

DISCARD STUDIES

WASTING, SYSTEMS,
AND POWER

Max Liboiron
and Josh Lepawsky



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Acknowledgments

Once upon a time in New York City, Dr. Robin Nagle had a doctoral student named Max Liboiron who was just starting a dissertation and another doctoral student named Samantha MacBride who was just finishing. Each of the three had different approaches to studying systems of waste and waste management, but all were united in a dogged commitment to ethics, accountability, and the implications of their work for those outside of the academy. Indeed, as an anthropologist-in-residence and former sanitation worker (Nagle), the deputy director for recycling in the New York City Department of Sanitation (now director of research and operations at the Bureau of Recycling and Sustainability; MacBride), and an activist (Liboiron), each showed the others the nuances of community accountability in research on waste. Thank you, Robin and Samantha, for those invaluable early lessons as well as your trust and unwavering support of my (Max's) work. You both set my path on discard studies in the best way possible.

It's not often that listening to an academic talk makes you actually sit up, riveted by what you're hearing, but

that's exactly what happened when I (Josh) first learned about Max's work on ocean plastics. Hearing Max speak in New York City in 2012, I knew that it was *essential* for me to follow their work from that point on. I would have been reading, learning from, and citing Max's work no matter where they ended up. What I didn't know—nor could have known at the time—was that I would be so lucky as to later be working *with* Max in the same department and on shared projects such as this book.

This book is based on many years of editing, reading, and writing for the *Discard Studies* blog. Many of the blog posts authored by us (Max and Josh) are rewritten or referenced in this book. It has been a pleasure to show what happens when you sustain a regular conversation for nearly a decade and can weave those choppy but consistent lessons into a logical, longform text like the one you're holding.

The *Discard Studies* blog was founded by Robin Nagle, and I (Max) started blogging for the platform as her graduate student, eventually taking over its maintenance and governance. At the time of this writing, I've produced over 450 posts for the *Discard Studies* blog and edited and managed countless more. As I became a busier and busier professor at Memorial University, I needed help maintaining this labor of love. I had only to look down the hall for first Josh Lepawsky and then Alex Zahara, both colleagues in the Department of Geography at Memorial, who are now coeditors of the blog. We had also been part of the short-lived but intensely

chatty, brainy, and lovely Waste and Science, Technology and Environment (WaSTE) group at the university, along with Arn Keeling, Charles Mather, Dean Bavington, Anne Dance, and Grace Akese. This work at Memorial has been supported by Pam Murphy, Norm Catto, Valarie James, Dominique Lavers, and (as chair) Arn Keeling. Conversations with guest authors, editors, and readers of *Discard Studies* have also been paramount in developing our thinking. Thank you to the hundreds of authors, guest editors, and subscribers that make *Discard Studies* what it is.

We also want to thank each other, odd as that might be in this format. While there might be parts of this book that are “so Josh” and “totally Max,” the ideas and writing have been unified and developed through our overlapping shared labor and commitment to one another as coauthors. It is exciting, even electrifying at times, to think together on a topic each of us has been considering for over a decade. The nuance, the subtlety, and the joy of thinking closely together has been enlivening. At the same time, working *together* has meant that when one of us is teaching overload and doing full time childcare, or when we suddenly become an executive administrator for the entire university for two years, the other can take over. We are confident that the other has our back, has our best interest in mind, will be brilliant without us, and will always check in. Writing together has been a joy.

1

An Introduction to Discard Studies

There is a crumpled cash register receipt in the bottom of the recycling bin. The shine on one side indicates it is thermal paper coated in an industrial chemical called bisphenol A (BPA), which allows the cash register to make marks with heat instead of ink. BPA is one of the most-produced synthetic chemicals in the world, with 7.7 million metric tons produced in 2015 and a projected 10.6 million metric tons by 2022 (Research and Markets 2016). BPA doesn't stay on paper in recycling bins. In addition to escaping from processing plants and distribution through the air (Fu and Kawamura 2010; Bienkowski 2014), the chemical also appears in significant quantities in industrial effluent from paper recycling plants and in recycled paper itself as cash register receipts enter the recycling processes (McMaster 2004). Even more broadly, BPA is on every piece of currency ever tested because the receipts rub against bills in wallets before the receipts are thrown out or recycled. Cash register attendants receive an especially high dose of BPA while they work, and their exposure is increased

when they use hand sanitizers that make skin more permeable to the chemical (Hormann et al. 2014). Furthermore, BPA isn't only in cash registers. It is also used in polycarbonate plastic such as reusable and disposable water bottles, in epoxy resins (like adhesives), and in rotor blade composites in windmills (Research and Markets 2016). The widespread use of BPA and its ability to leach from its host material means that all human bodies carry BPA or its metabolites in blood or urine (Bushnik et al. 2010). BPA is an endocrine disruptor, a class of chemicals that have significant effects at low doses that include cancer, ADHD, asthma, obesity, and diabetes (Bergman et al. 2013). Yet, "notwithstanding the controversy surrounding BPA's toxic effects in food and beverage applications, demand for the chemical is not likely to undergo any drastic change in the foreseeable future" (Research and Markets 2016). These are the relationships—crucial relationships—you can't readily see when you look at the receipt in the bin.

We are familiar with some aspects of waste because we deal with it every day. Yet, as BPA demonstrates, many aspects of waste are entirely hidden from common view, including the wider social, economic, political, cultural, and material systems that shape waste and wasting. Waste always overflows its official meanings, and the technical systems designed to manage and contain it (Moore 2012; Moore et al. 2018). Rather than focusing on material waste and trash as the primary object of study, discard studies looks at these wider systems of

waste and wasting. For example, rather than asking how much people recycle and why they don't recycle more, which would not include the story of BPA, discard studies might ask why recycling is considered good in the first place (Ackerman 1997; Alexander and Reno 2012; Altman 2021; Leonard 2010; Liboiron 2009; MacBride 2012). Instead of an emphasis on the crumpled receipt and its journey through the recycling system, discard studies might ask what allows BPA to be so ubiquitous if it is known to be harmful? How is harm determined? By whom (Murphy 2017a, 2017b; Vogel 2012)? And how do these things change in different regions and over time (Furniss 2017; Strasser 1999)?

This broad and systematic approach to how some materials, practices, regions, and people are valued and devalued, become disposable or dominant, is at the heart of discard studies (figure 1.1). It means that many investigations in discard studies go beyond material waste, though of course the discipline also necessarily includes those materials. Litter, sewage, and trash are all examples of waste, but they aren't *necessarily* the full gamut of concerns to which discard studies attends. Instead of a certain list of objects, discard studies starts with a question: What must be discarded for this or that system to be created and to carry on? To persist, systems must rid themselves of people, places, and things that actually or potentially threaten the continuity of those systems. Wasting is a technique of power, but it's not the only one. For these reasons and others we develop

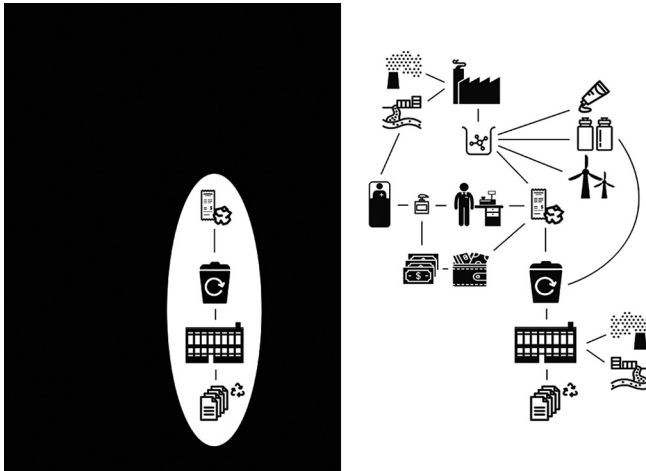


Figure 1.1

The diagram on the left shows the relationships considered when waste is narrowly defined by popular narratives, technical research, and personal experiences. The diagram on the right shows how discard studies approaches waste as a wider set of social, political, and material systems. The righthand side diagram shows part of a circulation network for BPA.

Source: Image by Max Liboiron, 2021.

in the following chapters, we'd like to risk the proposition that discard studies and waste studies can be related and often overlap, but they are not synonymous.

Indeed, as we were writing this book, the COVID-19 pandemic was just beginning in Canada in March 2020, and final edits were completed during Canada's brutal "third wave" in the spring of 2021, where per capita cases in Ontario and Alberta surpassed those in the United States (Blum 2021). We realized that most of the arguments and concepts in this book are well suited

to explaining the trends around how people are understanding and acting in a global pandemic. For instance, it was obvious that people were not autonomous units whose individual behavioral changes, even added up, could scale up to stop a virus. Instead, we saw how health systems, economic systems, political systems, and cultural and social systems interlock and relate to one another in sometimes predictable and sometimes unpredictable ways (e.g., Loreto 2021). We saw how some people were turned away for health care while others had entire teams mobilized to ensure their health (Verghese 2021). As vaccines continue to roll out, we see a surplus of vaccines and no-shows at vaccination clinics in some places and black-market vaccines and oxygen going for thousands of dollars in others. And of course, we saw that some people are more vulnerable and likely to get the virus—the same people who are already disadvantaged in economic, political, judicial, and other social systems.

We realized that the main theories, concepts, and techniques we know from discard studies are able to describe and help interpret instances of value and devaluation, the wasting of some lives and not others (necropolitics), dominant structures and how they are maintained or threatened, and how hierarchical categories are formed and do their work. To that end, throughout this book we consistently talk about waste and wasting in terms of materials like plastic and recyclables, but we also often talk about the pandemic. We believe that using discard studies to study instances

that are discarded but not necessarily trash is a way to extend the utility and breadth of the field beyond waste while simultaneously nuancing and even challenging the field. This is why we understand discard studies to be something more than simply studies of waste.

As more attention is being paid to waste and wasting, valuing and devaluing—by popular media, policy-writers, activists, engineers, and researchers—it becomes even more crucial to contextualize these problems, materialities, and *systems* of discard. We believe that one of our tasks as discard studies researchers is to trouble the assumptions, premises, and popular mythologies of waste so discussions can address wider systems and power dynamics rather than remain mired in technological or moral fixes (Recycle more! Don't use plastic straws!) that deal with symptoms rather than origins of problems (Liboiron 2014a, 2014b; Rittel and Weber 1973). While we know much of waste, pollution, and discarding, we acknowledge that this is also an extremely partial perspective that is based on a particular scale, a specific genre of waste, and a limited region. The field of discard studies is central to thinking through and even challenging the intuitive and familiar aspects of waste and wasting.

Thus this text does not aim to survey the field of discard studies (see Reno 2016 for an excellent review) nor provide an authoritative reference on its key texts or topics (see Zimring and Rathje 2012 for a two-volume encyclopedia on the topic). Instead, we strive to show how some of the theories and methods in discard studies

can be applied to a broad array of cases, many of which are not focused on waste, trash, or pollution, and how discarding, generally defined, is one way to think about (and change!) the ways dominant systems produce and maintain power.

In short, the core commitment of this book is to show the role of waste and wasting as a technique of *power*. Here, “power” refers not to overt domination and coercion (the ability to force people to do things) but to the way that some things seem true, natural, and good and how those meanings are reproduced in particular ways that align with particular interests. In the words of Michel Foucault, “power produces; it produces reality; it produces domains of objects and rituals of truth” (1977, 194) which have real material effects. For instance, our first example below discusses how “waste” in the environmental movement has come to mean “household waste,” which in turn directs environmental action toward changing consumer behaviors. But the vast majority of waste, and thus the most significant locus for action from the perspective of scale, is industrial. It’s not that certain industries consciously hatched a plan in boardrooms to control the meaning of the term “waste” (though this can and does certainly occur: Al Weswasi 2019; Oreskes and Conway 2010; Schlichting 2013) but that myriad actors (including but not limited to people in boardrooms), infrastructures, histories, events, cultural values, and other components of systems interlock to make some things seem more real, more truthful, more likely, and more feasible.

The five chapters of this book build on one another, creating an increasingly nuanced argument as the book progresses. In particular, the main theories we build up include the following: a theory of relationships, articulated at scale (chapter 2); a theory of power, where threats to certain types of relationships are dealt with at various scales (chapter 3); a theory of difference, which is one way to deal with threats to power, articulated through categorization and stereotypes (chapter 4); and, finally, we end with a chapter on “discarding well,” where we think about examples of where institutions and groups make change *through*, rather than despite, wasting and discarding.

But first we start with methods. This first chapter goes over the basic techniques of how we understand solid waste systems that we can’t grasp from our daily experiences and local knowledge (Moore 2012). We show how these methods can work by using them to unpack common myths and truisms about waste and wasting:

1. Waste means municipal solid waste;
2. Humans are naturally wasteful and are trashing the planet;
3. Waste and pollution are externalities of economic systems; and
4. Purity can be achieved through cleanup.

Building on the work of critical discard studies scholars, we show that each of these truisms is based on

assumptions that do not hold up to critical (questioning premises) and empirical (data- and case-study-based) research. Moreover, we argue that these ideas come from somewhere, and when they become truisms then certain definitions of waste, specific notions of responsibility and agency, and particular terms of action are normalized at the expense of others. This is part of what we mean by power (Connell 1987, 107). As we work through each truism, we articulate various methodologies used by discard studies scholars to do their work: defamiliarization, denaturalization, decentering, and depurification. These techniques are not mutually exclusive, and they often work in tandem, as these examples show.

Myth 1: You Know Waste (Defamiliarization)

At the personal, everyday scale, the waste you know is likely household solid waste. Municipal solid waste (MSW) usually includes household waste and recyclables in addition to some commercial waste, construction and demolition waste, and medical waste. But MSW accounts for very little waste produced overall. The vast majority of waste by weight, by volume, and by toxicity is industrial solid waste (ISW).

Some statistics say that 3 percent of all solid waste produced is municipal solid waste and the other 97 percent is industrial solid waste. There is some debate about these numbers: they are based on only two reports by

the US Environmental Protection Agency (EPA) from the 1980s (US EPA 1987, 1988; MacBride 2012); they are self-reported by industry and so cannot be verified (Atlas 2002); they do not take mining into account even though other studies show that mining is the largest portion of industrial-scale waste (Keeling 2012; Statistics Canada 2012); and the numbers change radically when water is removed from the equation because much industrial waste is liquid, some portion of which is treated and discharged into waterways under the Clean Water Act in the United States (MacBride 2012). Even with all of these issues taken into account, ISW is certainly larger than MSW by an order of magnitude, and the 97–3 split holds fairly well (Liboiron 2016).

