

## The Life of Waste

Simone M. Müller

Everything is waste. Irrespective of their value, all materials and living things eventually become obsolete. At the same time, waste is life. Formerly discarded objects come to second life through reuse or recycling. Waste is one of the most complex, contested, and charged objects we humans deal with in our daily lives. The objects, texts, videos, and podcasts in this collection display the life of waste in six chapters. Historian Simone M. Müller shows how humans produce, move, and conceive of waste. Get to know the power of waste, and learn about the different mechanisms that we have found to cope with the trash in our lives.



About the Exhibition



Making Waste



Thinking Waste



Managing Waste



The Power of Waste



Living with Waste



Zero Waste?

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## About the Exhibition

### The Six “Truisms” of the Life of Waste

Everything is waste

Waste is a matter of perspective

Waste needs to be managed

Waste is life

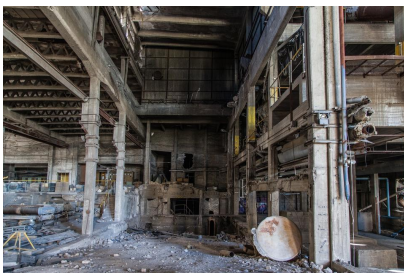
Waste has power

Waste has an expiration date

Waste is one of the most complex, contested, and charged objects we humans encounter in our daily lives. It contains narratives of decay and declension, as well as of resurrection and recovery. Waste is ubiquitous—we cannot avoid running into it one way or another, no matter how hard we try to move waste objects out of sight, to bury and burn them, to dispose of, discard or destroy them. Everything is waste and waste is everywhere.

In our daily routines, we produce about 1.2 kilograms of waste on average. Numbers are steeply rising given that about 99 percent of the stuff we buy we discard within six months. Every year, we dump about 2.12 billion tons of waste, according to 2018 statistics. If we were to put all of this waste onto trucks, they would go around the world 24 times.

Waste is a matter of perspective. What might be a wasteful object to one could easily transform into a useful product for someone else. We reuse and recycle. Waste objects gain or lose value through up- or down-cycling processes.



“Abandoned Factory.” Photograph by Kerttu, 2016.  
<https://pixabay.com/de/verlassenen-fabrik-aufgegeben-fabrik-1513012/>.



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E-waste picker in Agbogbloshie, Accra, Ghana. Photograph by © Kevin McElvaney, 2017.  
<http://kevin-mcelvaney.com/portfolio/agboglobloshie/>.

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“Waste Dump in Brandenburg.” Photograph by Jonas Stuck, 2018.



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Waste is also a matter of our position in life and on this planet. Generally, the higher the income level and rate of urbanization, the greater the amount of solid waste we produce. OECD countries produce almost half of the world's waste, while regions in Africa and South Asia produce the least.

Waste has an agenda and waste exerts power. Processes of waste production, management, and reculturation align with patterns of racial and social stratification. At the same time, waste harms us and the environment. Every year, we dump about eight million tons of plastic into our world's oceans. This marine waste blocks sunlight to plankton and algae, inhibiting their photosynthesis and eventually leading to their death. This creates food shortages for other species. Plastic accumulates in seabirds and marine mammals and migrates up the food chain where, eventually, we consume it through our food. Similarly, nuclear waste may seep into the ground, contaminate drinking water, and cause cancerous growths or genetic mutations for many generations of animal and plants. Waste is contentious and waste is controversial.



Waste

Drawn by *Leo Koppelkamm*, 2014.

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“Sorting of household trash on a ship in Utrecht, 1959.”

Photograph by *Wouter Hagens*, 1959

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“Trash.” Graffiti in Warsaw Poland, 2014.

Photograph by *Paul Sableman*, 2014.

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Since it is impossible to tell the story of waste from a single perspective, or to come up with one all-encompassing definition, I have decided to tell you the story of waste through six truisms. They display waste's myriad facets as well as the story's complexity. Each truism corresponds with one of the chapters of this virtual exhibition, without being exclusive to it. Each offers you a way to navigate the life of waste. Since I see waste's life on a circular orbit, you can explore the chapters in any order you like. Whatever you do, be sure to play a round of *Garbage Dreams*.

#### Websites linked in image captions:

- <https://pixabay.com/de/verlassenen-fabrik-aufgegeben-fabrik-1513012/>
- <http://kevin-mcelvaney.com/portfolio/agboglobshie/>
- <http://www.deutsches-museum.de/de/ausstellungen/mensch-umwelt/umwelt/wachstum/>

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## About the Author



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Dr. [Simone M. Müller](#) is Project Director and Principal Investigator of the DFG Emmy Noether Research Group “[Hazardous Travels: Ghost Acres and the Global Waste Economy](#)” at the [Rachel Carson Center for Environment and Society](#), Munich. She works at the intersection of globalization studies, economic and social history, and environmental humanities. Her research interests range from the international trade in hazardous waste material and the intellectual history of economic ecological thinking, to green city concepts and the study of ocean space. She has received numerous awards and fellowships, among them from the Smithsonian Institution, the Science History Institute, and the University of Pennsylvania. Simone is a member of the Young ZiF (Center for Interdisciplinary Research) of the University of Bielefeld and in 2017 was nominated as one of the leading female academics in her field by the German Research Foundation (DFG) and the Bosch Foundation. She can be reached at [simone.mueller@rcc.lmu.de](mailto:simone.mueller@rcc.lmu.de).

## Acknowledgments

This exhibit is intricately linked as well as deeply indebted to the Rachel Carson Center’s Environment and Society Portal. It was the portal’s director, Kim Coulter, who first planted the inspiration for this exhibition based on the Portal’s extensive material. Intrigued by the idea, I sat endless hours sorting and sifting, reading and watching everything that the Portal had to offer on waste. Ruhi Deol, the Portal’s research associate, helped me in continuous, deep and engaged conversations to translate my ideas into a curated, digital assemblage of knowledge on waste. She did not tire to reach out to authors and publishers about open access publication rights and gracefully accepted when my scholarly thirst carried me beyond what the Portal initially had to offer. I owe great thanks to the archival treasures of the Portal as I do to the people that breathe life into it and that believe in the merits of digital scholarship! My thanks also go out to Wanling Hu and Christina Lennartz, my research assistants, who have not tired reading, commenting, researching and cutting as well as my team at Hazardous Travels, Ayushi Dhawan, Maximilian Feichtner and Jonas Stuck who have graciously shared photographs from their research for this exhibition. Still, while the exhibit has been touched and shaped through the context of the Rachel Carson Center, its staff and fellows in more ways than I can tell, all the exhibition’s flaws and short-comings are entirely mine.

## How to Cite

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- <https://www.hazardoustravels.carsoncenter.uni-muenchen.de/index.html>
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## Making Waste

Waste has many origins. Numerous processes and facilities—construction sites, hospitals, factories, military bases, discarded electronics—generate waste at any point in the commodity chain. Labeled as nuclear waste, medical waste, or pharmaceutical waste, the material refers to the economy that produced it. Municipal Solid Waste (MSW), more generally known as garbage or trash, consists of the everyday items we use and then throw away. It represents one of the largest sectors in overall waste production globally. Waste is not existential. Waste is anthropocentric. What I mean by this is that waste is not an object that simply *is*—waste is an object that we humans create.



A still from the movie *Yellow Cake*.

© 2010 Um Welt Film Produktionsgesellschaft

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“Discarded Childhood.”

