering space through a specific way of figuring time in the form of “betterment.” Drawing on ethnographic work in Norfolk, Virginia and the Bed-Stuy neighborhood of Brooklyn, the article describes how waste flows from New York to Virginia suture together seemingly disconnected places in a process of combined sanitation and policing policies that seek to remove blighted bodies from gentrified landscapes in the name of improvement. Her reading is guided by her interlocutors in the waste economy, who come to understand and speak back to their own place (and displacement) in the world via waste. Her informants in New York and Virginia understood that in the logic of betterment, cleaner meant whiter. The destruction of old parts of their neighborhood pushed them out, dismantling Black history while turning it into a “lost, exotic other.” Gentrification’s revaluation of land matches, Solomon argues, the transformation of trash into treasure. Here, Solomon draws on theories of racial capitalism to illustrate how beyond familiar environmental justice accounts of landfill siting and the location of toxic industries in devalued black neighborhoods, the processes of land re-valuation are equally productive of waste and displacement. “As the land-value logic of racial capitalism re-positioned Bed-Stuy from left-behind to desirable,” she writes, “Bed-Stuy’s “trash” turned from something proximate to blackness to something displaceable like blackness.”

Transformations of trash to treasure similarly run through Jacob Doherty’s “Capitalizing Community,” which details how a small community-based organization (CBO) in Kampala, Uganda, uses waste to try to plug into the transnational flows of development aid that course through the city. By converting domestic garbage into biomass briquettes, a green energy source that can its promoters hope can take the place of charcoal in Kampala’s kitchens, the CBO hoped to become recognized as a viable local partner for international NGOs working on sustainability and sanitation. Doherty describes the variety of work involved in this process, from the intensive labor of gathering waste and processing it into briquettes, to the more nebulous labor of representing the organization and the community on paper and in practice to potential funders. The neighborhood activists created a space and activity for members of the community to gather, exchange gossip and jokes, and have fun, but as they organized to seek international funding, the community changed. Women were shunted to the background. Members who could not read or formulate grant

proposals and action plans were marginalized. The actions of making heating bricks from garbage became a spectacle performed for an audience of international development officials. Through this process, Doherty argues, community – the lived neighborliness of producing briquettes - became “Community,” – an idealized projection of the development industry – a transition that both undercut the viability of waste work, and served as the only way to truly turn waste to wealth.

Valerie Bonatti and Zsuzsa Gille’s “Changing Registers of Visibility,” also demonstrates how differences in the ways waste work is recognized emerge and what effects they have on the status and experience of this work. They turn our attention to domestic waste work that mediates between the production of waste inside the home and its disposal by public infrastructures. Their focus is an Italian context where an emergent green-consciousness linked to a municipal garbage-collecting crisis made rubbish visible and problematic in new ways. The essay asks what consequences this work and its visibility have for a domestic labor force comprised primarily of women who have migrated to Italy in search of work. The state’s failure in Naples to pick up garbage translated into the racialization of domestic workers as they and their living spaces became associated with overflowing heaps of urban trash. Garbage, normally hidden, became visualized in recycling efforts, which domestic help were employed to sort and throw away. Just as middle-class tourists were applauded for picking trash out of Amsterdam’s canals, Bonatti and Gille found that the host community women volunteering to block illegal dumping, or simply taking out their recycling were valorized as civic minded, while domestic workers and migrants either toiled invisibly in middle class homes or were harassed when visible in the streets. Not all waste work, Bonatti and Gille find, is equal, even when it’s the same work. Understanding these micro-politics of visibility is more and more important as the norms structuring poorly-paid domestic waste work, Bonatti and Gille argue, are becoming increasingly apparent across the work force in the context of austerity and the precarious gig economy. This is an important corrective to liberal environmentalist activism that assumes that because waste is often out of sight-out-of-mind, that making waste visible is imperative for transforming popular consciousness and behavior. Visibility, Bonatti and Gille show, is in fact deeply inflected by the intersectional moral politics of citizenship.

Jennifer Tucker’s “Dangerous Exposures” deepens the issue’s focus on the visuality of waste and waste work. Examining the 19th-century alkali industry in northwestern England, Tucker considers how the diffusion of industrial waste into the bodies of the labor force and the area’s rivers and

atmosphere took shape out of sight of the society that consumed its products in ubiquitous industrial goods like glass, textiles, and soap. Alkali factories produced a great deal of sulphur, 90% of which ended up as waste that floated up from smokestacks and cradled the atmosphere around the town of Widnes. The dust buried neighboring regions in up to twelve feet of alkali waste which killed trees and plants for miles. Chemical workers toiled amid the waste in gaseous form. Breathing in the chemicals wasted the workers' clothes, lungs, and flesh. Tucker shows how the spreading toxins created new spatial and social hierarchies in the English countryside, as managers moved their families safe distances away from the alkali dead zone, while incoming migrants, displaced farmers and Irish, took up the most dangerous jobs known to kill a man by the age of 45. The new spatial hierarchies helped make the toxic waste invisible, or at least deniable. Tucker shows how workers were well aware that their bodies were becoming sulphur waste dumps, a fact they connected to their rotting teeth, wheezing lungs and savaged bodies. In the late 1890s, Victorian reformers finally shed light on the industry. Tucker examines these efforts to analyze the pictorial techniques and forms of representation through which wasted bodies and environments became visible. Chemical workers' bodies she argues, entered ongoing debates about the devastating consequences of industrial labor, posing fundamental and "uncomfortable questions about the ethical regime predicated on manly industrial labor" that unrelentingly laid waste to labor.

Together, the essays in this collection take up equally uncomfortable questions. What forms of labor are taking shape in and around the ever increasing flows of waste around the planet? What does this labor disclose about the changing composition and organization of the global work force? How are the wasting of workers' bodies, lives, and livelihoods entangled with processes of environmental degradation? And, what affordances and obstacles do these waste economies involve for transformative political projects? These will become ever more central questions for labor scholars and activists if we are to challenge and escape the forms of displacement, exploitation, and embodied-environmental injustice that constitute the Anthropocene.