Let's look at electronic waste (e-waste) as an example (see figure 1.2). There is considerable activism and public attention around reducing the toxic effects of e-waste such as cell phones and laptops. Yet every exported item of discarded consumer e-waste from the United States is half the weight of how much waste acid is produced by a *single* industrial smelter that produces copper for those electronics and other commodities (see figure 1.2 and Lepawsky 2018). E-waste action would have a greater impact if it were directed at industry rather than consumer recycling. This relative scale is true of most forms of waste.

One of the main analytical goals of discard studies is to defamiliarize waste. “Defamiliarization” is a term coined by Viktor Shklovsky in 1917 in regard to literary and poetic devices that interrupted the reader from

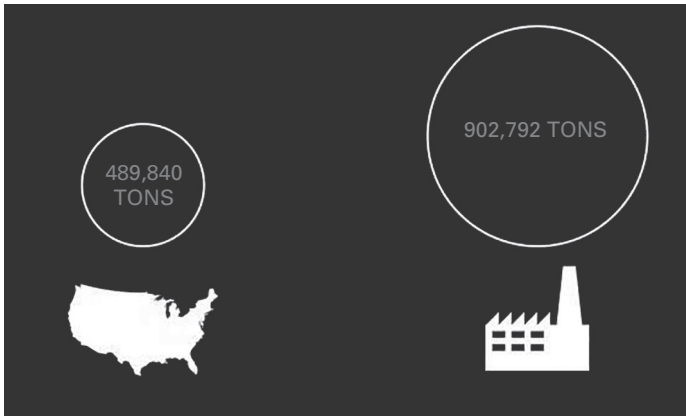


Figure 1.2

Total annual exports of e-waste from the United States compared to waste acid production at a single smelter that creates copper of which the electronics industry is the second largest consumer in the United States. Circles above the icons are proportionate to the tons they represent.

Source: Josh Lepawsky (2018).

using normalized and expected modes of perception, reading, or experiencing art. These techniques were meant to make the familiar strange by stopping the viewer from moving along familiar conceptual routes. This is also the task of discard studies—to interrupt popular, intuitive, expected, and common narratives about waste and wasting by using empirical research and cases from a range of disciplines. This methodology is based on the idea that what is normal is a cultural process, not a natural given state.

Discard studies use various techniques of defamiliarization. One is to question premises upon which arguments are based. For example, Samantha MacBride

(2012) questions the premise “recycling is environmentally friendly” upon which arguments for expanded recycling programs are based. She finds that recycling does not necessarily conserve resources or preserve nature and that it produces pollution (MacBride 2012, 2019; see also Ackerman 1997; Leonard 2010; Rogers 2005). She argues that recycling “has next to zero impact on resource conservation measured in global scales and delivers only weak results in terms of pollution reduction or energy savings” (2012, 8). This statement is well documented in other work that investigates how recycling requires high expenditures of energy (Steinberger, Krausmann, and Eisenmenger 2010), requires considerable virgin materials (McDonough and Braungart, 2002), produces pollutants, and creates products that are “down-cycled” because they are not as robust as their predecessors (McDonough and Braungart 2002, 56–60). Of the 15–30 percent of recyclables that are retrieved from the waste stream, “almost half” are buried or burned due to contamination or market fluctuations that devalue recyclables over virgin materials (Rogers 2005, 176–179).

Recycling infrastructure creates a framework where disposables become naturalized commodities instead of foregrounding waste redesign, reduction, or most importantly, elimination. MacBride argues that a network of social groups, particularly extractive and manufacturing industries within the “recycling movement,” have aligned to support municipal recycling even though it is neither environmentally sustainable nor often profitable

enough to support itself without subsidies or alignment with more profitable waste management systems like landfilling (2012, 16). In this way, powerful industries create what MacBride calls a “diversion” from alternative avenues and concepts, with an emphasis on “business” that keeps civic society working at small-scale, consumer-focused change that does not threaten the status quo, ensuring “that certain matters never come up for a vote, laws are not passed, options are not considered” (12; see also Altman 2021).

Another technique of defamiliarization is to look at the history of how something became normal and even desirable in the first place (e.g., Hawkins 2011). Susan Strasser (1999) investigates how disposability became a practice in the United States, especially after World War II instilled values of frugality and reuse. What moved Americans from one set of norms around wasting to an opposite set of norms? She finds that Americans actually resisted disposability, sometimes violently, and that coordinated education, advertising, and gender- and class-based coaching were required to normalize disposable culture.

Other methods of defamiliarization include tracking down the origin of truisms or famous quantitative figures such as the 97:3 ratio mentioned above (MacBride 2012; Lepawsky 2018), understanding how some methods for knowing about waste and pollution were decided within their historical contexts—such as how to categorize and count racial minorities or municipal waste (Bowker and

Leigh-Star 2000; Melosi 2008; Strasser 1999)—and “zooming out” to consider the wider social, political, and economic systems in what at first appears to be a neutral technical issue, such as how what counts as hazardous waste or potable water is determined (Wynne 1987; Pine and Liboiron 2015; Hamlin 1990).

Discard studies scholars often have to unlearn and debunk their own common knowledge and find concrete methods to defamiliarize their thinking and develop nuanced expertise. Robin Nagle, who coined the term “discard studies,” is anthropologist-in-residence at the New York City Department of Sanitation. She chose the term “discard studies” because it opened up what waste and wasting might include, founding a blog by the name in 2010. Yet even though Nagle has written, taught, and thought extensively and carefully about waste throughout her career, including during her time as a sanitation worker (Nagle 2011; 2013), she once spoke about how people wasted because of feelings of disgust, making wasting a positive activity based in affirmation of things that did not belong (based on Douglas 1966, Kristeva 1982). Yet when challenged with examples of potlatch ceremonies or the sorting practices of waste pickers where wasting was not based on disgust, she realized that she had been reproducing a common narrative about waste and sought to rectify these universal claims. We tell this story because defamiliarization and questioning premises are ongoing activities for experts as well as students.

Myth 2: Humans Are Inherently Wasteful (Methods of Denaturalization)

In one scene from 2016's *The Founder* (Hancock 2016), Ray Kroc, the main character, visits a California takeout restaurant for the first time, in the early 1950s. A woman ahead of Ray assures him the line moves quickly. When it's Ray's turn he glances up at the menu and orders a hamburger, French fries, and Coca Cola. Eight seconds pass, during which Ray pays and then receives his change and order. The speed of the transaction leaves Ray dumbfounded. Can this really be the food he just ordered? The young man behind the counter, acting as both cashier and server, assures Ray it is. But where is all the silverware and plates, Ray wonders aloud, and where should he eat? Smiling in a way that suggests Ray's confusion is not out of place, the man behind the counter helpfully instructs Ray about what to do: "You just eat it straight out of the wrapper and then you throw it all out." There is a pause. Ray is still not entirely sure how to proceed. The man nods encouragingly. Ray finds a place on a nearby park bench and glances around looking for further cues for proper procedure from the crowd enjoying their food. It's a poignant and slightly comedic moment since Ray, played by Michael Keaton, would go on to found the McDonald's fast-food franchise.

The scene shows a moment when a certain way of consuming and wasting is unfamiliar, even strange. Disposability is not an innate human practice even though

throwing disposables out has become so familiar as to seem natural. Yet it has to be taught, and the infrastructure for it must be provided (Liboiron 2013; Reno 2015; Strasser 1999). The tragicomic elements of Ray's confusion work because now, after sixty some years of practice, eating fast food is so familiar to so many that it has *become* unremarkable: the denaturalization is funny. It's also a core technique for discard studies. *How* did certain ideas about waste become so common as to seem natural, and how did discarding work before this naturalization? What are the histories of choices, interests, and efforts of what we now take for granted rather than assuming that the present is the inevitable product of natural development?

To emphasize the novelty of a broadscale industrial shift toward disposability it is helpful to consider that barely more than twenty years before the scene fictionalized in *The Founder*, the notion of planned obsolescence began to circulate in US public discourse. In 1932, a New York real estate developer named Bernard London self-published a series of pamphlets advocating for "planned obsolescence" to solve the Great Depression (London 1932; Packard 1960; Slade 2006). In London's scheme, it would be the role of government to "assign a lease of life to shoes and homes and machines . . . to all products of manufacture, mining and agriculture [and] after the allotted time had expired, these things would be legally 'dead' [and] destroyed" (London 1932, 2).

Whether London coined the term “planned obsolescence” or borrowed it from conversations of the day is unclear; what is clear is that it was a novel idea of the era. It would take decades before planned obsolescence became a mainstream industry strategy to enhance revenue. Not until 1956 could Lloyd Stouffer, editor of Modern Packaging Inc., declare, “The future of plastics is in the trash can” (Stouffer 1963, 1), making a call for disposable packaging that has become the norm today. Yet, then as now, planned obsolescence was and continues to be resisted, including from within industry itself (Slade 2006, 164).

Another example of the naturalization of disposability is how the toilet paper shortages in the early days of the COVID-19 pandemic were understood. Hoarding and panic-buying toilet paper and other goods is a common media headline during disaster preparation. It’s the “natural” way to think about commodity shortages. But some journalists denaturalized that truism during COVID-19. Rather than aberrant human behavior leading to a rush on toilet paper, they found that there was instead an issue with supply chains:

The toilet paper industry is split into two, largely separate markets: commercial and consumer. The pandemic has shifted the lion’s share of demand to the latter. People actually do need to buy significantly more toilet paper during the pandemic—not because they’re making more trips to the bathroom, but because they’re making more of them at home. With

some 75% of the U.S. population under stay-at-home orders, Americans are no longer using the restrooms at their workplace, in schools, at restaurants, at hotels, or in airports. (Oremus 2020)

This shift in where people went to the bathroom during lockdown affected consumer toilet paper shortages in the United States, Canada, Hong Kong, and the United Kingdom, among other locations. While there were certainly anecdotal cases of hoarding (e.g., ABC7 Los Angeles, “Beverly Hills Police Department Finds 192 Rolls of Toilet Paper in Stolen Vehicle,” April 2, 2020), it cannot account for the scale of this international trend.

We can denaturalize the toilet paper story even more and ask why would people stand in line for hours to get toilet paper during an international shortage? What makes toilet paper seem like a need? While toilet paper was invented in the 1300s, it wasn’t until the 1850s that toilet paper as we know it today was created and marketed (Blumer 2013). It was an exclusive product for the rich until a series of fear-based advertisements by the Scott Paper Company advised that people would have medical issues in their unmentionable areas if they didn’t use Scott’s special paper (Blumer 2013, 99; 99% Invisible 2020). Today, toilet paper has become unextraordinary and expected in many places, but not all places (more on decentering below).

These brief examples illustrate a key lesson of discard studies: waste practices, including disposability and hoarding, are specific to a time, place, culture, and

system rather than inherent, “natural” human characteristics. People have to be taught to practice and accept disposability as well as other waste practices. These practices hinge on the provision of certain kinds of infrastructure—such as packaging cheap enough that it can be tossed away, trash containers in public places that are emptied by municipal workers, or indoor toilets that lead to public sewers or septic tanks designed to handle toilet paper—while other kinds of infrastructure, such as metal cutlery and bidets, are removed or never created in the first place (Liboiron 2014a).

Denaturalization is a core strategy within discard studies. When contextual, place-based, situated, and historically specific moments become naturalized and are assumed to be so normal that they are not thought about, denaturalization unearths how they initially became normal and thus can be changed. For example, the commonsense notion that there is a universal “human” who is “naturally” wasteful only stands up if evidence from the historical record is ignored. Instead of axiomatically accepting the notion that humans are inherently wasteful, discard studies turns disposability into questions such as the following: Under what conditions does disposability make sense (Hawkins 2011)? Who is or are the human(s) in mind when “human nature” is invoked to explain wastefulness? In short: Who is the “we” (Chakrabarty 2009; Hecht 2018) of “human nature,” who does it exclude, and who does it make normal? How do answers to these questions

change what “solutions” to waste look like? These are the core questions of chapter 4.

Myth 3: Waste and Pollution Are Externalities (Methods of Decentering)

In July 2017, China filed an official notification with the World Trade Organization (WTO) to “forbid the import of 4 classes [and] 24 kinds of solid wastes” including plastics (Ministry of Environmental Protection of the People’s Republic of China 2017). Within weeks, recycling systems in Canada, Europe, the United States, and elsewhere were in disarray with nowhere to ship their recyclable discards. The continual, if convoluted, reverse supply network linking household sorting bins in some parts of the world to industrial-scale waste and manufacturing infrastructure elsewhere rapidly underwent shutdown and reorganization. By the end of the year, recycling systems in Canada, Europe, and the United States resorted to stockpiling, landfilling, and incineration while simultaneously searching for alternate buyers to handle the flows of plastic recyclables they could no longer hold (Gregson and Crang 2018). East and Southeast Asia became important alternate destinations for the materials China used to buy (Reed, Hook, and Blood 2018; Pyzyk 2018). Within a year at least one of these markets, Vietnam, had to temporarily

halt imports of these plastics as volumes overwhelmed port capacity (Musulin 2018).

China's 2017 announcement and the ensuing disruption of the global recycling market illustrates how waste is made through relations between centers and peripheries and how the coherence of the center depends on the periphery. Part of what defines waste is its proper place in industrial systems of production. It "clearly belongs in a defined place, a rubbish heap of one kind or another" (Douglas 1966, 161), or in recycling bins, transfer stations, shipping containers, industrial holding ponds, or steel barrels. Each of these receptacles enables the system at the center to carry on, to hold, by leaving that system untroubled by threats to its continuity. In short, most solid waste systems rely on an "away" to keep the center clean—that "away" is what creates peripheries *and* the center. Yet there are always people who live and work in those peripheries (Akese 2019; Davies 2019; Hoover 2017; Reno 2016; Voyles 2015). They, and their regions, become disposable, also called "sacrifice zones" (Lerner 2012).

Recycling is able to be understood as a "green" and morally good practice in Canada, Europe, and the United States because of environmental sinks (places to store waste) in China. Without China, the coherence or "centeredness" of these recycling *systems* comes into question (Liboiron 2018). The center may no longer continue to hold unless a way to manage waste can be

found by which the system's coherence can be reestablished and its continuity reasserted.

One main concept in discard studies is "externality," a term that originates in economics. Externalities are costs or benefits (positive or negative) that accrue to parties not among the original participants in a transaction. For example, getting a vaccination can protect you personally from disease; a positive externality is that it can also offer a quantum of immunity to the wider community you live in. Waste and pollution, however, are always treated as negative externalities, costs foisted onto people and places by the economic actions of others.