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We make waste through our industry, our agriculture, and our methods of consumption. We produce trash constantly in our modern lives, throwing away the wrapping of our lunch, disposing of (un-)read newspapers, discarding batteries, or changing our baby’s diaper. The waste of a car’s assemblage is scrap metal; that of medical agents, toxic wastewater. When farmers produce meat to feed us, they create animal waste. When we travel by land or air, we produce air waste, better known as CO<sub>2</sub>. In his movie *Yellow Cake: Die Lüge von der sauberen Energie* on the uranium industry’s waste production, Joachim Tschirner reminds us that even when turning on a light bulb, we are creating waste.

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“Oh.”

Drawn by *Leo Koppelkamm*, 2014.



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“A bird sanctuary near a saltwater lake somewhere in the desert.... We didn’t see any birds on our trip. But we sure did see plenty of plastic bags.” From *The Misunderstanding: Waste*, Leo Koppelkamm, 1997.

We are taught to be wasteful by our families, our peers, and society at large. In her book, *Waste and Want*, Susan Strasser illustrates how Americans—today among the top five producers of trash per person, according to 2016 statistics—have learned to be wasteful in the aftermath of World War II. During a period of golden economic growth between 1945 and 1973, industrial countries all around the world experienced a tremendous increase in per capita income that accompanied an exponential rise in per capita trash.

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In 2016, the United States, China, Brazil, Japan, and Germany were the top five trash producers. If you are curious to learn about your own city's waste production, consult the [Waste Atlas](#), a crowdsourced free-access map, that visualizes solid waste management data across the world.



*Waste Atlas* is a crowdsourcing free access map that visualizes municipal solid waste management data across the world for comparison and benchmarking purposes.

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Design and production also changed after World War II. In the Western world in particular, consumer goods became more readily available. Designers often used new materials for these goods, such as synthetic chemicals, which has made for not only larger, but also more challenging, waste streams. From the 1970s, new hazardous materials entered the waste stream. Municipal waste, for instance, now included more paper, plastics, toxic chemicals, and durable synthetic materials. These new materials replaced food wastes and ash as major components and made it necessary to come up with a new legal category in waste management and environmental protection: *hazardous waste*.

Over time, the creation of waste has also become increasingly industrially determined through a built-in expiration date referred to as “planned obsolescence.” Planned obsolescence is most visible in, but by no means exclusive to, the electronics sector. Almost every other consumer product sector today works with planned

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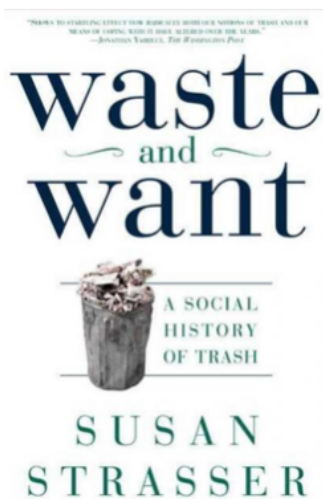
obsolescence. Each new mobile phone, music player, laptop computer, refrigerator, car or any other consumer device you care to think of is “made to break,” as described in the title of Giles Slades’ award-winning book. Its waste ends up in places such as the [e-waste dump of Agbogbloshi, Ghana](#).

Listen to Sean Kheraj’s podcast on “[E-Waste and Obsolescence](#)” below to learn more about the phenomenon.

The original virtual exhibition includes Sean Kheraj’s podcast “Nature’s Past Episode 7: E-Waste and Obsolescence.” Click [here](#) to listen to the podcast online. 15 June 2009. 39:22 min.



The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF. (See screenshot below)



**Strasser, Susan. *Waste and Want, A Social History of Trash*. New York: Henry Holt and Company, LLC, 1999.**

Before the twentieth century nearly everything was reused as goods, and money was scarce. Nowadays, Americans are hooked on convenience, disposability, fashion, and constant technological change—mass consumption has led to waste on a previously unimaginable scale. *Waste and Want* recaptures a hidden part of social history, illustrating that what counts as trash depends on who’s counting and what we throw away defines us as much as what we



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**Websites linked in this text:**

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- <http://www.atlas.d-waste.com/>
- <http://www.environmentandsociety.org/exhibitions/life-waste/living-waste#AGBOGBLOSHIE>
- <http://www.environmentandsociety.org/mml/episode-7-e-waste-and-obsolence>
- <http://niche-canada.org/2009/06/15/natures-past-episode-7-e-waste-and-obsolence/>
- <http://www.environmentandsociety.org/exhibitions/life-waste/making-waste>

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- <http://www.atlas.d-waste.com/>

## Thinking Waste

Waste is a question of perspective. As anthropologist [Mary Douglas](#) put it, dirt is “matter out of place.” Within social systems, waste represents the inappropriate, the rejected, and the excluded. Waste is what we want to discard. Differences exist in terms of what items a society or individuals deem inappropriate, and when. Second-hand stores, for instance, live off the idea that what one person no longer wants, another may desire. Starting in the 1970s, various countries around the world established industrial waste exchange programs. Their idea is also based on the mutability of waste objects—what one company may look at as waste, another might still find useful for its production. For instance, a chemical company’s castoff fluoride compounds may come in handy for another company’s production of toothpaste. Waste owns a culturally, socially, and also technologically determined mutability.



A singular waste object at an abandoned waste dump in Brandenburg.

Photograph by Jonas Stuck, 2018.

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At the same time, waste is contentious beyond its cultural denaturalization, social rituals, symbolic meanings, and technological appropriateness. Waste objects marry cultural conceptions with economic realities and with biological and chemical processes of permeability, alternation, and vulnerability. It is easier to be wasteful when you have the economic means to live a luxurious lifestyle. So far, nobody has found a legal platform for the reuse of nuclear waste. Similarly, outdated pesticides in corrosive containers present a health and environmental hazard no matter how you look at it.

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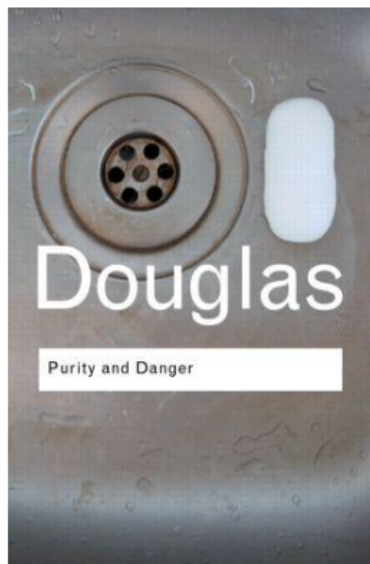
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Waste used in a normative sense entails a category of moral judgment. We should not waste—not our time, our money or our lives. Waste is at the heart of so many moral economies that it is difficult to find any sense in which it is not bad, argues [Gay Hawkins](#). At the same time, in modern commodity cultures wasting also entails a sense of material abundance and of freedom—the freedom to waste, to discard objects that are still perfectly useful. Advertising often plays on this very notion of freedom—the liberty to consume at will—wherever and, now with online shopping, also whenever. Click through the gallery below to learn more about how we “think” waste.

The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF (See screenshot below).



**Douglas, Mary. *Purity and Danger, An Analysis of Concepts of Pollution and Taboo*. Routledge & Kegan Paul, 1966.**

The idea of purity is a central question for every society. Mary Douglas explains its relevance and its wide-ranging impact on our attitudes, values, cosmology, and knowledge. The book has been hugely influential in many areas of debate—from religion to social theory. But perhaps its most important role is to offer each reader a new explanation of why people behave in the way they do. (Adapted from Routledge Taylor & Francis)



Waste objects can also form entire landscapes. They can be wastelands as well as wasted lands. Think of the island of floating plastic in the middle of the Pacific or underground atomic waste storage sites, the wastewater pools of mines or those waste conglomerates collected in landfills.