In economics, both positive and negative externalities are treated as examples of market failure. Externalities are the result of pricing mechanisms that do not properly capture value, resulting in "free rides" in the case of positive externalities and "uncompensated burdens" in the case of negative ones (Porter 2002, 6). For waste, this means that trash and pollution cause negative externalities on people or groups of people that did not consent to these externalities, and this harm was not properly accounted for in the original calculations of benefits and costs. In both cases, externalities create a center that anticipates and accounts for value, and peripheries where externalities occur. Crucially, these insides and outsides are created through accounting and do not preexist their conceptualization.

Externalities treat the market failures they describe as anomalies or outliers in an otherwise well-ordered world.

Yet waste and pollution are not unfortunate accidental by-products of industrial systems of production but are rather characteristic of all industrial systems, regardless of whether they are capitalist or socialist (Gille 2007; Ofrias 2017; Kao 2013). Such systems of production inherently generate waste and pollution not as outliers or anomalies but as norms. For example, the consistent siting of polluting infrastructure in low-income neighborhoods or on Indigenous land isn't an accident but a strategy (Bullard 2000; Thornbeke 2016). In the early days of the COVID-19 pandemic, particularly in the United States, there was a recurring line that "only x% of people will die" of the virus, and these people, almost always the elderly and disabled, were considered acceptable losses (Ashkenazi and Rapaport 2020; Chait 2020; Pesce 2020; Shammass and Kornfield 2020). Regardless of actual numbers of deaths or whether pollution infrastructure is deemed "safe," these common refrains show which areas and people become normal "sacrifice zones" or peripheries for a more powerful center (Davies 2019; Hoover 2017; Lerner 2012; Stamatopoulou-Robbins 2020). In short, externalities and their peripheries are normal and needed because they are what let the centers hold. We return to this question of insides and outsides, centers and peripheries, in chapter 3.

Discard studies is dedicated to decentering systems that rely on externalization or sacrifice zones and interrogating the power to create centers and peripheries in the first place. Discard studies asks, what kind of

center(s) do wasting and pollution shore up? What, who, and where bear the burden of externalization and being made into peripheries? What are “the uneven relations and infrastructure that shape what forms of life are supported to persist, thrive, and alter, and what forms of life are destroyed, injured, and constrained” (Murphy 2017a, 141–142)?

Questions such as these lead discard studies scholars to examine a much more expansive set of issues than just how to better manage waste and wasting, though these questions are also included. Discard studies methodology brings us to questions of power, inequality, equity, and justice. As such, discard studies is inherently normative: that is, concerned with doing good by explaining and intervening into questions of justice. As biologist Mary O’Brien (1993) argues, normativity is built directly into all research. She writes about how doing research necessarily asks particular questions and not others, in certain ways and not others. Each is a choice that aligns the research with some values, norms, and parties over others. Questions, then, are unavoidably value-laden in that they prioritize some ways of investigating the world and not others.

Discard studies queries what is understood as right and good and how those ideas hold, at whose expense, and for what center(s) (Mol 2002). When a mining company is permitted to create mine tailings in the north of Canada (Keeling and Sandlos 2015), from a discard studies perspective, the center(s) that this allows to

hold is settler colonialism, capitalism, and industrialism rather than prompting a question of better mining waste management. The center, as we have been calling it, is not monolithic but “the sum effect of the diversity of interlocking oppressive social relations that constitute it” (Coulthard 2014, 15). Discard studies considers these both in aggregate and individually for a picture of what waste and wasting accomplish and how this might be made different.

Myth 4: Purity Isn’t Cleanup, Dirt Isn’t Waste (Depurifying)

Theories of purity are a mainstay of discard studies, especially given the importance of Mary Douglas’s anthropological work *Purity and Danger* (1966) to the field (more on this in chapter 3). Douglas argues that “dirt” is “matter out of place” (36); one of her work’s central claims is that “our ideas of dirt [and purity practices] express symbolic systems and that the difference between pollution behaviour in one part of the world and another is only a matter of detail” (36). Many other theories build on this work by understanding discard practices as removing that which disgusts us, reestablishing our notions of order, and offering a material expression of separation between what we think is good and valuable versus wrong and worthless (e.g., Hawkins 2006; Shotwell 2016; Thompson 2017).

Michael Thompson's *Rubbish Theory* (2017, 123) builds on theories that treat particular wastes similarly regardless of their material or social origins to argue that objects move between categories of worth and worthlessness, durability and consumption, "quite common[ly]." Such movement, he argues, "occurs whenever rubbish is got rid of, for example, refuse collection and incineration, sewage treatment, the reinstatement of waste land, the clearance of slums, the deportation of undesirable aliens and, at its most extreme, the gassing of Jews and Gypsies in Nazi Germany" (123). For Thompson and Douglas, a list of discards that includes both recycling and genocide makes sense when both are seen as manifestations of morality expressed through the material logistics of segregation, discreteness, categorization, and "getting rid" of undesirables.

But we argue there are few situations where recycling and genocide are the same kind of thing. Thompson and many others present a continuum of discards within a rubric of wasting-as-social-phenomena, where specific geographies, histories, and materialities are "only a matter of 'detail'" (Douglas 1966, 36). We disagree. Because of similarities between sorting and purifying, the latter is often used as a metaphor for the former. At different points in history and in various places, Indigenous peoples, Jews, women, immigrants, 2SLGBTQIA+ people, people with disabilities, and political prisoners are killable, not just peripheral (Mbembe 2003; Bauman 2004; Butler 2011; Raffles 2017). Throughout this book

we argue that these details are *fundamental*, not incidental, to different systems and effects of waste (Furniss 2017). Genocide and sorting recycling not only are different in terms of social, economic, material, spiritual, and political systems but also they are different in terms of power, oppression, and justice. We will touch on the linked issues of justice and materiality here, and chapter 3 is entirely dedicated to concepts of purity and universalism upon which Douglas's work depends.

In short, cleaning up and purification are not the same thing. Our theories of waste and wasting should not fail to distinguish between blue bins and concentration camps. Materials recycling facilities (MRFs), factories, and concentration camps appear to have strikingly similar material and logistical practices of categorization, sorting, and discarding, but that doesn't make recycling genocidal and Nazism environmentally sound. Because discard studies is inherently normative—making arguments and frameworks for examining, understanding, and practicing what is good and right—it is crucial to differentiate between the ethics of cleanup, which are based in separation, and those of purity, which are based in annihilation. These, we believe, are the stakes of discard studies research (for similar arguments about the crucial importance of problem definition in research, see Rittel and Webber 1973; Tuck and Yang 2014).

The difference between cleaning up and purifying is crucial. Today—literally today, as we write this—medical personnel are making decisions about who to save and

who to leave to die as COVID-19 victims overwhelm hospital resources. The people left to die in favor of helping others are consistently the same ones who are externalized in multiple systems: Black people, people with disabilities, people who lack economic advantages, and older people (Hauen 2020; Kam 2020; Mykitiuk and Lemmens 2020; Rosenbaum 2020; Wikler 2020). These decisions are not necessarily made by people with poor morals but rather by medical practitioners whose job is to do no harm and to help people. Achille Mbembe calls this “necropolitics,” “the power and capacity to dictate who is able to live and who must die” (2019; Verghese 2021). This isn’t an individual power but a systemic issue where some decisions are more likely than others regardless of individual variation. It is why we focus on *systems* of waste, discarding, and devaluing rather than *instances* because it is *systems* that allow some things to make sense, some things to seem valuable or worth saving, and some things to seem natural or inevitable instead of others. Yet, unlike Thompson and Douglas, we are not advocating for a master or universal theory, but rather for thinking about systems in terms of their contexts, materialities, politics, and differential effects.

Conclusions and Points of Departure

Discard studies “stays with the trouble” of difficult questions and situations, as Donna Haraway (2016) would

say, not only because solutionism tends to address symptoms of systems rather than the systems themselves but also because the trouble is already here. Mere gains in efficient use of matter and energy cannot mitigate the tonnage, toxicity, heterogeneity, and harms of contemporary waste (MacBride 2012). In fact, efficiency tends to enhance rather than alleviate demand for resources since gains in efficiency cheapen the production of end commodities (what ecological economists call the “rebound effect” or the “Jevons’ Paradox”; see Alcott 2005; MacBride 2019; Shove 2018, 2020). Nor does efficiency lead to justice. In fact, efficiency can use and discard labor at grander scales than other modes of production (Marx 2004; Alcott 2005).

This is just one example of why discard studies needs to look beyond technical tweaking or reform of existing systems and forward to interlocking systems themselves (in the next chapter we’ll consider how to look at and think about large-scale systems that can be hard to discern). An example of looking at multiple systems at multiple scales is Sophia Stamatopoulou-Robbins’s extensive ethnography on waste practices in Palestine:

When a Jenin resident smells refuse or stops in the street because her shoe strap breaks days after she purchased the shoes, an array of possible actors is available for blame. She may choose to blame street sweepers, UNRWA [the United Nations Relief and Works Agency for Palestine Refugees in the Near East that provides basic infrastructure like trash collection], the American government that withdrew

its funding from UNRWA, the political party in charge of the municipality, the Authority [the interim self-government body that exercises partial civil control over the Gaza Strip], herself for walking that route or buying those shoes, China (where the shoes may have been made), the shopkeeper who sold them to her, or “the situation” (*al-wadi'*) [the occupation]. She might blame the individualist ethos (*anania*) many see as having replaced the mass, cross-class solidarity that characterized life during the intifada between 1987 and 1993, an ethos many remember as having inspired them to collectively keep streets clean. (2019, 7–8)

These are just some of the actors, forces, and infrastructures in waste systems that are discernable to someone walking down the street. There are many more besides. As researchers, we also must account for permanent toxicity, gross inequalities and power differentials, the necessity of dealing with multiple systems simultaneously, a need to offer alternative practices as much as critique, and humble narratives that leave room for open and diverse futures (Schendler and Jones 2018; Rittel and Webber 1973).

If discards are necessary for systems to hold together, then differently organized systems are needed that fundamentally *alter* discards rather than eliminate them. The *elimination* of discards, we argue, would be wishful thinking indebted to the myth of purity. Altering discarding means posing the question, “How do you discard *well given specific contexts, materialities, and power relations?*,” a question we take up explicitly in the final

chapter (Liboiron 2015c; D'Alisa, Demaria, and Kallis 2014, 86–89). Such a question has no absolute or universal answer. Rather than pursue absolutes or universals, something we critique in chapter 4, we offer the question as an orienting device, a departure point, and an apparatus to assist in diverse groups maneuvering problems of waste and wasting.

We do not seek to define the field of discard studies, nor provide an authoritative text on the field or similar work of introduction or synthesis. Rather, this book is an effort to provide readers with examples and skills to add nuance and intention to how we might wade into and alter systems of discard, whether readers are just starting out or direct some of the largest sanitation systems in the world.

We begin to do this in the next chapter by discussing the partiality of knowledge and by offering a theory of scale. “The Scales of Waste: A Theory of Relationality” dives deeper into the myth that most waste is municipal solid waste produced by consumers. The chapter demonstrates the systemic nature of waste by considering waste at multiple scales as well as the various relationships that matter to the question of what waste is, how much there is, and where it is. In short, we discuss scale as a way to think about systems and relationships.

The third chapter, “Insides and Outsides: A Theory of Power,” returns to the idea of centers and peripheries and how they are created. The chapter starts by discussing categorization in social media content moderation: what gets

deleted before it ever gets to your feed and what is allowed to go through. Starting from the premise that dominant systems must find ways to discard people, places, and things that threaten their ordering, we use the case study of content moderation to talk about systems of power. We then move into theoretical work by Mary Douglas in *Purity and Danger* to think about some of the techniques used to keep that status quo safe from threats.

Chapter 4, “There’s No Such Thing as We: A Theory of Difference,” uses theories of difference to show how resistance to racism and fights for justice can inadvertently reproduce the dominant systems that make some groups of people disposable and others secure. It reinforces the idea developed in chapter 3 that disposability is systemic and relates to threats to powerful centers. Using the case study of “inclusive” efforts to broaden the Black Lives Matter movement, it shows that universalism, stereotypes, and inclusion all have politics of discard and even purification. The chapter ends by outlining some intellectual strategies discard studies has to offer to those working to make change.

The final chapter discusses wasting well. It uses earlier concepts of categorization, sorting, and ranking to talk about theories of change in dominant systems that make some things seem obviously valuable or worthless and others natural and neutral. We start by comparing two city’s strategies for getting rid of snow on sidewalks. One city disposes of snow in a way that intentionally addresses gender inequity, while the other makes choices

that knowingly risk pedestrian safety. We extend the concept of wasting well to concepts of refusal and how refusal can be a form of affirmation, of creation. Rather than a utopian vision of a world without discards, we discuss incommensurability and how there will always be conflicting ideas of waste and discarding, value and devaluation. We end the book with a summary of the key techniques, methods, and propositions for a justice-oriented discard studies that keeps power in view.

Our goal as authors is to show that systems and power are at the heart of wasting, whether plastic straws or Black lives, and to offer frameworks to identify and describe these modes of power, critically think about them to question their premises, and intervene to make change. Put another way, we argue that discard studies is about broad systems that waste, where “systems” refers to cultural and social norms, economies and modes of de/valuation, knowledge systems and how some things make sense, even are common sense, while alternatives are hard to imagine, and of course, material infrastructure. These elements of systems are inextricable from one another, difficult yet crucial to study.

References

Based on the Summers Gender Balance Assessment Tool (Summers 2020), this reference list is approximately 33.5 percent women authored. From 2018 to 2019, women were 41 percent of academic teaching staff at Canadian universities and roughly half the global population. Citations and references are another place of reproductive justice and discard in research: they act as “*screening techniques*: how certain bodies take up spaces by screening out the existence of others,” making it seem as though research is conducted mainly by men, which becomes naturalized (Ahmed 2013; see also Anderson and Christen 2019; Mott and Cockayne 2017; Stefancic and Delgado 1995). A reference list is an excellent place to put discard studies theory into discard studies research practices (see chapter 5). Indeed, in early copy edits of this book by MIT Press, all Tweets we cited were removed from the reference list. Not coincidentally, all were sources of public intellectualism by Black women. Even here, on the often unread back pages of a manuscript about power and discard, these systems are at work.

99% Invisible. 2015. “The Post-Billiards Age.” Podcast, May 12, 2015. <https://99percentinvisible.org/episode/the-post-billiards-age/>.

99% Invisible. 2020. "Wipe Out." Podcast, April 7, 2020. <https://99percentinvisible.org/episode/wipe-out/>.

Abrams, Thomas, and David Abbott. 2020. "Disability, Deadly Discourse, and Collectivity amid Coronavirus (COVID-19)." *Scandinavian Journal of Disability Research* 22 (1): 168–174. <http://doi.org/10.16993/sjdr.732>.

Ackerman, Frank. 1997. *Why Do We Recycle? Markets, Values, and Public Policy*. Washington, DC: Island Press.

AEA Technology Environment and Associates. 2005. "Proposed Plastic Bag Levy—Extended Impact Assessment." Environment Group Research Report commissioned by the Waste Strategy Team in the Environment and Rural Affairs Department at the Scottish Executive. August 29, 2005. <https://www.webarchive.org.uk/wayback/archive/20180516073550/http://www.gov.scot/Publications/2005/08/1993102/31039>.

Agard-Jones, Vanessa. 2013. "Bodies in the System." *Small Axe: A Caribbean Journal of Criticism* 17, no. 3 (November): 182–192. <https://doi.org/10.1215/07990537-2378991>.

Agner, Eric. 2020. "Epistemic Humility—Knowing Your Limits in a Pandemic." *Behavioral Scientist* (blog). April 13, 2020. <https://behavioralscientist.org/epistemic-humility-coronavirus-knowing-your-limits-in-a-pandemic/>.

Ahmed, Sara. 2013. "Making Feminist Points." *Feministkilljoys* (blog). September 11, 2013. <https://feministkilljoys.com/2013/09/11/making-feminist-points/>.

Akese, Grace Abena. 2019. "Electronic Waste (e-Waste) Science and Advocacy at Agbogbloshie: The Making and Effects of 'The World's Largest e-Waste Dump.'" Doctoral dissertation, Memorial University of Newfoundland.

Alexander, Catherine, and Joshua Reno, eds. 2012. *Economies of Recycling: The Global Transformation of Materials, Values, and Social Relations*. London: Zed Books.

Al Weswasi, Enes. 2019. "Spending Blood for Oil in Nigeria: A Frame Analysis of Shell's Neutralisation of Acts That Led to Corporate-Initiated State Crime." *Nordisk Tidsskrift for Kriminalvidenskab* 106, no. 3 (December): 280–296. <https://doi.org/10.7146/ntfk.v106i3.124794>.

Albeck-Ripka, Livia. 2018. "Your Recycling Gets Recycled, Right? Maybe, or Maybe Not." *New York Times*, May 29, 2018. <https://www.nytimes.com/2018/05/29/climate/recycling-landfills-plastic-papers.html>.

Alcott, Blake. 2005. "Jevons' Paradox." *Ecological Economics* 54, no. 1 (July): 9–21. <https://doi.org/10.1016/j.ecolecon.2005.03.020>.

Aljazeera. 2020. "World's Top Glove Maker Says Malaysia Worker Died from COVID-19." December 14, 2020. <https://www.aljazeera.com/news/2020/12/14/worlds-top-glove-maker-says-malaysia-worker-died-from-covid-19>.

Altman, Rebecca. 2021. "On Wishcycling." *Discard Studies* (blog). February 15, 2021. <https://discardstudies.com/2021/02/15/on-wishcycling/>.

Anand, Nikhil. 2015. "Leaky States: Water Audits, Ignorance, and the Politics of Infrastructure." *Public Culture* 27, no. 2 (May): 305–330. <https://doi.org/10.1215/08992363-2841880>.

Anderson, Jane, and Kimberly Christen. 2019. "Decolonizing Attribution: Traditions of Exclusion." *Journal of Radical Librarianship* 5 (June): 113–152.

Andrews, Erin E., Kara B. Ayers, Kathleen S. Brown, Dana S. Dunn, and Carrie R. Pilarski. 2020. "No Body Is Expendable: Medical Rationing and Disability Justice during the COVID-19 Pandemic." *American Psychologist* 76, no. 3 (April): 451–461. <https://doi.org/10.1037/amp0000709>.

Arefin, Mohammed Rafi. 2019. "Infrastructural Discontent in the Sanitary City: Waste, Revolt, and Repression in Cairo."

Antipode 51, no. 4 (September): 1057–1078. <https://doi.org/10.1111/anti.12562>.

Ashkenazi, Isaac, and Carmit Rapaport. 2020. “Saving Lives Versus Saving Dollars: The Acceptable Loss for Coronavirus Disease 2019*.” *Critical Care Medicine* 48 (8): 1243–1244. <https://doi.org/10.1097/CCM.0000000000004452>.

Atlas, Mark. 2002. “Few and Far between? An Environmental Equity Analysis of the Geographic Distribution of Hazardous Waste Generation.” *Social Science Quarterly* 83 (1): 365–378. <https://doi.org/10.1111/1540-6237.00089>.

Baensch-Baltruschat, Beate, Birgit Kocher, Christian Kochleus, Friederike Stock, and Georg Reifferscheid. 2021. “Tyre and Road Wear Particles—A Calculation of Generation, Transport and Release to Water and Soil with Special Regard to German Roads.” *Science of the Total Environment* 752, no. 15 (January). <https://doi.org/10.1016/j.scitotenv.2020.141939>

Bakar, Faima. 2018. “The Straw Ban Might Cut Down Plastic Waste but It’s Not Fair on Disabled People.” *Metro* (UK), July 19, 2018. <https://metro.co.uk/2018/07/19/the-straw-ban-might-cut-down-plastic-waste-but-its-not-fair-on-disabled-people-7732506/?ito=cbshare>.

Baker, Gregory A., Leslie C. Gray, Michael J. Harwood, Travis J. Osland, and Jean Baptiste C. Tooley. 2019. “On-Farm Food Loss in Northern and Central California: Results of Field Survey Measurements.” *Resources, Conservation and Recycling* 149 (October): 541–549. <https://doi.org/10.1016/j.resconrec.2019.03.022>.

Balayannis, Angeliki. 2019. Routine Exposures: Reimagining the Visual Politics of Hazardous Sites.” *GeoHumanities* 5, no. 2 (July): 572–590. <https://doi.org/10.1080/2373566X.2019.1624189>.

Balayannis, Angeliki. 2020. "Toxic Sights: The Spectacle of Hazardous Waste Removal." *Environment and Planning D: Society and Space* 38 (4): 772–790. <https://doi.org/10.1177/0263775819900197>.

Baum, Kathryn Blaze. 2020. "Ottawa Set to Declare Plastics as Toxic Substance." *Globe and Mail*, March 11, 2020. <https://www.theglobeandmail.com/canada/article-ottawa-set-to-declare-plastics-as-toxic-substance/>.

Bauman, Zygmunt. 2004. *Wasted Lives: Modernity and Its Outcasts*. Oxford: Polity.

Beauvoir, Simone de. (1949) 1989. *The Second Sex*. Reprint, New York: Vintage Books.

Beckett, Caitlynn. 2020. "Beyond Remediation: Containing, Confronting and Caring for the Giant Mine Monster." *Environment and Planning E: Nature and Space*. <https://doi.org/10.1177/2514848620954361>.

Beech, Hannah. 2020. "A Company Made P.P.E. for the World. Now Its Workers Have the Virus." *New York Times*, December 20, 2020. <https://www.nytimes.com/2020/12/20/world/asia/top-glove-ppe-covid-malaysia-workers.html>.

Bell, Shannon Elizabeth, Jenrose Fitzgerald, and Richard York. 2019. "Protecting the Power to Pollute: Identity Co-Optation, Gender, and the Public Relations Strategies of Fossil Fuel Industries in the United States." *Environmental Sociology* 5 (3): 323–338. <https://doi.org/10.1080/23251042.2019.1624001>.

Bergman, Åke, Jarrold J. Heindel, Susan Jobling, Karen A. Kidd, and R. Thomas Zoeller. 2013. "State of the Science of Endocrine Disrupting Chemicals—2012: Summary for Decision-Makers." Summary report, job number: DTI/1554/GE, prepared for the UN Environment Programme and the

WHO. <https://www.unep.org/resources/report/state-science-endocrine-disrupting-chemicals>.

Bhabha, Homi K. 2004. *The Location of Culture*. London: Routledge.

Bhandar, Brenna. 2018. *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership*. Durham, NC: Duke University Press.

Bienkowski, Brian. 2014. "Suspected Hormone-Changing Chemical Found in Air Near Factories." *Scientific American*, October 14, 2014. <https://www.scientificamerican.com/article/suspected-hormone-changing-chemical-found-in-air-near-factories/>.

Block, Hans, and Moritz Riesewieck, dir. 2018. *The Cleaners*. Documentary. Available on Apple TV. Cinephil. <http://gebrueder-beetz.de/en/productions/the-cleaners#credits>.

Blum, Benjamin. 2021. "Canada's COVID-19 Case Rate Now Tops U.S. Rate. Here's What the Experts Say." CBC, April 12, 2021. <https://www.cbc.ca/news/health/canada-us-covid19-cases-per-million-1.5983507>.

Blumer, Ronald H. 2013. *Wiped: The Curious History of Toilet Paper*. Self-published, CreateSpace.

Bowker, Geoffrey C., and Susan Leigh-Star. 2000. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: MIT Press.

#breakfreefromplastic. 2018. "Branded: In Search of the World's Top Corporate Plastic Polluters." Vol. 1. <https://www.breakfreefromplastic.org/globalbrandauditreport2018/>.

Breyer, Melissa. 2020. "Massive New Report Proves That Humans Are the Worst Species." Treehugger, May 13, 2020. <https://www.treehugger.com/massive-new-report-proves-humans-are-worst-species-4857833>.

- Brinkley, Catherine. 2020. "Hardin's Imagined Tragedy Is Pig Shit: A Call for Planning to Recenter the Commons." *Planning Theory* 19 (1): 127–144. <http://doi.org/10.1177/1473095218820460>.
- Brock, Joe, and John Geddie. 2020. "Tyre Industry Pushes Back against Evidence of Plastic Pollution." Reuters, April 22, 2020. <https://www.reuters.com/article/us-tyres-plastic-environment-insight-idUSKCN22413H>.
- Buehler, James W. 2017. "Racial/Ethnic Disparities in the Use of Lethal Force by US Police, 2010–2014." *American Journal of Public Health* 107 (2): 295–297. <https://doi.org/10.2105/AJPH.2016.303575>.
- Bullard, Robert D. 2008. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder, CO: Westview Press.
- Burnstein, Daniel Eli. 2006. *Next to Godliness: Confronting Dirt and Despair in Progressive Era New York City*. Champaign: University of Illinois Press.
- Bushnik, Tracey, Douglas Haines, Patrick Levallois, Johanne Levesque, Jay Van Oostdam, and Claude Viau. 2010. "Lead and Bisphenol A Concentrations in the Canadian Population." *Health Reports* 21, no. 3 (September): 7–18.
- Butler, Judith. 2011. "Bodies in Alliance and the Politics of the Street." *Transversal Texts*, September. <http://eipcp.net/transversal/1011/butler/en>.
- Butt, Waqas H. 2019. "Beyond the Abject: Caste and the Organization of Work in Pakistan's Waste Economy." *International Labor and Working-Class History* 95: 18–33. <https://doi.org/10.1017/S0147547919000061>.
- Campos, María José Zapata, and Patrik Zapata. 2014. "The Travel of Global Ideas of Waste Management: The Case of Managua and Its Informal Settlements." *Habitat International*

41 (January): 41–49. <https://doi.org/10.1016/j.habitatint.2013.07.003>.

Castree, Noel, Rob Kitchin, and Alisdair Rogers. 2013. “Universalism.” *A Dictionary of Human Geography*. Oxford: Oxford University Press.

Cattle, Stephen R., Carl Robinson, and Mark Whatmuff. 2020. “The Character and Distribution of Physical Contaminants Found in Soil Previously Treated with Mixed Waste Organic Outputs and Garden Waste Compost.” *Waste Management* 101 (January): 94–105. <https://doi.org/10.1016/j.wasman.2019.09.043>.

Cayley, David. 2015. *How to Think about Science*. “Episode 11: Sajay Samuel.” Audio, CBC. <https://www.cbc.ca/player/play/1479793272>.

CBC News. 2020. “Protesters Call for Safer Sidewalks, Remember MUN Professor Lost in Accident.” CBC, February 17, 2020. <https://www.cbc.ca/news/canada/newfoundland-labrador/protest-sidewalks-stjohns-1.5466212>.

Chait, Jonathan. 2020. “GOP Senator Upbeat Coronavirus May Kill ‘No More Than 3.4% of Our Population.’” *Intelligencer*, March 18, 2020. <https://nymag.com/intelligencer/2020/03/gop-senator-no-more-than-3-4-of-our-population-may-die.html>.

Chakrabarty, Dipesh. 2009. “The Climate of History: Four Theses.” *Critical Inquiry* 35, no. 2 (Winter): 197–222. <https://doi.org/10.1086/596640>

Chatterjee, Syantani. “The Labors of Failure: Labor, Toxicity, and Belonging in Mumbai.” *International Labor and Working-Class History* 95: 49–75. <https://doi.org/10.1017/S0147547919000073>.

Chemical Retrieval on the Web (CROW). n.d. "Top 10 Packaging Companies." Accessed December 21, 2020. <http://polymerdatabase.com/Polymer%20Brands/Top%2010%20Packaging%20Companies.html>.

City of New York. 2013. *Local Laws of the City of New York for the Year 2013*. "No. 142." https://www1.nyc.gov/assets/dsny/downloads/pdf/about/laws/Polystyrene_foam_law_LL142_2013.pdf.

CLEAR. n.d. "Plastic Pollution Monitoring in Newfoundland and Labrador." Accessed May 27, 2021. <https://civiclaboratory.nl/plastics-wild-food-projects/data-findings-overview/>.

Cole, Laura. 2018. "China's Plastic Import Ban in Numbers" *Geographical*, June 20, 2018. <http://geographical.co.uk/people/development/item/2811-china-s-plastic-import-ban-in-numbers>.

Connell, Raewyn. 1987. *Gender and Power: Society, the Person and Sexual Politics*. Oxford: Polity Press.

Coulthard, Glen Sean. 2014. *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition*. Minneapolis: University of Minnesota Press.

Coverly, Edd de, Pierre McDonagh, Lisa O'Malley, and Maurice Patterson. 2008. "Hidden Mountain: The Social Avoidance of Waste." *Journal of Macromarketing* 28 (3): 289–303. <https://doi.org/10.1177/0276146708320442>

CROW. n.d. "Top 10 Packaging Companies." Accessed December 21, 2020. <http://polymerdatabase.com/Polymer%20Brands/Top%2010%20Packaging%20Companies.html>.

Crutzen, Paul J. 2006. "The 'Anthropocene.'" In *Earth Systems Science in the Anthropocene*, edited by Eckhart Ehlers and Thomas Krafft, 13–18. Berlin: Springer.