The original virtual exhibition includes the [vimeo short film “Ilha das Flores \(Island of Flowers\)”](#) by Filipe Bessa. A short film directed by Jorge Furtado (1989). The ironic, heartbreaking and acid “saga” of a spoiled tomato. 12:33 min. (Screenshot below)



Waste can take many forms, from your broken computer, the empty milk container or your torn T-shirt, to a container of outdated chemicals, a pond of oil sludge or an outdated ocean carrier ready for scraping. Director Rahmin Bahramin revisits the life of a particular waste object from an environmental perspective: the life of a plastic bag. Similarly, the short film *Ilha das Flores* centers its narrative on a spoiled tomato as it moves through the Brazilian food chain.

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“Waste Dump.”

Photograph by Jonas Stuck, 2018.



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These waste(d) lands are never still. They change surely—albeit slowly—over time. When we waste, we are never just wasting on our own resources, but those of future generations as well.

An impressive example of a transient waste space is Fresh Kills landfill in New York, as Martin Melosi explores in his article, “[Fresh Kills: The Making and Unmaking of a Wastescape](#)”. The former salt marsh is today the largest human-engineered formation in the world. Over its long history, it has changed from landfill to cemetery to park. Fresh Kills opened its doors to New York City’s garbage in 1948. By the mid-1980s, it was New York’s only landfill. In March 2001, city officials gave in to local protests and closed down the landfill with great fanfare—only to reopen it some months later after the Al-Qaida attacks in 2001, to receive human remains and debris from the Twin Towers. After 9/11, as well as being a landfill, Fresh Kills equally became a burial place and

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guardian of many a human story that will likely never be forgotten.



“Fresh Kills Landfill is on the western edge of Staten Island.” Photograph by Matthew Trump. Figure 1 in Martin V. Melosi’s article, “Fresh Kills: The Making and Unmaking of a Wastescape .”

Photograph by Mathew Trump, via Wikimedia Commons.



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- <https://www.routledge.com/Purity-and-Danger-An-Analysis-of-Concepts-of-Pollution-and-Taboo/Douglas/p/book/9780415289955>
- <http://www.environmentandsociety.org/mml/ethics-waste-how-we-relate-rubbish>
- <http://www.environmentandsociety.org/exhibitions/life-waste/thinking-waste>
- <https://vimeo.com/53862971>
- <http://www.environmentandsociety.org/perspectives/2016/1/article/fresh-kills-making-and-unmaking-wastescape>

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- <https://rowman.com/ISBN/9780742530133/The-Ethics-of-Waste-How-We-Relate-to-Rubbish#>
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## Managing Waste

Waste calls us to action—we cannot let it accumulate. Eventually, we notice and smell the presence of heaps of trash and consumer durables and we feel we need to do something about it: we burn it, bury it, dispose of it, discard it, reuse it, or recycle it. In short, we try to take care of it.

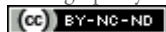
These myriad practices transform the waste object as well as our relationship to it. On the one hand, they reallocate value to trash. Recycling, for instance, subjects waste to the laws of profit and exchange and creates new markets. When you donate the clothes you no longer want instead of trashing them, charities usually sell the best items, usually a small number, at their thrift shops. The rest they sell to textile recyclers, who then recycle your clothes into cleaning cloths. Alternatively, textile recyclers sell the clothes to other countries around the world. A donated dress from Japan may in this way end up at a second-hand store in Israel. On the other hand, managing waste practices fundamentally redefines how waste figures in our connection with our body. Take, for instance, the anti-litter campaigns that started in the late 1960s in several Western countries. They transformed trash from matter out of place into morally unsettling evidence of the collapse of civic obligation, according to Gay Hawkins.

The campaigns initiated a major shift from disposal as elimination to disposal as a process of waste management. Recycling, composting, and reusing inaugurated new habits and rituals. Fulfilling their civic duty, people started handling their empty bottles differently from their old newspapers. As they rinsed and sorted their trash, they became environmentally aware and, ideally, careful waste managers. “Keep Britain Tidy” is just one of the many campaigns that emerged during that time. After more than 50 years, the slogan is still used to educate the British to litter less.



Berlin induces its citizens to proper waste disposal through canny slogans on its waste containers.

Photograph by Simone Müller (author), 2015.



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Philadelphia encourages the public to keep drains clean and unclogged.

Photograph by Simone Müller, 2018



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Berlin, in turn, uses funny slogans on their waste containers to make disposing fun. Philadelphia, similarly, marks its drains with quaint images of water animals telling its citizens which way the waste flows.

Müller, Simone M. “The Life of Waste.” *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

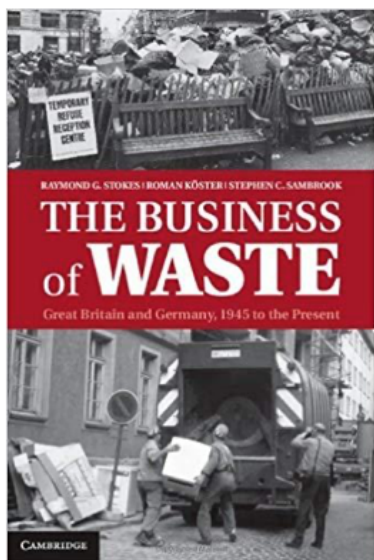
**Chapter:** Managing Waste

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Public cleaning initiatives and waste management more generally vary across countries and communities. In *The Business of Waste*, Raymond Stokes, Roman Köster, and Stephen Sambrook explain the differences in waste management in Great Britain and West Germany after World War II. The authors illustrate how the two countries took profoundly different paths from low-waste to throwaway societies, and more recently toward the goal of zero waste. Bringing in a perspective from Brazil, Jutta Gutberlet extrapolates the particularities of waste management from the Global South—a world region where people’s lifestyles are not yet “cocooned in the consumption bubble,” she says. Quite the contrary, informal and cooperative recyclers in Brazil, the *cartadores*, have developed effective practices and policies supporting the circular economy, sufficiency, and solidarity.

The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF (View screenshot below).



Stokes, Raymond, Roman Köster, and Stephen Sambrook *The Business of Waste: Great Britain and Germany, 1945 to the Present*. Cambridge: Cambridge University Press, 2013.

The rise of consumerism in the UK and West Germany after 1945 led to a mass production of garbage. The countries are similar, but took different paths from low-waste to throwaway societies, and recently, towards the goal of zero-waste. The authors explore the relationship between public and private provision in waste services, the role of government, and



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Although we cannot let trash accumulate, we rarely want it nearby when it does. Trash seldom stays close to its place of origin. Rather, waste has an inbuilt mobility as we try to move the material out of sight. We throw it into bins, flush it down the drain into the sewage system. Prior to filter systems, industries built higher chimneys to reduce local emissions by transporting their air waste further away. Today, plans of opening up a new waste disposal facility, be it an incinerator, a sewage-treatment plant or a landfill, are often accompanied by cries of NIMBY (“not in my backyard”). Concerned citizens point out that the waste disposal may have detrimental effects on the neighborhood. Finding the right disposal spot has proved particularly difficult for nuclear waste, as this 1985 quote from an anonymous Earth First!er demonstrating against the Canyonlands Nuke Dump illustrates:

We are here to make it clear that there are many people, of which we are but a handful, unwilling to abide by your demented “decision-making process” which continues to consider establishing a nuclear waste dump in one of the most fragile and beautiful places on the planet, thereby killing it and threatening everything around and downriver from it.

— Anonymous Earth First!er in *Earth First 5, no. 4*

Over the years, the rather selfish cry NIMBY—not in my backyard—has transformed into NIABY—not in *anyone’s* backyard—as activists have worked to establish a strong solidarity between communities and countries all across the world. Little did these debates acknowledge, however, that the trash has to go *somewhere*. Now.

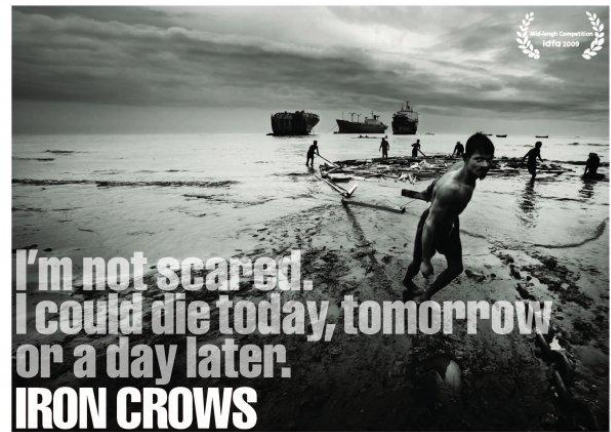
While most of our trash is managed close to its source, starting in the 1960s and 1970s, some of the material began traveling over large distances to reach its disposal grounds. Communities started hauling their trash to the next county, the next state, the next country, and even the next continent. About 10 percent of the hazardous waste that industrial countries produce crosses nation-state borders for its disposal, Jennifer Clapp documents in her book *Toxic Exports*. While much of this waste trade happens within OECD countries, some goes to countries of the global South. Not all schemes are legal. Most are ethically doubtful. The importing countries may offer cheaper deals, but do not always own facilities to dispose of the material in an environmentally sound or healthy manner. They, in turn, face a choice between being poor and being poisoned. Since the 1990s, activists opposing the trade have cried out “Garbage Imperialism” and bemoaned a “recolonization” of the world through trash.

The research group [Hazardous Travels: Ghost Acres and the Global Waste Economy](#) investigates the structures and dynamics of this global waste economy through case studies from the United States, Germany, India, and Ecuador. Follow them on [twitter](#) if you want to learn more about their research.



Extract from the movie poster for *Eisenfresser/Ironeaters*.  
© 2007, Lemme Film

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A still from the movie *Iron Crows*

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Watch the movies *Eisenfresser [Ironeaters]* or *Iron Crows* to learn about ship breaking—one of the world’s most prominent examples of waste relocation. Since the 1980s, the world’s largest ship breaking industry has been situated at India’s West coast, and by now moved up to Bangladesh. Here, people recycle industrial countries’ shipping fleets for little money. This business is highly controversial. Shipbreakers work with their bare hands and often little protection gear to break the ships apart. Their work is dangerous and their health impaired, and refuse often seeps directly into the ground. Yet, every single part of the ship is reused and recycled, from the iron body parts to the asbestos and interior design elements it contains. The industry, in turn, fights hard to shed its bad image.



Shipbreaking at Alang shipyard, Gujarat India.

© 2018 Ayushi Dhawan

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At the market in Alang, vendors sell everything usable from the dismantled ships, ranging from cutlery and antiques to lifeboat provisions.

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In the end, we are always on the lookout for what Joel A. Tarr terms the ultimate sink in his book *The Search for the Ultimate Sink*, the optimal solution for the disposal of our trash. Yet, for some materials, such as nuclear waste, there is no such thing as the ultimate sink. As you accompany filmmaker Edgar Hagen on his quest around the world to find “the safest place” for the remnants of nuclear activity, consider possible alternatives. Should we not be able to find other solutions ?

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- <http://www.environmentandsociety.org/node/7547/>
- <http://www.environmentandsociety.org/exhibitions/life-waste/managing-waste>
- <http://www.environmentandsociety.org/mml/earth-first-5-no-4>
- <http://www.environmentandsociety.org/mml/toxic-exports-transfer-hazardous-wastes-rich-poor-countries>
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- <http://www.environmentandsociety.org/mml/journey-safest-place-earth>
- <http://www.environmentandsociety.org/exhibitions/life-waste/zero-waste>

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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## The Power of Waste

Waste relates to power in three important ways: First, it aligns with many power structures of our world, whether they relate to race, class or gender, or exist between countries and world regions. Second, waste can be an empowering feature, as the chapter on living with waste illustrates. Third, waste in itself is also a powerful object. Waste is neither passively disposed of or discarded, nor easily transformed into a different state of being through up-cycling or down-cycling, reuse or recycling. Whether we produce, move or discard waste, it comes with side effects, sometimes even unanticipated consequences. We understand this power best when we think about how waste and waste pollution infiltrates our bodies, our genes, how it threatens our health and damages the environment we live in. Waste's *life* is what constitutes its power.



“Rust-colored runoff from the abandoned quicksilver ghost town of New Idria, CA.”

Photograph by Matthew Lee High, 2007. <https://www.flickr.com/photos/matthigh/2273483382/in/photolist-4sQ944-4s...>



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Today, many scholars treat waste as a matter of perspective. Yet, waste is also materiality—*living* or at least

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changing materiality. This materiality may be relatively harmless or it may be hazardous to our health and environment. It may be yesterday's newspaper or the toxic byproduct of manufacturing, farming or hospitals. The material can be liquid, solid, sludge or gas and it can contain chemicals, heavy metals, radiation, pathogens or other toxins that—if handled poorly—pose a substantial threat to our health and environment, as well as that of future generations.

In many countries around the world, landfills are the largest source of human-generated methane—a powerful greenhouse gas—alongside carcinogens such as benzene or vinyl chloride. Leachate from these places often contains a toxic cocktail and despite elaborate precautionary measures including soil covers, synthetic liners, and leachate collection systems, landfills can easily contaminate groundwater or surface water in the area.



General view of a section of the waste disposal facilities at the Dow Chemical Company plant in Midland, Michigan, USA, 1952.

Photograph from the Dow Chemical Company Historical Image Collection, Box Oversized Plants 1, Science History Institute, Philadelphia. <https://digital.sciencehistory.org/works/cc08hg17w> . No known copyright.



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Waste incinerators do not provide a clean alternative. They transform trash into heat and ash and create an air pollution stream of harmful compounds that may contain carbon dioxide, nitrous oxide, ammonia or nitrogen oxides. In the end, waste incinerators also produce waste, such as incinerator ash, which in turn needs to be disposed of. And even the latest hype in waste studies, a plastic eating bacterium, *Ideonella sakaiensis*, emits a significant amount of CO<sub>2</sub>.

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Drawn by *Nika Korniyenko*, 2014. This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Artist *Nika Korniyenko* explores the surreal and unimaginable consequences of nuclear waste in this cartoon—showing how a waste leak may render a glowing deer, 2014.

Despite the legal distinction between hazardous and nonhazardous waste, there is no such thing as *harmless* waste. Municipal solid waste may not pose problems when disposed of in a leachate-proof landfill, but it does pose a problem when dumped in pristine wetlands. All waste streams need to be monitored, some over a very long period of time. Artist [Nika Korniyenko](#) engages with the remnants of atomic energy production. Through leakages, which could possibly continue up to one hundred years into the future, radioactive waste contaminates first the soil, then the plants, and then the animals feeding on them. Moving up the food chain, radioactivity eventually reaches the human body, which is “the last sink,” according to Kate Brown. Seldom acknowledged, human bodies are as much a repository, a dump of human-made waste products, as are rivers, groundwater, soils, plants, and animals. Explore the work of the [Deadly Dreams](#) research network to learn more about the history of these toxins.