Crutzen, Paul J., and Eugene F. Stoermer. 2000. "The Anthropocene." *Global Change Newsletter* 41 (May): 17–18. <http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf>

D'Alisa, Giacomo, Federico Demaria, and Giorgos Kallis. 2014. *Degrowth: A Vocabulary for a New Era*. New York: Routledge.

DART. 2015. "New York State Supreme Court Overturns City's Ban on Foam." Press release, September 22, 2015. <https://www.dartcontainer.com/news/news-archives/news-stories/2015/09/new-york-state-supreme-court-overturns-citys-ban-on-foam/>.

Daston, Lorraine. 2006. "The History of Science as European Self-Portraiture." *European Review* 14 (4): 523–536. <https://doi.org/10.1017/S1062798706000536>.

Dauvergne, Peter. 2010. *The Shadows of Consumption: Consequences for the Global Environment*. Cambridge, MA: MIT Press.

Davies, Thom. 2019. "Slow Violence and Toxic Geographies: 'Out of Sight' to Whom?" *Environment and Planning C: Politics and Space* (April): 1–19. <https://doi.org/10.1177/2399654419841063>.

Davis, Heather, and Zoe Todd. 2017. "On the Importance of a Date, or, Decolonizing the Anthropocene." *ACME: An International Journal for Critical Geographies* 16 (4): 761–80.

DeCambre, Mark. 2020. "About 150 Years of Oil-Price History: This One Chart Illustrates Crude's Spectacular Plunge below \$0 a Barrel." MarketWatch, April 29, 2020. <https://www.marketwatch.com/story/about-150-years-of-oil-price-history-in-one-chart-illustrates-crudes-spectacular-plunge-below-0-a-barrel-2020-04-22>.

DeGue, Sarah, Katherine A. Fowler, and Cynthia Calkins. 2016. "Deaths Due to Use of Lethal Force by Law Enforcement: Findings

from the National Violent Death Reporting System, 17 U.S. States, 2009–2012.” *American Journal of Preventive Medicine* 51, no.5 supplement (November): S173–187. <https://doi.org/10.1016/j.amepre.2016.08.027>.

Dennis, Claude. 1997. *We Are Not You: First Nations and Canadian Modernity*. Toronto: University of Toronto Press.

Dillon, Lindsey. 2014. “Race, Waste, and Space: Brownfield Redevelopment and Environmental Justice at the Hunters Point Shipyard.” *Antipode* 46, no.5 (November):1205–1221. <https://doi.org/10.1111/anti.12009>

Dillon, Lindsey, and Julie Sze. 2016. “Police Power and Particulate Matters: Environmental Justice and the Spatialities of In/Securities in U.S. Cities.” *English Language Notes* 54, no. 2 (September):13–23. <https://doi.org/10.1215/00138282-54.2.13>

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

Douglas, Mary. 1988 [1966]. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London: Ark Paperbacks.

Douglas, Mary. 1980. “Purity and Danger Revisited.” *Times Literary Supplement*, September 19, 1045–1046.

Douglas, Mary. 2002. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London: Routledge.

Dunaway, Finis. 2008. *Natural Visions: The Power of Images in American Environmental Reform*. Chicago: University of Chicago Press.

Dunaway, Finis. 2015. *Seeing Green: The Use and Abuse of American Environmental Images*. Chicago: University of Chicago Press.

Eaton, Jeremy. 2020. “\$1.3M St. John’s Sidewalk Snow-Clearing Proposal Voted down by City Committee.” CBC, September 16,

2020. <https://www.cbc.ca/news/canada/newfoundland-labrador/sidewalk-snow-clearing-budget-increase-st-johns-1.5726065>.

Eisted, Rasmus, and Thomas H. Christensen. 2011. "Waste Management in Greenland: Current Situation and Challenges." *Waste Management & Research* 29 (10): 1064–1070. <https://doi.org/10.1177/0734242X10395421>.

Erasmus, Zimitri. 2020. "Sylvia Wynter's Theory of the Human: Counter-, Not Post-Humanist." *Theory, Culture & Society* 37 (6): 47–65. <https://doi.org/10.1177/0263276420936333>.

Eriksen, Marcus, Franco Borgogno, Patricia Villarrubia-Gómez, Emily Anderson, Carolyn Box, and Nicole Trenholm. 2020. "Mitigation Strategies to Reverse the Rising Trend of Plastics in Polar Regions." *Environment International* 139 (June). <https://doi.org/10.1016/j.envint.2020.105704>.

Estes, Nick, and Jaskiran Dhillon. 2019. *Standing with Standing Rock: Voices from the #NoDAPL Movement*. Minneapolis: University of Minnesota Press.

Fardon, Richard. 1999. *Mary Douglas: An Intellectual Biography*. New York: Routledge.

Fardon, Richard. 2013. "Citations out of Place." *Anthropology Today* 29, no. 1 (February): 25–27. <https://doi.org/10.1111/1467-8322.12007>

Fawcett-Atkinson, Marc. 2021. "The Backroom Battle between Industry, Ottawa and Environmentalists over Plastics Regulation." *Canada's National Observer*. <https://www.nationalobserver.com/2021/03/08/backroom-battle-between-industry-ottawa-and-environmentalists-over-plastics>.

Fiske, Amelia. 2018. "Dirty Hands: The Toxic Politics of Denunciation." *Social Studies of Science* 48, no. 3: 389–413. <https://doi.org/10.1177/0306312718781505>.

Fortier, Craig. 2017. *Unsettling the Commons: Social Movements within, against, and beyond Settler Colonialism*. New York: ARP Books.

Foucault, Michel. 1977. *Discipline and Punish: The Birth of the Prison*. New York: Vintage.

Fredericks, Rosalind. 2014. "Vital Infrastructures of Trash in Dakar." *Comparative Studies of South Asia, Africa and the Middle East* 34, no. 3 (December): 532–548. <https://doi.org/10.1215/1089201X-2826085>.

Friedrich, Johannes, Mengpin Ge, and Andrew Pickens. 2020. "This Interactive Chart Shows Changes in the World's Top 10 Emitters." World Resources Institute, December 10, 2020. <https://www.wri.org/blog/2020/12/interactive-chart-top-emitters>.

Fu, Pingqing, and Kimitaka Kawamura. 2010. "Ubiquity of Bisphenol A in the Atmosphere." *Environmental Pollution* 158, no. 10 (October): 3138–3143. <https://doi.org/10.1016/j.envpol.2010.06.040>.

Furniss, Jamie. 2017. "What Type of Problem Is Waste in Egypt?" *Social Anthropology* 25, no. 3 (August): 301–317. <https://doi.org/10.1111/1469-8676.12421>

Gabrielsen, Paul. 2013. "Do Plastic Bag Bans Really Reduce Litter?" *Mercury News* (blog). July 16, 2013. <https://www.mercurynews.com/2013/07/16/do-plastic-bag-bans-really-reduce-litter/>.

Garza, Alicia. 2014. "A Herstory of the #BlackLivesMatter Movement." *Feminist Wire*, October 7, 2014. <https://thefeministwire.com/2014/10/blacklivesmatter-2/>.

Gray-Cosgrove, Carmella, Max Liboiron, and Josh Lepawsky. 2015. "The Challenges of Temporality to Depollution &

Remediation." *S.A.P.I.E.N.S. Surveys and Perspectives Integrating Environment and Society*, no. 8. <https://sapiens.revues.org/1740>.

Gibbs, Lois Marie. 2010. *Love Canal and the Birth of the Environmental Health Movement*. Washington, DC: Island Press.

Gibbs, Lois Marie, and Murray Levine. 1982. *Love Canal: My Story*. Albany: SUNY Press.

Gidwani, Vinay, and Rajyashree N. Reddy. 2011. "The Afterlives of 'Waste': Notes from India for a Minor History of Capitalist Surplus." *Antipode* 43, no. 5 (November): 1625–1658. <https://doi.org/10.1111/j.1467-8330.2011.00902.x>.

Gille, Zsuzsa. 2007. *From the Cult of Waste to the Trash Heap of History: The Politics of Waste in Socialist and Postsocialist Hungary*. Bloomington: Indiana University Press.

Gille, Zsuzsa. 2013. "Is There an Emancipatory Ontology of Matter? A Response to Myra Hird." *Social Epistemology Review and Reply Collective* 2 (4): 1–6. <https://social-epistemology.com/2013/03/03/is-there-an-emancipatory-ontology-of-matter-a-response-to-myra-hird-zsuzsa-gille/>.

Gillespie, Tarleton. 2018. *Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media*. New Haven: Yale University Press.

Glickman, Lawrence B. 2009. *Buying Power: A History of Consumer Activism in America*. Chicago: University of Chicago Press.

Goldstein, Jesse. 2013. "Terra Economica: Waste and the Production of Enclosed Nature." *Antipode* 45, no. 2 (March): 357–375. <https://doi.org/10.1111/j.1467-8330.2012.01003.x>

Government of Canada. 2018. "Reporting Requirements Fact Sheet: National Pollutant Release Inventory." Last modified

December 13, 2018. <https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report/requirements-fact-sheet.html>.

Gregson, Nicky, and Mike Crang. 2018. "Made in China and the New World of Secondary Resource Recovery." *Environment and Planning A: Economy and Space* 51 (4): 1031– <https://doi.org/10.1177/0308518X18791175> 5.

Griffin, Paul. 2017. "The Carbon Majors Database: CDP Carbon Majors Report 2017." CDP. July 2017. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772>.

Gupta, Akhil. 2018. "The Future in Ruins: Thoughts on the Temporality of Infrastructure." In *The promise of Infrastructure*, edited by Nikhil Anand, Akhil Gupta, and Hannah Appel, 62–79. Durham, NC: Duke University Press.

Hale, C. R. 2006. "Activist Research v. Cultural Critique: Indigenous Land Rights and the Contradictions of Politically Engaged Anthropology." *Cultural Anthropology* 21, no. 1 (February): 96–120. <https://doi.org/10.1525/can.2006.21.1.96>

Hamlin, Christopher. 1990. *A Science of Impurity: Water Analysis in Nineteenth Century Britain*. Berkeley: University of California Press.

Hancock, John Lee, dir. 2016. *The Founder* Available on Apple TV.

Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (Autumn): 575–599. <https://doi.org/10.2307/3178066>.

Haraway, Donna. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press.

Harcourt, Bernard E. 2009. *Illusion of Order: The False Promise of Broken Windows Policing*. Cambridge, MA: Harvard University Press.

Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science* 162, no. 3859: 1243–1248. <https://doi.org/10.1126/science.162.3859.1243>.

Harman, Graham. 2018. *Object-Oriented Ontology: A New Theory of Everything*. London: Penguin UK.

Harris, Cole. 2004. "How Did Colonialism Dispossess? Comments from an Edge of Empire." *Annals of the Association of American Geographers* 94 (1): 165–182. <https://doi.org/10.1111/j.1467-8306.2004.09401009.x>.

Hauen, Jack. 2020. "Pandemic Prompts Fear That People with Disabilities Will Be Deprioritized for Lifesaving Care." QP Briefing, April 3, 2020. <https://www.qpbriefing.com/2020/04/03/people-with-disabilities-worry-they-and-their-loved-ones-could-be-deprioritized-for-covid-19-care-if-pandemic-worsens/>.

Hawkins, Gay. 2001. "Plastic Bags: Living with Rubbish." *International Journal of Cultural Studies* 4 (1): 5–23. <https://doi-org/10.1177/136787790100400101>.

Hawkins, Gay. 2006. *The Ethics of Waste: How We Relate to Rubbish*. Lanham, MD: Rowman & Littlefield.

Hawkins, Gay. 2011. "Packaging Water: Plastic Bottles as Market and Public Devices." *Economy and Society* 40 (4): 534–552. <https://doi.org/10.1080/03085147.2011.602295>.

Hecht, Gabrielle. 2018. "The African Anthropocene." Aeon, February 6, 2018. <https://aeon.co/essays/if-we-talk-about-hurting-our-planet-who-exactly-is-the-we>.

Heglar, Mary Annaïse. 2019. "Climate Change Isn't the First Existential Threat." Zora, February 18, 2019. <https://zora>

.medium.com/sorry-yall-but-climate-change-ain-t-the-first-existential-threat-b3c999267aa0.

Herbert, Lewis. 2007. "Centenary History of Waste and Waste Managers in London and South East England." Chartered Institution of Wastes Management. Archived May 17, 2013. https://web.archive.org/web/20130813042213/http://www.ciwm.co.uk/web/FILES/About_CIWM/100_yrs_London_and_SE_centre.pdf

Hird, Myra J. 2012. "Knowing Waste: Towards an Inhuman Epistemology." *Social Epistemology* 26 (3–4): 453–469. <https://doi-org/10.1080/02691728.2012.727195>.

Hird, Myra J. 2013. "Is Waste Indeterminacy Useful? A Response to Zsuzsa Gille." *Social Epistemology Review and Reply Collective* 2 (6): 28–33.

Homonoff, Tatiana A. 2018. "Can Small Incentives Have Large Effects? The Impact of Taxes versus Bonuses on Disposable Bag Use." *American Economic Journal: Economic Policy* 10, no. 4 (November): 177–210. <https://doi.org/10.1257/pol.20150261>.

hooks, bell. 2014. *Yearning: Race, Gender, and Cultural Politics*. 2nd ed. New York: Routledge.

Hoover, Elizabeth. 2013. "Cultural and Health Implications of Fish Advisories in a Native American Community." *Ecological Processes* 2 (1): 4. <https://doi-org/10.1186/2192-1709-2-4>.

Hoover, Elizabeth. 2017. *The River Is in Us: Fighting Toxics in a Mohawk Community*. Minneapolis: University of Minnesota Press.

Hormann, Annette M., Frederick S. vom Saal, Susan C. Nagel, Richard W. Stahlhut, Carol L. Moyer, Mark R. Ellersieck, Wade V. Welshons, Pierre-Louis Toutain, and Julia A. Taylor. 2014. "Holding Thermal Receipt Paper and Eating Food after Using Hand Sanitizer Results in High Serum Bioactive and Urine Total Levels of Bisphenol A (BPA)." *PLOS ONE* 9, no. 10 (October). <https://doi.org/10.1371/journal.pone.0110509>.

Horton, Stephen. 1997. "Value, Waste and the Built Environment: A Marxian Analysis." *Capitalism Nature Socialism* 8 (2): 127–139. <https://doi.org/10.1080/10455759709358740>.

Ialenti, Vincent. 2021. "Drum Breach: Operational Temporalities, Error Politics and WIPP's Kitty Litter Nuclear Waste Accident." *Social Studies of Science* 51, no. 3: 364–391. <https://doi.org/10.1177/0306312720986609>.