Through its own power, its ability to harm humans and the environment they live in, waste gives power to

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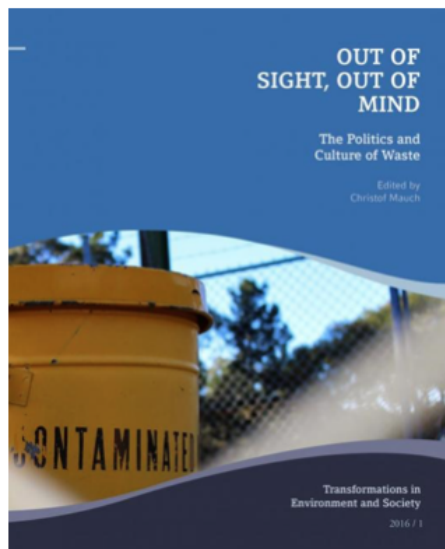
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others. It enforces existing demarcation lines between people, sexes, regions, and countries. How to deal with the toxicity and pollution aspect of waste has long created repeated and substantial controversies that tie in with fervent debates about environmental racism and justice. Think, for instance, about pollution disasters such as Love Canal, where an entire neighborhood in the United States was built upon a former (forgotten) waste dump that then resurfaced and made people sick. Another example is that of the mercury crises in the 1960s and early 1970s in Japan, Sweden, Canada, and the United States, where disposed mercury resurfaced through the aquatic food chain.

Often, it is the underprivileged who suffer the most. Waste is not an equalizer—it strengthens existing power relations, reinforcing social and global inequality.

The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF (View screenshot below).



**Brown, Kate. "The Last Sink: The Human Body as the Ultimate Radioactive Storage Site." In: "Out of Sight, Out of Mind: The Politics and Culture of Waste," edited by Christof Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 1, 41–47.**

Brown examines health effects of radioactivity, little acknowledged by governments, who instead prefer to focus on "exposures" and isotope measurements in the environment. She focuses on Ozersk, the town with Russia's first plutonium plant and how people are also a repository of



Experiences of exposure to toxicity and pollution, however, can also be an empowering resource for people. The guerrilla narrative project [Toxic Bios](#) collects stories from people all around the world who have decided to speak up. Listen to their stories of emancipation. Similarly, Ecuadorian communities in the Amazon region have taken the project of [bioremediation into their own hands](#) to clean up after almost five decades of oil exploration.



*Los Afectados*, the affected ones, have been living downstream of the oil production of the American company Texaco for half a century in the Oriente of Ecuador - their decades-long struggle for compensation and clean-up is ongoing. This image shows Donald Moncayo of Toxitours in front of one of the almost 800 oil pits left behind.

Photograph by Maximilian Feichtner, 2018.



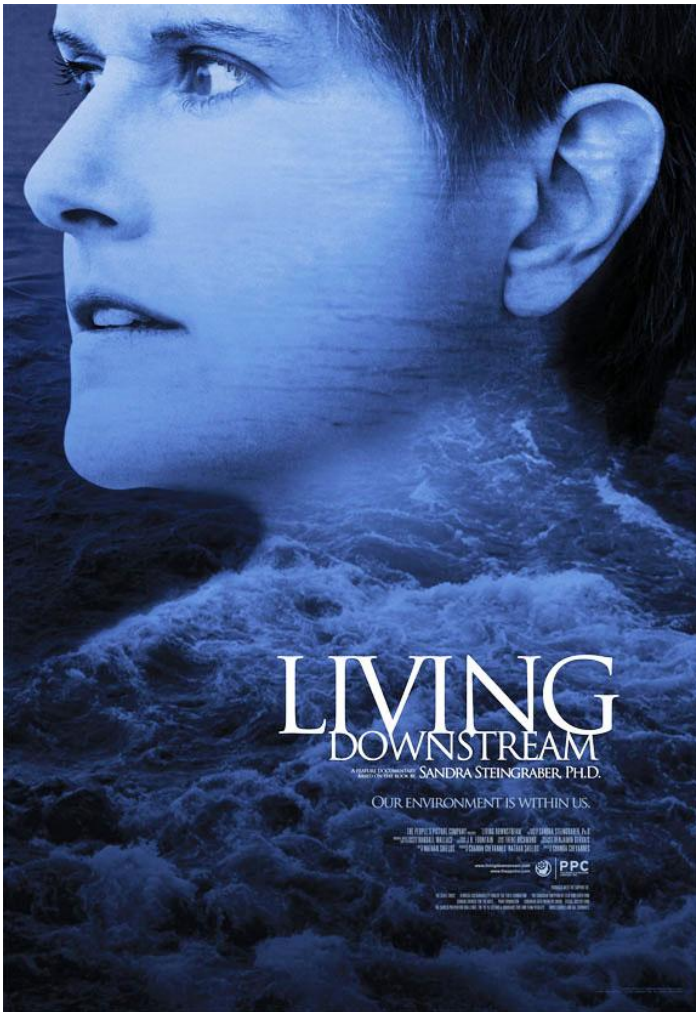
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Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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Poster for the film *Living Downstream*.

Poster design by Adam Hunt; Steingraber photo by Benjamin Gervais  
Poster © The PPC

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Lastly, the movie *Living Downstream* captures Sandra Steingraber's emancipatory struggle against pollution and big corporate industries. Pollution disasters exhibit how essential it is to take precautionary care, and how helpless we often remain when we no longer suspect that which we removed to be "out of sight." Follow Sandra Steingraber's fight against invisible toxins in our immediate environment as a result of unregulated, ill-regulated or illegal waste dumping.

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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### Websites linked in this text:

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## Living with Waste

Waste is a fundamental indicator of life. As much as the acrid, black smoke emanating from industrial smokestacks in the nineteenth century indicated that business was good, the existence of garbage shows that life is present. Biologically speaking, it is only when we are dead that we stop producing waste. Even as we discover economically profitable reuses for waste objects, we continue to produce more—it seems that we cannot function without making at least some waste. Film director John Webster comically and drastically captures this in his documentary *Recipes for Disaster*, which follows his own little family on a year-long journey on an oil-free diet. Future archeologists may go through landfills to learn about today's socialization and play “waste detective” as Christof Mauch writes in his introduction to the *RCC Perspectives* issue “[Out of Sight, Out of Mind: The Politics and Culture of Waste](#) .” Already today, artists, anthropologists and social workers visit waste sites to document life and human-waste interaction.



“Mohammed Camara, a waste recycler at Agbogbloshie, Ghana, the world’s largest e-waste dump, daily exposes his health to the toxic fumes from burning malfunctioning USB cords and other electronic materials to get to the copper inside.”

© 2013 Kevin McElvaney. <http://kevin-mcelvaney.com/portfolio/agbogbloshie/> .

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Although landfills are usually located far from human sight, they are not devoid of human life, let alone non-human life. There are the landfill workers, whose job it is to keep the trash as compacted and orderly as possible. They use heavy equipment, such as bulldozers or tractors, to compact the garbage and distribute it evenly. They sometimes also spray the layers of garbage with water to keep dust from blowing around. Waste workers also greet us at the gate of a recycling facility, inspect the load for banned materials, such as chemicals and tires, and generally help us sort our trash. Then, there are the scavengers—those people who go through the trash at the waste dump to see if there are still valuables and recyclable objects to be found. They are the *catadores* and *cartoneros* of Brazil and Argentina, or the scavengers of e-waste at Agbogbloshie in Ghana who have found their own way to live with trash.

Müller, Simone M. “The Life of Waste.” *Environment & Society Portal, Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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A family in Guatemala City survives by gathering hundreds of used plastic containers. They classify each of them and even separate them by size. Other families collect only cardboard or tin/aluminum cans and few collect all of them.

Photograph by byroN José sun, 2013.

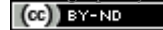
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“Cardboard...” This man has collected cardboard to sell to a recycling center at Bacolod City, Philippines.

Photograph by Brian Evans, 2018.



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Engage with the filmic and artistic works of photographer [Kevin McElvaney](#) (Agbogbloshie), film directors Sean Walsh (*Hauling*), [Andrew Garrison](#) (*Trash Dance*), [Marcos Prado](#) (*Estamira*), Marco Pasquini (*Maputo Dancing Dump*) and Ernesto Livon-Grosman (*Cartoneros*), or artist [Vik Muniz](#) to learn more about “waste people.” The sources assembled in this chapter may give you a different understanding of those living and working at a landfill.

Living with waste poses many challenges. It can induce damage to the environment and pose health risks. At the e-waste dump at Agbogbloshie, Ghana, for instance, waste workers use their bare hands to recycle copper. Daily, they expose their health to the toxic fumes from burning malfunctioning USB cords and other electronic materials, to get to the copper inside. Similarly, Marcos Prado’s movie *Estamira* —about a 63-year old woman who suffers from schizophrenia and has for the past 20 years lived and worked at Brazil’s largest waste dump—may give you a sense of the harshness and strain that our bodies are subjected to because of waste.

Other sources in this collection, in turn, illustrate that living with waste can also exert a sense of belonging. Contrary to cultural theory distinguishing waste as the rejected that produces a sense of moral failure, some artistic documentations unearth a distinct sense of pride felt by those who live with waste. Take Vic Muniz’s movie *Wasteland*, for instance, which tells the stories of Suelem and Magna. Both women are waste pickers and express pride in their work. They provide for their families in a way that creates honor, not humiliation. They are

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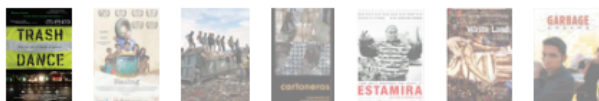
cartadores—not prostitutes, or tricksters at the Copacabana, and not involved in drug trafficking. Similarly, Tiaõ, the young and charismatic president of ACAMJG (the Association of Recycling Pickers of Jardim Gramacho) feels the call to leadership through his relationship with waste. Inspired by the political texts he finds in the waste, he successfully fights to improve working conditions. These well-crafted examples strive to challenge a sort of institutional racism that sees waste workers at the bottom of the human food chain.

The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF (View screenshot below) .



**Garrison, Andrew. *Trash Dance*. Boston, MA: Andrew Garrison/PBS International, 2012. Color, 68 min.**

Choreographer Allison Orr finds beauty and grace in garbage trucks, and in the unseen men and women who pick up our trash. Filmmaker Andrew Garrison follows Orr as she rides along with Austin sanitation workers on their daily routes to observe and later convince them to perform a most unlikely spectacle. On an abandoned airport runway, two dozen trash collectors and their trucks deliver—for one night only—a stunningly beautiful and moving



Waste can also illustrate (trans)formative power on people. The movie *Maputo Dancing Dump*, for instance, uncovers the garbage dump as a creative space. Taking music and rhythm from African-American communities, young men at the dumpsite in Mozambique create hip-hop dance groups in the midst of collections of trash. Similarly, in *Trash Dance*, choreographer Allison Orr finds beauty and grace in the garbage trucks of Austin and, in a one-night spectacle, turns the unseen men and women who pick up the city's trash into dancers. In these portrayals, the waste people are no longer at the end of the commodity chain, but are transformed by a deep, vital strength of the waste spaces they inhabit.

Finally, in his piece "Onions and Tires in Sodom and Gomorrah," Oliver Schwab takes us back to the silences and subtleties that are part of the stories of these waste people, too.



Burning tires to scavenge the steel belt wire.

© 2015 Oliver Schwab

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Recyclers at Agbogbloshie burn to scavenge the steel belt wire.

With a high proportion of poor and socially disadvantaged residents, the e-waste dump Agbogbloshie has gained the nickname "Sodom and Gomorrah," and is notorious for its high crime rate. Most people come from the rural areas of Ghana in search of a future in the urban agglomeration of Accra. Many are stuck in Agbogbloshie. In June 2015, hundreds of people died in Agbogbloshie as a result of a flood and fire in one of the neighborhoods. Many lost their homes. In response to this disaster on 3 June, the municipality cleared the neighborhood by sending a massive police presence equipped with armored vehicles and automatic weapons. Agbogbloshie is as much a social tragedy as it is an environmental one.

Müller, Simone M. "The Life of Waste." *Environment & Society Portal, Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Living with Waste

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### Websites linked in this text:

- <http://www.environmentandsociety.org/mml/recipes-disaster>
- <http://www.environmentandsociety.org/perspectives/2016/1/out-sight-out-mind-politics-and-culture-waste>
- <http://kevin-mcelvaney.com/>
- <http://trashdancemovie.com/>
- <http://www.zazen.com.br/new-page-1/>
- <http://vikmuniz.net/>
- <http://www.environmentandsociety.org/mml/estamira>
- <http://www.environmentandsociety.org/node/7352>
- <http://www.environmentandsociety.org/exhibitions/life-waste/living-waste>
- <http://www.environmentandsociety.org/mml/maputo-dancing-dump>
- <http://www.environmentandsociety.org/mml/trash-dance>

### Websites linked in image captions:

- <http://kevin-mcelvaney.com/portfolio/agbogbloshie/>
- <https://www.flickr.com/photos/byronjsun/11539932444/in/album-72157638996427266/>
- [http://trashdancemovie.com/?page\\_id=448](http://trashdancemovie.com/?page_id=448)
- <http://www.environmentandsociety.org/node/7374/>
- <https://www.imdb.com/title/tt1531677/>
- <http://www.environmentandsociety.org/node/7285/>
- <http://www.suttvuess.com/>
- <http://www.environmentandsociety.org/node/7189/>
- <http://www.der.org/films/cartoneros.html>
- <http://www.environmentandsociety.org/node/6073/>
- <http://www.zazen.com.br/new-page-1/>
- <http://www.environmentandsociety.org/node/4057/>
- <http://nelson.wisc.edu/tales/festivals/schedule2012.php#W>
- <http://www.environmentandsociety.org/node/7352/>
- <http://www.garbage dreams.com/>
- <http://www.environmentandsociety.org/node/6066/>

## Zero Waste?

Waste has an expiration date. My last “truism” about the life of waste points to the phenomenon where, in today’s era of mass consumerism and throw-away culture, a rising storm of voices is calling for radical changes in our littering behavior and our consumption and production patterns. Actors from all levels, from the municipal to the national and international level, as well from the individual to the corporate level, are engaging with technological solutions as well as human behavioral engineering practices. They all broadly aspire to the idea of “zero waste,” although this may mean different things in different contexts. Explore the *RCC Perspectives* issue “[A Future without Waste? Zero Waste in Theory and Practice](#)” to learn more.