Include Gender. 2014. "Gender Equal Snow Clearing in Karlskoga." February 18, 2014; last updated October 25, 2016. <https://www.includegender.org/gender-equality-in-practice/planning-and-urban-development/gender-equal-snow-clearing-in-karlskoga/>.

James, William. 1929. *Varieties of Religious Experience*. London: Modern Library.

Jasanoff, Sheila. 2014. "Serviceable Truths: Science for Action in Law and Policy." *Texas Law Review* 93: 27.

Jenks, Andrew B., and Kelsey M. Obringer. 2020. "The Poverty of Plastics Bans: Environmentalism's Win Is a Loss for Disabled People." *Critical Social Policy* 40 (1): 151–161. <https://doi.org/10.1177/0261018319868362>.

Johnson, Dr. Ayana Elizabeth. 2020a. "Yo . . . I'm Getting Some Truly Wild Emails. 'I Am Not a Black Person, but . . .' Followed by What They Think Black People Should Do. And SO MANY Strangers Fully Expect Me to Hop on the Phone and Give FREE Advice on How to Fix Race Problems in Their Orgs. That Is Not How This Works. 🗑️🗑️♀️." Tweet. @ayanaeliza (blog). June 11, 2020. <https://twitter.com/ayanaeliza/status/1271053502752710663>.

Johnson, Ayana Elizabeth. 2020b. "We Can't Solve the Climate Crisis Unless Black Lives Matter." *Time*, July 9, 2020. <https://time.com/5864705/climate-change-black-lives-matter/>.

Jones, Penny, and Jerry Powell. 1999. "Gary Anderson Has Been Found!" *Resource Recycling*, 1999. https://logoblink.com/img/2008/03/recycling_symbol_garyanderson.pdf.

June, Laura. 2013. "Your Meat Addiction Is Destroying the Planet." *Verge*, August 13, 2013. <https://www.theverge.com/2013/8/13/4605528/your-meat-addiction-is-destroying-the-planet-but-we-can-fix-it>.

Kam, Katherine. 2020. "How Do You Choose Who Gets a Ventilator?" *WebMD*, April 8, 2020. <https://www.webmd.com/lung/news/20200408/how-do-you-choose-who-gets-a-ventilator>.

Kao, Shih-yang. 2013. "The City Recycled: The Afterlives of Demolished Buildings in Postwar Beijing." PhD thesis, University of California, Berkeley.

Keeling, Arn. 2012. "Mineral Waste." In *Encyclopedia of Consumption and Waste*, vol 1., edited by Carl A. Zimring and William L. Rathje 553–556. Thousand Oaks, CA: SAGE.

Keeling, Arn, and John Sandlos. 2015. *Mining and Communities in Northern Canada: History, Politics, and Memory*. Canada: University of Calgary Press.

Killinger, Jennifer. 2010. "Plastics Industry Testifies in Support of New York City Recycling Program Expansion." American Chemistry Council, April 27, 2010. Archived October 28, 2020, press release. <https://web.archive.org/web/20201028174010/https://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/Plastics-Industry-Testifies-in-Support-of-New-York-City-Recycling-Program-Expansion.html>.

Kristeva, Julia. 1982. *Powers of Horror*. New York: Columbia University Press.

Kuempel, E. D., and T. Sorahan. 2010. "Identification of Research Needs to Resolve the Carcinogenicity of High-Priority

IARC Carcinogens." *International Agency for Research on Cancer*, 61–72.

Leonard, Annie. 2010. *The Story of Stuff: How Our Obsession with Stuff Is Trashing the Planet, Our Communities, and Our Health—and a Vision for Change*. New York: Simon and Schuster.

Lepawsky, Josh. 2018. *Reassembling Rubbish: Worlding Electronic Waste*. Cambridge, MA: MIT Press.

Lepawsky, Josh. 2019. "No Insides on the Outsides." *Discard Studies* (blog). September 23, 2019. <https://discardstudies.com/2019/09/23/no-insides-on-the-outsides/>.

Lepawsky, Josh, and Max Liboiron. 2015. "Why Discards, Diverse Economies, and Degrowth?" *Society & Space* (blog). August 14, 2015. <https://www.societyandspace.org/articles/why-discards-diverse-economies-and-degrowth/>.

Lerner, Steve. 2012. *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States*. Cambridge, MA: MIT Press.

Liboiron, Max. 2009. "Recycling as a Crisis of Meaning." *Etopia*. <http://etopia.journals.yorku.ca/index.php/etopia/article/view/36718>.

Liboiron, Max. 2012a. "Recycling." In *Encyclopedia of Consumption and Waste: The Social Science of Garbage*, edited by Carl A. Zimring and William L. Rathje, 735–738. Thousand Oaks, CA: SAGE.

Liboiron, Max. 2012b. "Designing a Reuse Symbol and the Challenge of Recycling's Legacy." *Discard Studies* (blog). July 25, 2012. <https://discardstudies.com/2012/07/25/designing-a-reuse-symbol-and-the-challenge-of-recyclings-legacy/>.

Liboiron, Max. 2013. "Modern Waste as Strategy." *Lo Squaderno: Explorations in Space and Society* 29: 9–12.

Liboiron, Max. 2014a. "Against Awareness, For Scale: Garbage Is Infrastructure, Not Behavior." *Discard Studies* (blog). January 23, 2014. <http://discardstudies.com/2014/01/23/against-awareness-for-scale-garbage-is-infrastructure-not-behavior/>.

Liboiron, Max. 2014b. "Solutions to Waste and the Problem of Scalar Mismatches." *Discard Studies* (blog). February 10, 2014. <http://discardstudies.com/2014/02/10/solutions-to-waste-and-the-problem-of-scalar-mismatches/>.

Liboiron, Max. 2015a. "How the Ocean Cleanup Array Fundamentally Misunderstands Marine Plastics and Causes Harm." *Discard Studies* (blog). May 6, 2015. <http://discardstudies.com/2015/06/05/how-the-ocean-clean-up-array-fundamentally-misunderstands-marine-plastics-and-causes-harm/>.

Liboiron, Max. 2015b. "The Power Behind Disposability: Why New York City's Ban on Polystyrene Was Vilified, Sued, and Reversed." *Discard Studies* (blog). September 29, 2015. <https://discardstudies.com/2015/09/29/the-power-behind-disposability-why-new-york-citys-ban-on-polystyrene-was-vilified-sued-and-reversed/>.

Liboiron, Max. 2015c. "Redefining Pollution and Action: The Matter of Plastics." *Journal of Material Culture* 21, no. 1 (December), 1–24. <https://doi.org/10.1177/1359183515622966>.

Liboiron, Max. 2016. "Municipal versus Industrial Waste: Questioning the 3–97 Ratio." *Discard Studies* (blog). March 2, 2016. <http://discardstudies.com/2016/03/02/municipal-versus-industrial-waste-a-3-97-ratio-or-something-else-entirely/>.

Liboiron, Max. 2018. "How Plastic Is a Function of Colonialism." *Teen Vogue*. December 21, 2018. <https://www.teenvogue.com/story/how-plastic-is-a-function-of-colonialism>.

Liboiron, Max. 2020. "What Does NL's Plastic Bag Ban Mean for Marine Plastics?" CLEAR. January 31, 2020.

<https://civiclaboratory.nl/2020/01/31/what-does-nls-plastic-bag-ban-mean-for-marine-plastics/>.

Liboiron, Max. 2021. *Pollution Is Colonialism*. Durham: Duke University Press.

Liboiron, Max, Nadia Duman, Alex Bond, Louis Charron, France Liboiron, Justine Ammendolia, Kaitlyn Hawkins, Emily Wells, Jessica Melvin, Natalya Dawe, and Melissa Novacefski. 2020. "Regional Report on Plastic Pollution in Newfoundland and Labrador, 1962–2019." CLEAR. <https://civiclaboratory.files.wordpress.com/2020/09/clear-regional-report-on-plastic-pollution-in-nl-1962-2019.pdf>.

Liboiron, Max, Manuel Tironi, and Nerea Calvillo. 2018. "Toxic Politics: Acting in a Permanently Polluted World." *Social Studies of Science* 48 (3): 331–349. <https://doi.org/10.1177/0306312718783087>.

Liubarskaia, M., M. Tsurkan, and A. Artemiev. 2019. "Increasing the Waste Management Efficiency in the Arctic Zone of Russia through the Projects of Eco-Industrial Parks' Development." Paper presented at the Efficient Waste Treatment Conference, St. Petersburg, Russia, December 2018. <https://doi.org/10.1088/1755-1315/337/1/012024>.

London, B. 1932. "Ending the Depression through Planned Obsolescence." Pamphlet; available at [https://upload.wikimedia.org/wikipedia/commons/2/27/London_\(1932\)_Ending_the_depression_through_planned_obsolescence.pdf](https://upload.wikimedia.org/wikipedia/commons/2/27/London_(1932)_Ending_the_depression_through_planned_obsolescence.pdf).

Loreto, Nora. 2021. "COVID-19 Measures and Industrial Workplaces." *Discard Studies* (blog). January 5, 2021. <https://discardstudies.com/2021/01/05/covid-19-measures-and-industrial-workplaces/>.

Lund, Emily M., and Kara B. Ayers. 2020. "Raising Awareness of Disabled Lives and Health Care Rationing during the COVID-19

Pandemic." *Psychological Trauma: Theory, Research, Practice, and Policy* 12 (August). <https://doi.org/10.1037/tra0000673>

MacBride, Samantha. 2012. *Recycling Reconsidered: The Present Failure and Future Promise of Environmental Action in the United States*. Cambridge, MA: MIT Press.

MacBride, Samantha. 2019. "Does Recycling Actually Conserve or Preserve Things?" *Discard Studies* (blog). February 11, 2019. <https://discardstudies.com/2019/02/11/12755/>.

Maniates, Michael F. 2001. "Individualization: Plant a Tree, Buy a Bike, Save the World?" *Global Environmental Politics* 1, no. 3 (August): 31–52. <https://doi.org/10.1162/152638001316881395>.

Marston, Sallie A. 2000. "The Social Construction of Scale." *Progress in Human Geography* 24 (2): 219–242. <https://doi-org/10.1191/030913200674086272>.

Martini, Kim, and Miriam Goldstein. 2014. "The Ocean Cleanup, Part 2: Technical Review of the Feasibility Study." *Deep Sea News* (blog). July 14, 2014. <http://deepseanews.com/2014/07/the-ocean-cleanup-part-2-technical-review-of-the-feasibility-study/>.

Marx, Karl. 2004. *Capital: A Critique of Political Economy*. London: Penguin UK.

Matsakis, Louise. 2020. "Coronavirus Disrupts Social Media's First Line of Defense." *Wired*, March 18, 2020. <https://www.wired.com/story/coronavirus-social-media-automated-content-moderation/>.

Maynard, Robyn, and Andrea J. Ritchie. 2020. "Black Communities Need Support, Not a Coronavirus Police State." *Vice*. April 9, 2020. https://www.vice.com/en_ca/article/z3bdmx/black-people-coronavirus-police-state.

Mbembe, Achille. 2003. "Necropolitics." *Public Culture* 15 (1): 11–40.

Mbembe, Achille. 2019. *Necropolitics*. Durham: Duke University Press.

McDonough, William, and Michael Braungart. 2002. *Cradle to Cradle: Remaking the Way We Make Things*. Vol. 1. New York: North Point Press.

McKittrick, Katherine. 2015. *Sylvia Wynter: On Being Human as Praxis*. Durham, NC: Duke University Press.

McMaster, M. E. 2004. *A Decade of Research on the Environmental Impacts of Pulp and Paper Mill Effluents in Canada (1992–2002)*. NWRI Scientific Assessment Report Series no. 4. Burlington, Ontario.: Environment Canada, National Water Research Institute.

Meikle, Jeffrey L. 1995. *American Plastic: A Cultural History*. Rutgers, NJ: Rutgers University Press.

Melosi, Martin V. 1981. *Garbage in the City*. College Station: Texas A&M University Press.

Melosi, Martin V. 2008. *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present*. Pittsburgh: University of Pittsburgh Press.

Memorial University. 2020. "Memorial's New Policy on Research Impacting Indigenous Groups." *Memorial University of Newfoundland and Labrador*. Accessed May 27, 2021. <https://www.mun.ca/research/Indigenous/consent.php/>.

Mildenberger, Matto (@mmildenberger). 2019a. "Something I've Been Meaning to Say about The Tragedy of the Commons . . ." Twitter thread. March 4, 2019. (<https://twitter.com/mmildenberger/status/1102604887223750657?s=11>).

Mildenberger, Matto. 2019b. "The Tragedy of 'The Tragedy of the Commons.'" *Scientific American*, April 23.

Ministry of Environmental Protection of the People's Republic of China. 2017. "World Trade Organization | Committee on Technical Barriers to Trade." World Trade Organization. <http://tbtims.wto.org/en/RegularNotifications/View/137356?FromAllNotifications=True>.

Mol, Annemarie. 2002. *The Body Multiple: Ontology in Medical Practice*. Durham: Duke University Press.

Moore, Sarah A. 2012. "Garbage Matters: Concepts in New Geographies of Waste." *Progress in Human Geography* 36 (6): 780–799. <https://doi.org/10.1177/0309132512437077>.

Moore, Sarah A., Heather Rosenfeld, Eric Nost, Kristen Vincent, and Robert E. Roth. 2018. "Undermining Methodological Nationalism: Cosmopolitan Analysis and Visualization of the North American Hazardous Waste Trade." *Environment and Planning A: Economy and Space* 50 (8): 1558–1579. <https://doi.org/10.1177/0308518X18784023>.

Mott, Carrie, and Daniel Cockayne. 2017. "Citation Matters: Mobilizing the Politics of Citation toward a Practice of 'Conscientious Engagement.'" *Gender, Place & Culture* 24 (7): 954–973. <https://doi.org/10.1080/0966369X.2017.1339022>.

Mueller, Tadzio, and Alexis Passadakis. 2009. "Green Capitalism and the Climate: It's Economic Growth, Stupid." *Critical Currents* 6: 54–61.

Murphy, Michelle. 2017a. *The Economization of Life*. Durham: Duke University Press.

Murphy, Michelle. 2017b. "Alterlife and Decolonial Chemical Relations." *Cultural Anthropology* 32 (4): 494–503. <https://doi.org/10.14506/ca32.4.02>.

Musulin, Kristin. 2018. "Vietnam to Temporarily Stop Accepting Scrap Plastic Imports." Waste Dive, May 24, 2018. <https://www>

.wastedive.com/news/vietnam-scrap-plastic-imports-temporary-ban/524281/.

Mykitiuk, Roxanne, and Trudo Lemmens. 2020. "Opinion: Assessing the Value of a Life: COVID-19 Triage Orders Mustn't Work against Those with Disabilities." CBC, April 19, 2020. <https://www.cbc.ca/news/opinion/opinion-disabled-covid-19-triage-orders-1.5532137>.