The original virtual exhibition includes the TEDx Talk “How the oceans can clean themselves” by Boyan Slat. Click [here](#) to view the talk online. 11:21 min. (View screenshot below)



Müller, Simone M. “The Life of Waste.” *Environment & Society Portal, Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

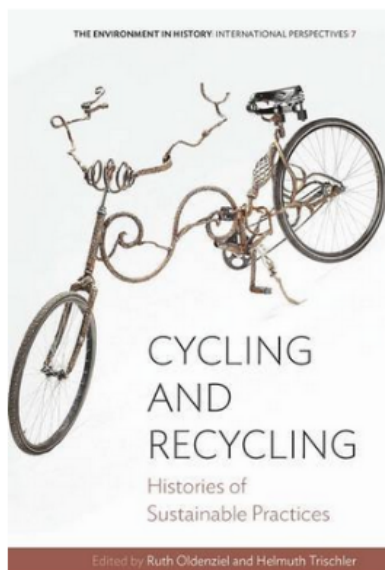
**Chapter:** Zero Waste?

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Mainstream ideology often sees waste as a technical or management problem. Garbage is merely a wrongly placed resource. For decades there has been a dream, a hazardous hope almost, of a technological fix and sufficient technological progress that will one day solve the garbage problem. [It is not necessarily a false dream, however](#) . Over the past decades, industries have developed myriad patterns of green entrepreneurship, as illustrated by Geoffrey Jones. In *Making a Green Machine* , Finn Arne Jørgensen examines the development of the Scandinavian beverage container deposit-refund system from 1970 to present. Solutions need not always be technological fixes, however. Boyan Slat reminds us in his TED Talk “[How the Oceans Can Clean Themselves](#) ” how the currents and waves of the oceans can help improve technological solutions while at the same time keeping the costs low for extracting plastic waste from the oceans.

The original virtual exhibition features an interactive gallery of book and film profiles and articles showcased on the Environment & Society Portal. View the individual gallery items [online](#) or in the [appendix](#) of this PDF (view screenshot below) .



**Oldenziel, Ruth, and Helmut Trischler, eds. *Cycling and Recycling. Histories of Sustainable Practices*. New York, Oxford: Berghahn Books, 2015.**

Modern technology is an important factor in public discussions of the environment. In recent years, however, activists, researchers, and policymakers turned to older technologies in their pursuit of sustainability. The case studies explore the historical fortunes of bicycling and waste recycling, tracing their development and providing valuable context for the policy successes and



The dream of the technological fix has been flanked by ideas of behavioral engineering—just as people have been taught to be wasteful in the aftermath of World War II, as Susan Strasser uncovered in her book *Waste and Want* , they can now be taught to be waste-mindful and to litter less, reuse or recycle.

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Zero Waste?

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The original virtual exhibition includes an [interview](#) with Prof. Dr. Simon Werrett on “Recycling and the History of Science and Technology.” 23 May 2013. 4:16 min.



Recycling is not a new practice. Follow the work of early modernist [Simon Werrett](#) or read through Ruth Oldenziel and Helmuth Trischler’s edited volume *Cycling and Recycling* to learn how activists, researchers, and policymakers have increasingly turned to mobilizing older technologies in their pursuit of sustainability. Case studies range from early modern secondhand trade to utopian visions of human-powered vehicles. In her paper “[Everything Circulates](#),” Marla Erland tells you about nineteenth-century theories of recycling in agricultural chemistry.

While everyone can play their part to achieve the goal of sustainable living, since the 1990s increasing emphasis has been placed on the [power of the city](#). In contrast to the national, let alone the international level, scholars are convinced that it is cities that are best able to get the job done. [Japan](#), for instance, has one of the most efficient eco-town systems in the world. Many of the world’s major cities, such as San Francisco or New York, have pledged themselves to the ideal of zero waste. Watch the movie *Racing to Zero* to learn how San Francisco plans to accomplish its goal of zero waste by 2020. This upbeat movie conveys the message that cultures can be transformed. [Stefania Gallini’s article](#) on Bogotá’s attempted transition to zero waste, in contrast, cautions readers to think about the difficulties involved in changing a governmental system. Check out the [Ecopolis München](#) virtual exhibition to read about Munich’s history of waste management.

Art has become a powerful language for raising awareness about the problems attached to waste, and many artists like [Vic Muniz](#) have discovered waste as a source of creativity. Plastic and plastic waste, in particular, has been a source of inspiration for many artists to point to the detriments of a world of consumption based on an oil regime. These artworks expose trash in a variety of forms and help the viewer visualize, acknowledge, and critique larger systems in which plastic waste circulates and operates. In the work of art historian Amanda Boetzkes, you can learn how myriad artists have revived plastic waste in their art. In their contributions to the blog *Seeing the Woods*, artists [Judith Selby and Richard Lang](#) introduce you to their project of creating [art from marine-born plastic waste](#) along Kehoe Beach in the Point Reyes National Seashore. Similarly inspiring is the movie *Gyre: Creating Art From a Plastic Ocean*, which documents the work of a team of scientists and artists investigating the buildup of marine debris along the Alaskan coast.

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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“With the help of a volunteer team, we collected plastic from a stretch of Matagorda Island in Texas, strung it on brass wires, then hung it from the ceiling to represent the plastic floating in the ocean.” Caption and photograph courtesy of Judith Selby and Richard Lang, 2017.

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Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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“Trophy Fish.” Caption and photograph courtesy of Judith Selby and Richard Lang, 2017.

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*Trash is for Tossers.* Blog logo.

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**GOING** *zero* **WASTE**

*Going Zero Waste.* Blog logo.

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A growing number of people have taken on the challenge of living waste free. Lauren Singer, Katryn Kellogg and Olga and Gregor are only a few of many. Their blogs, *Trash is for Tossers* or *Going Zero Waste* serve as an additional source of inspiration, as do the movies, *Recipes for Disaster* and *The Clean Bin Project*, which offer humorous and thought-provoking insights into living waste-free lives. Finally, do not leave this exhibit without playing a round of *Garbage Dreams* below. You'll see that recycling can be fun—and addictive. What was once waste is given new life and the (re)cycle begins again.



The screenshot shows the 'Garbage Dreams' website interface. At the top, there is a navigation bar with links: 'THE FILM • THE GAME • RECYCLING • BEHIND THE SCENES • LEARN MORE • GET INVOLVED • CLASSROOM • TALKBACK'. The main content area has a large title 'GARBAGE DREAMS' with Arabic calligraphy in the background. Below the title, there is a green recycling symbol with the text 'PLAY GAME' inside it. To the right of the symbol, there is text describing the game: 'IN CAIRO, THE ZABALLEEN PEOPLE SURVIVE BY COLLECTING AND RECYCLING GARBAGE. THEY RECYCLE OVER 80% OF THE GARBAGE THEY COLLECT. TAKE ON THE ROLE OF THE ZABALLEEN. START WITH ONE NEIGHBORHOOD, ONE FACTORY, AND ONE HUNGRY GOAT. YOU HAVE 8 MONTHS TO BUILD YOUR RECYCLING EMPIRE AND GET CAIRO'S TOTAL RECYCLING AS HIGH AS YOU CAN. CAN YOU BE AS ECO-SAVVY AS THE ZABALLEEN?'. At the bottom of the main content area, there is a small 'ABOUT' button. The footer contains a navigation bar with links: 'Home | The Film | The Game | Recycling | Behind the Scenes | Get Involved | Talkback | Film Credits | Get the DVD | Site Credits'.

*Garbage Dreams*. The Recycling Game.

© 2017 Independent Television Service (ITVS).