Nagle, Robin. 2011. "The History and Future of Fresh Kills." In *Dirt: The Filthy Reality of Everyday Life*, edited by N. Monem. London: Profile Books.

Nagle, Robin. 2013. *Picking Up: On the Streets and Behind the Trucks with the Sanitation Workers of New York City*. New York: Farrar, Straus and Giroux.

Narayan, Badri. 2020. "Covid-19: Reducing Migrant Labour to Biological Body with No Human Value." *Business Standard India*, April 7, 2020. https://www.business-standard.com/article/current-affairs/covid-19-reducing-migrant-labour-to-biological-body-with-no-human-value-120040700311_1.html.

National Inquiry into Missing and Murdered Indigenous Women and Girls. n.d. "Reclaiming Power and Place: Executive Summary of the Final Report." Accessed December 21, 2020. https://www.mmiwg-ffada.ca/wp-content/uploads/2019/06/Executive_Summary.pdf.

Neilson, Susie. "On the Line in California." Waste Dive, December 11, 2019. <https://www.wastedive.com/news/recycling-labor-mrf-on-the-line-in-california/568552/>.

Newman, Richard S. 2016. *Love Canal: A Toxic History from Colonial Times to the Present*. New York: Oxford University Press.

Newton, Casey. 2019a. "The Trauma Floor: The Secret Lives of Facebook Moderators in America." *Verge*, February 25, 2019. <https://www.theverge.com/2019/2/25/18229714/cognizant>

-facebook-content-moderator-interviews-trauma-working-conditions-arizona.

Newton, Casey. 2019b. "Bodies in Seats." *Verge*, June 19, 2019. <https://www.theverge.com/2019/6/19/18681845/facebook-moderator-interviews-video-trauma-ptsd-cognizant-tampa>.

Nzeadibe, Thaddeus Chidi. 2013. "Informal Waste Management in Africa: Perspectives and Lessons from Nigerian Garbage Geographies." *Geography Compass* 7 (10): 729–744. <https://doi.org/10.1111/gec3.12072>.

O'Brien, Mary H. 1993. "Being a Scientist Means Taking Sides." *BioScience* 43, no. 10 (November): 706–708. <https://doi.org/10.2307/1312342>.

O'Connell, Jennifer. 2019. "Facebook's Dirty Work in Ireland: 'I Had to Watch Footage of a Person Being Beaten to Death.'" *Irish Times*, March 30, 2019. <https://www.irishtimes.com/culture/tv-radio-web/facebook-s-dirty-work-in-ireland-i-had-to-watch-footage-of-a-person-being-beaten-to-death-1.3841743>.

Ofrias, Lindsay. 2017. "Invisible Harms, Invisible Profits: A Theory of the Incentive to Contaminate." *Culture, Theory and Critique* 58, no. 4: 1–22. <https://doi.org/10.1080/14735784.2017.1357478>.

Oil & Gas Journal. 2013. "What the Frac Is a Man Camp?" April 1, 2013. <https://www.ogj.com/home/article/17293118/what-the-frac-is-a-man-camp>.

O'Neill, Robert V., and A.W. King. 1998. "Homage to St. Michael: Or Why Are There so Many Books on Scale?" In *Ecological Scale: Theory and Application*, edited by David L. Peterson and V. Thomas Parker. New York: Columbia University Press.

Oppel, Richard A., Jr., Robert Gebeloff, K. K. Rebecca Lai, Will Wright, and Mitch Smith. 2020. "The Fullest Look Yet

at the Racial Inequity of Coronavirus." *New York Times*, July 5, 2020. <https://www.nytimes.com/interactive/2020/07/05/us/coronavirus-latinos-african-americans-cdc-data.html>.

Oremus, Will. 2020. "What Everyone's Getting Wrong About the Toilet Paper Shortage." *Marker* (blog). April 2, 2020. <https://marker.medium.com/what-everyones-getting-wrong-about-the-toilet-paper-shortage-c812e1358fe0>.

Oreskes, Naomi, and Erik M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury.

Packard, Vance. 1960. *The Waste Makers*. Philadelphia: David McKay.

Parker, Brittney W., Barbara A. Beckingham, Brianna C. Ingram, Joseph C. Ballenger, John E. Weinstein, and Gorka Sancho. 2020. "Microplastic and Tire Wear Particle Occurrence in Fishes from an Urban Estuary: Influence of Feeding Characteristics on Exposure Risk." *Marine Pollution Bulletin* 160. <https://doi.org/10.1016/j.marpolbul.2020.111539>.

Parker, Larry, and John Blodgett. 2008. "Greenhouse Gas Emissions: Perspectives on the Top 20 Emitters and Developed Versus Developing Nations." Order Code RL32721. Washington, DC: Congressional Research Service. <https://fas.org/sgp/crs/misc/RL32721.pdf>.

Parker, Laura. 2018. "China's Ban on Trash Imports Shifts Waste Crisis to Southeast Asia." *National Geographic*, November 16, 2018. <https://www.nationalgeographic.com/environment/2018/11/china-ban-plastic-trash-imports-shifts-waste-crisis-southeast-asia-malaysia/>.

Parker, Laura, and Kennedy Elliot. 2018. "Plastic Recycling Is Broken. Here's How to Fix It." *National Geographic*, June 20, 2018. <https://www.nationalgeographic.com/news/2018/06/china-plastic-recycling-ban-solutions-science-environment/>.

Perez, Caroline Criado. 2019. *Invisible Women: Exposing Data Bias in a World Designed for Men*. New York: Random House.

Perez, Lisa M., Jeremy Jones, David R. Englert, and Daniel Sachau. 2010. "Secondary Traumatic Stress and Burnout among Law Enforcement Investigators Exposed to Disturbing Media Images." *Journal of Police and Criminal Psychology* 25 (2010): 113–124. <https://doi.org/10.1007/s11896-010-9066-7>.

Pesce, Nicole Lyn. 2020. "Dr. Oz Apologizes for Suggesting It May 'Only Cost Us' 2% to 3% of American Lives to Reopen Schools." MarketWatch, April 17, 2020. <https://www.marketwatch.com/story/dr-oz-slammed-for-suggesting-it-may-only-cost-us-2-to-3-of-american-lives-to-reopen-schools-2020-04-16>.

Pezzullo, Phaedra C. 2011. "Contextualizing Boycotts and Buycotts: The Impure Politics of Consumer-Based Advocacy in an Age of Global Ecological Crises." *Communication and Critical/Cultural Studies* 8 (2): 124–145. <https://doi.org/10.1080/14791420.2011.566276>.

Pine, Kathleen H., and Max Liboiron. 2015. "The Politics of Measurement and Action." In *CHI '15: Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, 3147–3156. New York: Association for Computing Machinery. <https://doi.org/10.1145/2702123.2702298>.

Plastic News. 2015. "Judge Overturns NYC's EPS Ban." Press release, September 22, 2015. <https://www.plasticsnews.com/article/20150922/NEWS/150929975/judge-overturns-nyc-s-eps-ban>.

PlasticsEurope. 2016. "Plastics—the Facts 2016: An Analysis of European Plastics Production, Demand and Waste Data." A report by PlasticsEurope. <https://www.plasticseurope.org/application/files/4315/1310/4805/plastic-the-fact-2016.pdf>.

PlasticsEurope. 2019. "Plastics—the Facts 2019: An Analysis of European Plastics Production, Demand and Waste Data."

A report by PlasticsEurope. https://www.plasticseurope.org/application/files/1115/7236/4388/FINAL_web_version_Plastics_the_facts2019_14102019.pdf.

Porter, Richard C. 2002. *The Economics of Waste*. Washington, DC: Resources for the Future.

Price-Haywood, Eboni G., Jeffrey Burton, Daniel Fort, and Leonardo Seoane. 2020. "Hospitalization and Mortality among Black Patients and White Patients with Covid-19." *New England Journal of Medicine* 382 (26): 2534–2543. <https://doi.org/10.1056/NEJMsa2011686>.

Pyzyk, Katie. 2018. "China's New Role in the Global Recycling Economy." Waste Dive, October 23, 2018. https://www.wastedive.com/news/china-new-role-global-recycling-economy/540282/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202018-10-23%20Waste%20Dive%20Newsletter%20%5Bissue:17751%5D&utm_term=Waste%20Dive.

Pyzyk, Katie. 2020. "Chicago COVID-19 Data Stresses Racial Disparities Seen Nationally." Smart Cities Dive, April 21, 2020. https://www.smartcitiesdive.com/news/chicago-coronavirus-data-racial-inequity-disparities/576377/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202020-04-22%20Smart%20Cities%20Dive%20Newsletter%20%5Bissue:26921%5D&utm_term=Smart%20Cities%20Dive.

Quinn, Paul. 2018. "Tyres and Microplastics: Time to Reinvent the Wheel?" Friends of the Earth, November 22, 2018. <https://friendsoftheearth.uk/sustainable-living/tyres-and-microplastics-time-reinvent-wheel>. Raffles, Hugh. 2017. "Against Purity." *Social Research* 84 (1): 171–182.

Reed, John, Leslie Hook, and David Blood. 2018. "Why the World's Recycling System Stopped Working." *Financial Times*, October 25, 2018. <https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8>.

Reno, Joshua. 2015. "Waste and Waste Management." *Annual Review of Anthropology* 44, no. 1: 557–572. <https://doi.org/10.1146/annurev-anthro-102214-014146>.

Reno, Joshua. 2016. *Waste Away: Working and Living with a North American Landfill*. Berkeley, California: University of California Press.

Research and Markets. 2016. *Bisphenol-A—A Global Market Overview*. Report ID 3625843, February 2016. <https://www.researchandmarkets.com/reports/3625843/bisphenol-a-a-global-market-overview>.

Ripple, William J., Christopher Wolf, Thomas M. Newsome, Mauro Galetti, Mohammed Alamgir, Eileen Crist, Mahmoud I. Mahmoud, William F. Laurance, and 15,364 scientist signatories from 184 countries. 2017. "World Scientists' Warning to Humanity: A Second Notice." *BioScience* 67, no. 12 (December): 1026–1028. <https://doi.org/10.1093/biosci/bix125>.

Ritchie, Hannah, and Max Roser. 2018. "Plastic Pollution." *Our World in Data*, September 2018. Accessed September 2, 2021. <https://ourworldindata.org/plastic-pollution>.

Rittel, Horst W. J., and Melvin M. Webber. 1973. "Dilemmas in a General Theory of Planning." *Policy Sciences* 4: 155–169.

Roberts, Sarah T. 2019. *Behind the Screen: Content Moderation in the Shadows of Social Media*. New Haven: Yale University Press.

Roberts, Sarah T. 2020. "Over*Flow: Digital Humanity: Social Media Content Moderation and the Global Tech Workforce in the COVID-19 Era." *Flow*, March 19, 2020. <https://www.flowjournal.org/2020/03/digital-humanity/>.

Rochman, Chelsea M., Mark Anthony Browne, Benjamin S. Halpern, Brian T. Hentschel, Eunha Hoh, Hrisi K. Karapanagioti, Lorena M. Rios-Mendoza, Hideshige Takada, Swee Teh, and

Richard C. Thompson. 2013. "Classify Plastic Waste as Hazardous." *Nature* 494, no. 7436: 169–171.

Rodriguez-Lonebear, Desi, Nicolás E. Barceló, Randall Akee, and Stephanie Russo Carroll. 2020. "American Indian Reservations and COVID-19: Correlates of Early Infection Rates in the Pandemic." *Journal of Public Health Management and Practice* 26, no. 4 (July/August): 371–377. <https://doi.org/10.1097/PHH.0000000000001206>.

Rogers, Heather. 2005. *Gone Tomorrow: The Hidden Life of Garbage*. New York: New Press.

Rosenbaum, Lisa. 2020. "Facing Covid-19 in Italy—Ethics, Logistics, and Therapeutics on the Epidemic's Front Line." *New England Journal of Medicine* 382 (20): 1873–1875. <https://doi.org/10.1056/NEJMp2005492>.

Rosengren, Cole. "High Risk, Hidden Workforce." Waste Dive, December 11, 2019. <https://www.wastedive.com/news/recycling-labor-mrf-high-risk-hidden-workforce/568550/>.

Ross, Kristin. 1996. *Fast Cars, Clean Bodies: Decolonization and the Reordering of French Culture*. Cambridge, MA: MIT Press.

Rovelli, Carlo. 2014. "Science Is Not About Certainty." *New Republic*, July 11, 2014. <https://newrepublic.com/article/118655/theoretical-physicist-explains-why-science-not-about-certainty>.

Roy, Ananya. 2020. "Upcoming Teaching Week." *Twitter*. Retrieved December 21, 2020 (<https://twitter.com/ananyaUCLA/status/1249072652146184192>).

Royte, Elizabeth. 2005. *Garbage Land: On the Secret Trail of Trash*. New York: Little, Brown.

Samson, Melanie. "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, no. 5 (October): 813–830. <https://doi.org/10.1177/0263775815600058>.

Sandlos, John, and Arn Keeling. 2016. “Toxic Legacies, Slow Violence, and Environmental Injustice at Giant Mine, Northwest Territories.” *Northwest Review* 42: 7–21. <https://doi.org/10.22584/nr42.2016.002>.

Savin, Katie, and Laura Guidry-Grimes. 2020. “Confronting Disability Discrimination during the Pandemic.” Hastings Center, April 2, 2020. <https://www.thehastingscenter.org/confronting-disability-discrimination-during-the-pandemic/>

Sayre, Nathan F. 2005. “Ecological and Geographical Scale: Parallels and Potential for Integration.” *Progress in Human Geography* 29 (3): 276–290.

Schendler, Auden, and Andrew P. Jones. 2018. “Opinion: Stopping Climate Change Is Hopeless. Let’s Do It.” *New York Times*, October 7, 2018. <https://www.nytimes.com/2018/10/06/opinion/sunday/climate-change-global-warming.html>.

Schlichting, Inga. 2013. “Strategic Framing of Climate Change by Industry Actors: A Meta-Analysis.” *Environmental Communication* 7 (4): 493–511. <https://doi.org/10.1080/17524032.2013.812974>.

Sharma, Sneha. 2021. “A Moral Politics of Blame.” *Discard Studies* (blog). May 17, 2021. <https://discardstudies.com/2021/05/17/a-moral-politics-of-blame/>.

Shammas, Brittany, and Meryl Kornfield. 2020. “Twitter Deletes Claim Minimizing Coronavirus Death Toll, Which Trump Retweeted.” *Washington Post*, August 31, 2020. <https://www.washingtonpost.com/technology/2020/08/31/trump-tweet-coronavirus-death-toll/>.

Shapiro, Nicholas, Nasser Zakariya, and Jody Roberts. 2017. “A Wary Alliance: From Enumerating the Environment to

Inviting Apprehension." *Engaging Science, Technology, and Society* 3: 575–602. <https://doi.org/10.17351/ests2017.133>.

Sharpe, Christina Elizabeth. 2016. *In the Wake: On Blackness and Being*. Durham: Duke University Press.

Sharpe, Christina Elizabeth. 2020. "seeing protests recede." *Twitter*. Tweets protected.

Sheppard, Eric. 2002. "The Spaces and Times of Globalization: Place, Scale, Networks, and Positionality." *Economic Geography* 78 (3): 307–330.

Shotwell, Alexis. 2016. *Against Purity: Living Ethically in Compromised Times*. Minneapolis: University of Minnesota Press.

Shove, Elizabeth. 2018. "What Is Wrong with Energy Efficiency?" *Building Research & Information* 46 (7): 779–789. <https://doi.org/10.1080/09613218.2017.1361746>.

Shove, Elizabeth. 2020. "Time to Rethink Energy Research." *Nature Energy* 6 (November): 1–3. <https://doi.org/10.1038/s41560-020-00739-9>.

Silver, Ellen. 2018. "Hard Questions: Who Reviews Objectionable Content on Facebook—And Is the Company Doing Enough to Support Them?" Facebook, July 26, 2018. <https://about.fb.com/news/2018/07/hard-questions-content-reviewers/>.

Simangan, Dahlia. 2019. "Situating the Asia Pacific in the Age of the Anthropocene." *Australian Journal of International Affairs* 73 (6): 564–584. <https://doi.org/10.1080/10357718.2019.1657794>.

Simpson, Audra. 2007. "On Ethnographic Refusal: Indigeneity, 'Voice' and Colonial Citizenship." *Junctures: The Journal for Thematic Dialogue* 9 (December): 67–80. <https://junctures.org/index.php/junctures/article/view/66/60>

- Simpson, Audra. 2016. "Consent's Revenge." *Cultural Anthropology* 31 (3): 326–333. <https://doi.org/10.14506/ca31.3.02>.
- Simpson, Michael. 2020. "The Anthropocene as Colonial Discourse." *Environment and Planning D: Society and Space* 38 (1): 53–71. <https://doi-org/10.1177/0263775818764679>.
- Singh, Gerald G., Harriet Harden-Davies, Edward H. Allison, Andrés M. Cisneros-Montemayor, Wilf Swartz, Katherine M. Crosman, and Yoshitaka Ota. 2021. "Opinion: Will Understanding the Ocean Lead to 'the Ocean We Want?'" *Proceedings of the National Academy of Sciences* 118, no. 5. <https://doi.org/10.1073/pnas.2100205118>.
- Slade, Giles. 2006. *Made to Break: Technology and Obsolescence in America*. Cambridge, MA: Harvard University Press.
- Smith, Linda Tuhiwai. 2012. *Decolonizing Methodologies: Research and Indigenous Peoples*. London: Zed Books.
- Smith, Maureen. 1997. *The U.S. Paper Industry and Sustainable Production: An Argument for Restructuring*. Cambridge, MA: MIT Press.
- Smith, Neil. 1993. "Homeless/Global: Scaling Places." In *Mapping the Futures: Local Cultures, Global Change*, edited by John Bird, Barry Curtis, Tim Putnam, George Robertson, and Lisa Tickner, 87–119. London: Routledge.
- Smith, Neil. 2004. "Scale Bending and the Fate of the National." In *Scale and Geographic Inquiry: Nature, Society and Method*, edited by Eric Sheppard and Robert B. McMaster, 192–212. Hoboken, NJ: Wiley.
- Solomon, Marisa. 2019. "'The Ghetto Is a Gold Mine': The Racialized Temporality of Betterment." *International Labor and Working-Class History* 95: 76–94. <http://doi:10.1017/S0147547919000024>.

Somsen, Geert J. 2008. "A History of Universalism: Conceptions of the Internationality of Science from the Enlightenment to the Cold War." *Minerva* 46 (3): 361. <https://doi.org/10.1007/s11024-008-9105-z>.

Speri, Alice. 2020. "NYPD's Aggressive Policing Risks Spreading the Coronavirus." *Intercept*, April 3, 2020. <https://theintercept.com/2020/04/03/nypd-social-distancing-arrests-coronavirus/>.

Spivak, Gayatri Chakravorty. 1988. *Subaltern Studies: Deconstructing Historiography*. London: Routledge.

Srinivasamoha, Ashwini. 2013. "Chennai Waste, Part 1: Informally Tracking the Trash in Mylapore." *Discard Studies (blog)*, September 9, 2013. <https://discardstudies.com/2013/09/09/chennai-waste-part-1-informally-tracking-the-trash-in-mylapore/>.

Stamatopoulou-Robbins, Sophia. 2020. *Waste Siege: The Life of Infrastructure in Palestine*. Palo Alto, CA: Stanford University Press.

Statistics Canada. 2012. "Human Activity and the Environment, 2012." 16-201-X. Minister of Industry, Government of Canada. <http://www.statcan.gc.ca/pub/16-201-x/2012000/parts-parties-eng.htm>.

Stefancic, Jean, and Richard Delgado. 1996. "Outsider Scholars: The Early Stories." *Chicago-Kent Law Review* 71, no. 3 (April): 1001–1013. <https://scholarship.kentlaw.iit.edu/cklawreview/vol71/iss3/17/>.

Steinberger, Julia K., Fridolin Krausmann, and Nina Eisenmenger. 2010. "Global Patterns of Materials Use: A Socioeconomic and Geophysical Analysis." *Ecological Economics* 69 (5):1148–1158.

Stouffer, Lloyd. 1963. "Plastics Packaging: Today and Tomorrow." National Plastics Conference, Chicago: 1–3.

Strasser, Susan. 1999. *Waste and Want: A Social History of Trash*. New York: Macmillan.

Sullivan, Laura. 2020. "How Big Oil Misled the Public into Believing Plastic Would Be Recycled." NPR, September 11, 2020. <https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled>.

Summers, Jane. 2020. Gender Balance Assessment Tool (web-site). Last updated December 17, 2020. <https://jlsunmer.shinyapps.io/syllabustool/>.

Swallow, Julian. 2011. "Bin Line Sales Double Nation Average after Plastic Bag Ban." *Advertiser* (Adelaide, Australia), August 21, 2011. <https://www.adelaidenow.com.au/news/bin-line-sales-double-nation-average-after-plastic-bag-ban/news-story/5110eb1ecbe8e10e3e18d16e11545940>.

Swyngedouw, E., and K. Cox. 1997. "Neither Global nor Local: 'Glocalization' and the Politics of Scale." In *Spaces of Globalization: Reasserting the Power of the Local*, edited by E. Swyngedouw and K. Cox, 137–166. New York/London: Guildford Press.

Thaler, Andrew. 2015. "Three Facts (and a Lot of Questions) about the Ocean Cleanup." *Southern Fried Science*, June 4, 2015. <http://www.southernfriedscience.com/?p=18523>.

Thompson, Michael. 2017. *Rubbish Theory: The Creation and Destruction of Value*. London: Pluto Press.

Thornbeke, Catherine. 2016. "Why a Previously Proposed Route for the Dakota Access Pipeline Was Rejected." ABC News, November 3, 2016. <https://abcnews.go.com/US/previously-proposed-route-dakota-access-pipeline-rejected/story?id=43274356>.

Tuck, Eve. 2009. "Suspending Damage: A Letter to Communities." *Harvard Educational Review* 79 (3): 409–428.

Tuck, Eve, and K. Wayne Yang. 2012. "Decolonization Is Not a Metaphor." *Decolonization: Indigeneity, Education & Society* 1 (1): 1–40. <https://jps.library.utoronto.ca/index.php/des/article/view/18630>.

Tuck, Eve, and K. Wayne Yang. 2014. "R-Words: Refusing Research." In *Humanizing Research: Decolonizing Qualitative Inquiry with Youth and Communities*, edited by Django Paris and Maisha T. Winn, 223–248. Thousand Oaks, CA: SAGE.

Twitter. 2020. "The Twitter Rules." 2020. <https://help.twitter.com/en/rules-and-policies/twitter-rules>.

United Nations Environmental Programme. 2008. "The Stockholm Convention on Persistent Organic Pollutants." Annex C. Geneva: UNEP. <http://www.pops.int/TheConvention/Overview/tabid/3351/Default.aspx>.

United States Bureau of Labor. "Census of Fatal Occupational Injuries (CFOI)—Current and Revised Data." 2019. <https://www.bls.gov/iif/oshcfoi1.htm#rates>.

United States Congress Office of Technology Assessment. 1992. "Managing Industrial Solid Wastes from Manufacturing, Mining, Oil and Gas Production, and Utility Coal Combustion." OTA-BP-O-82. Washington, DC: U.S. Government Printing Office. <https://ota.fas.org/reports/9225.pdf>.

United States Environmental Protection Agency. 1987. *Screening Survey of Industrial Subtitle D Establishments*. Rockville, MD: Westat.

United States Environmental Protection Agency. 1988. "U.S. EPA Report to Congress: Solid Waste Disposal in the United States." Washington, DC: US EPA.

Verghese, Namrata. 2021. "What Is Necropolitics? The Political Calculation of Life and Death." *Teen Vogue*, March 10, 2021. <https://www.teenvogue.com/story/what-is-necropolitics>.

Virtanen, Yrjo, and Sten Nilsson. 2013. *Environmental Impacts of Waste Paper Recycling*. London: Routledge.

Vogel, Sarah A. 2012. *Is It Safe? BPA and the Struggle to Define the Safety of Chemicals*. Berkeley: University of California Press.

Voyles, Traci Brynne. 2015. *Wastelanding: Legacies of Uranium Mining in Navajo Country*. Minneapolis: University of Minnesota Press.

Waring, George Edwin. 1895. *The Disposal of a City's Waste*. North American Review.

Waters, Aaron. 2015. "Environmental Effects of the Single Use Bag Ordinance in Austin, Texas." A report prepared for Austin Resource Recovery and the Zero Waste Advisory Commission pursuant to Recommendation 20150114-003a. June 10, 2015. <https://www.austintexas.gov/edims/document.cfm?id=232679>.

Whyte, Kyle. 2016a. "Is It Colonial Déjà Vu? Indigenous Peoples and Climate Injustice." In *Humanities for the Environment: Integrating Knowledge, Forging New Constellations of Practice*, edited by Joni Adamson and Michael Davis, 102–119. London: Routledge.

Whyte, Kyle. 2016b. "Our Ancestors' Dystopia Now: Indigenous Conservation and the Anthropocene." In *Routledge Companion to the Environmental Humanities*. London: Routledge, forthcoming. <https://ssrn.com/abstract=2770047>.

Whyte, Kyle. 2017. "Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene." *English Language Notes* 55 (1): 153–162.

Wikler, Daniel. 2020. "Here Are Rules Doctors Can Follow When They Decide Who Gets Care and Who Dies." *Washington Post*, April 1, 2020. <https://www.washingtonpost.com/outlook/2020/04/01/ration-ventilators-beds-coronavirus/>.

Wilson, Stiv. 2010. "The Fallacy of Gyre Cleanup: Part One, Scale." *5 Gyres* (blog). July 5, 2010. https://web.archive.org/web/20101025101330/http://5gyres.org/posts/2010/07/05/the_fallacy_of_gyre_cleanup_part_one_scale/.

Winner, L. 1980. "Do Artifacts Have Politics?" *Daedalus* 109 (1): 121–136.

Wittmer, Josie, and Kate Parizeau. 2016. "Informal Recyclers' Geographies of Surviving Neoliberal Urbanism in Vancouver, BC." *Applied Geography* 66: 92–99. <https://doi.org/10.1016/j.apgeog.2015.10.006>.

Women's Earth Alliance and Native Youth Sexual Health Network. 2016. "Violence on the Land, Violence on Our Bodies: Building an Indigenous Response to Environmental Violence." <http://landbodydefense.org/uploads/files/VLVBReportToolkit2016.pdf>.

Wong, Alice. 2019. "The Rise and Fall of the Plastic Straw:" *Catalyst: Feminism, Theory, Technoscience* 5 (1): 1–12. <https://doi.org/10.28968/cftt.v5i1.30435>.

Wong, Steve. 2017. "New World Order." *Recycling Today*, September 6, 2017. <https://www.recyclingtoday.com/article/national-sword-china-plastics-recycling/>.

WWT. 2017. "Getting to Grips With . . . Highway Pollution—WWT." September 6, 2017. [95/SDS/Getting-to-Grips-With-Highway-Pollution/](https://www.wwt.org/95/SDS/Getting-to-Grips-With-Highway-Pollution/).

Wynne, Brian. 1987. *Risk Management and Hazardous Waste: Implementation and the Dialectics of Credibility*. London: Springer.

Wynter, Sylvia. 2003. "Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation—An Argument." *CR: The New Centennial Review* 3, no. 3: 257–337. <https://doi.org/10.1353/ncr.2004.0015>.

Yashadhana, Aryati, Nellie Pollard-Wharton, Anthony B. Zwi, and Brett Biles. 2020. "Indigenous Australians at Increased Risk of COVID-19 Due to Existing Health and Socioeconomic Inequities." *Lancet Regional Health—Western Pacific* 1 (August). <https://doi.org/10.1016/j.lanwpc.2020.100007>.

Yates, Michelle. 2011. "The Human-As-Waste, the Labor Theory of Value and Disposability in Contemporary Capitalism." *Antipode* 43, no. 5 (November): 1679–1695. <https://doi.org/10.1111/j.1467-8330.2011.00900.x>.

Yazzie, Melanie K. 2021. "Traumatic Monologues: On the Therapeutic Turn in Indigenous Politics." *Baffler* 59 (September). <https://thebaffler.com/outbursts/traumatic-monologues-yazzie>.

Zahara, Alex. 2016. "Refusal as Research Method in Discard Studies." *Discard Studies (blog)*. March 21, 2016. <https://discardstudies.com/2016/03/21/refusal-as-research-method-in-discard-studies/>.

Zimring, Carl A. 2005. *Cash for Your Trash: Scrap Recycling in America*. New Brunswick, NJ: Rutgers University Press.

Zimring, Carl A. 2016. *Clean and White: A History of Environmental Racism in the United States*. New York: NYU Press.

Zimring, Carl A., and William L. Rathje. 2012. *Encyclopedia of Consumption and Waste: The Social Science of Garbage*. Thousand Oaks, CA: SAGE.