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Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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### Websites linked in this text:

- <http://www.environmentandsociety.org/perspectives/2016/3/future-without-waste-zero-waste-theory-and-practice>
- <https://www.youtube.com/watch?v=pF72px2R3Hg>
- <https://seeingthewoods.org/2018/10/09/hazardous-hope-the-debate/>
- <http://www.environmentandsociety.org/mml/making-green-machine-infrastructure-beverage-container-recycling>
- <http://www.environmentandsociety.org/mml/slat-boyan-how-oceans-can-clean-themselves>
- <http://www.environmentandsociety.org/exhibitions/life-waste/zero-waste>
- <https://us.macmillan.com/books/9780805065121>
- <https://www.youtube.com/watch?v=jGCzP2eTF4U&amp;t=10s>
- <http://www.environmentandsociety.org/mml/simon-werrett-recycling-and-history-science-and-technology>
- <http://www.environmentandsociety.org/mml/cycling-and-recycling-histories-sustainable-practices>
- <http://www.environmentandsociety.org/mml/everything-circulates-agricultural-chemistry-and-recycling-theories-second-half-nineteenth>
- <http://www.environmentandsociety.org/perspectives/2018/1/green-city-explorations-and-visions-urban-sustainability>
- <http://www.environmentandsociety.org/mml/japans-eco-towns-and-innovation-clusters-synergy-towards-sustainability>
- <http://www.environmentandsociety.org/mml/racing-zero-pursuit-zero-waste>
- <http://www.environmentandsociety.org/perspectives/2016/3/article/zero-garbage-affair-bogota>
- <http://www.environmentandsociety.org/exhibitions/ecopolis-muenchen/froettmaninger-muellberg>
- <http://www.environmentandsociety.org/exhibitions/life-waste/living-waste>
- <https://seeingthewoods.org/2017/03/13/snapshot-plastic-beach/>
- <https://seeingthewoods.org/2017/03/22/worldview-one-piece-at-a-time/>
- <http://www.environmentandsociety.org/mml/gyre-creating-art-plastic-ocean>
- <http://trashisfortossers.com/>
- <https://www.goingzerowaste.com/>
- <http://www.environmentandsociety.org/mml/recipes-disaster>
- <http://www.environmentandsociety.org/mml/clean-bin-project>

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Zero Waste?

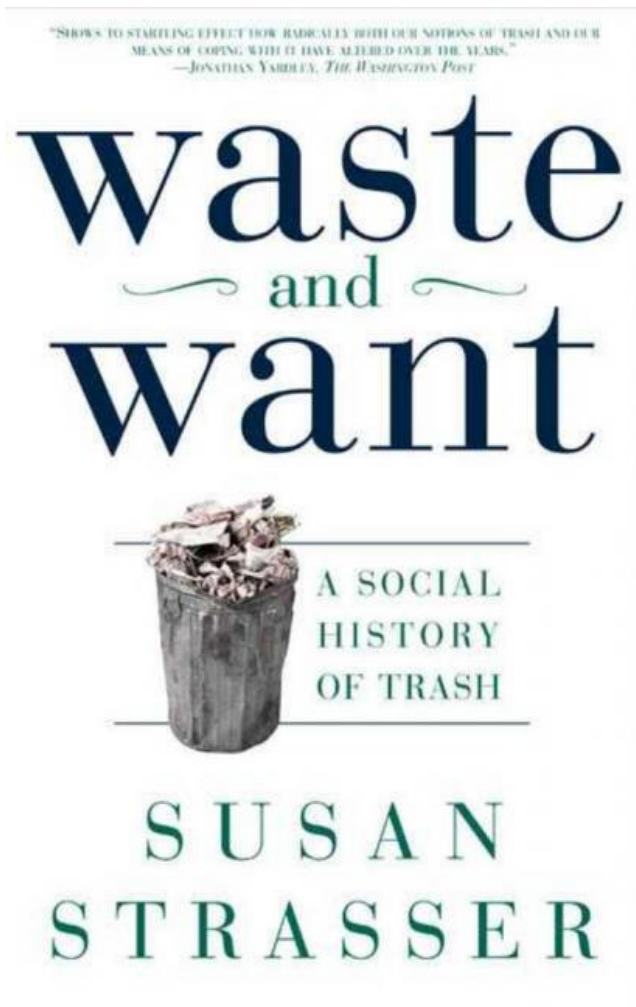
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## Appendix: Galleries from the exhibition

### Gallery from the chapter "Making Waste"



Strasser, Susan. *Waste and Want, A Social History of Trash*. New York: Henry Holt and Company, LLC, 1999.

Before the twentieth century nearly everything was reused as goods, and money was scarce. Nowadays, Americans are hooked on convenience, disposability, fashion, and constant technological change—mass consumption has led to waste on a previously unimaginable scale. *Waste and Want* recaptures a hidden part of social history, illustrating that what counts as trash depends on who's counting and what we throw away defines us as much as what we keep. (Adapted from Macmillan Publishers)

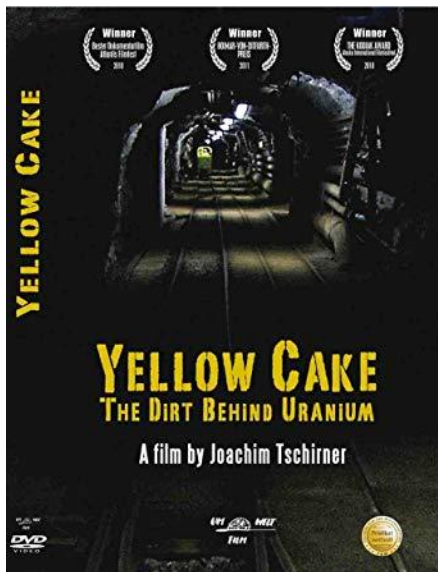
[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

Chapter: Making Waste

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Tschirner, Joachim. *YELLOW CAKE: Die Lüge von der sauberen Energie*. [YELLOW CAKE: The Dirt Behind Uranium]. Berlin: Um Welt Film Produktionsgesellschaft, 2010. 108 min. <https://youtu.be/KojPUrmeng4>.

Director Joachim Tschirner goes behind the scenes at the site of the largest sanitation project in the history of uranium mining, in the German provinces of Saxony and Thuringia. This exploration of 65 years of uranium mining history also takes viewers to active mines in Namibia, Australia, and Canada. (Adapted from the [Official Film Website](#) )

[Learn more](#)



Slade, Giles. *Made to Break, Technology and Obsolescence in America*. Harvard University Press, 2007.

Giles Slade explains how disposability was a necessary condition for America's rejection of tradition and our acceptance of change and impermanence. His book reveals the ideas behind obsolescence at work in the inventions of branding, packaging, and advertising; the contest for market dominance in the automobile industry, the development of electronic technologies—and with it the avalanche of electronic consumer waste that will overwhelm America's landfills and poison its water within the coming decade.

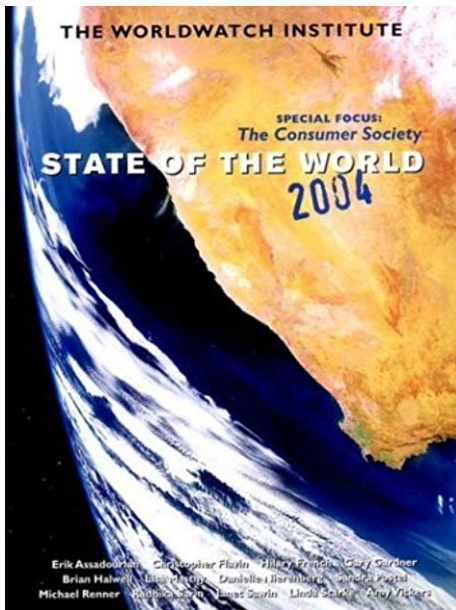
[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Making Waste

**Source URL:** <http://www.environmentandsociety.org/node/8453>

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The Worldwatch Institute. *State of the World 2004, Special Focus: The Consumer Society*. W. W. Norton & Company, Inc, 2004.

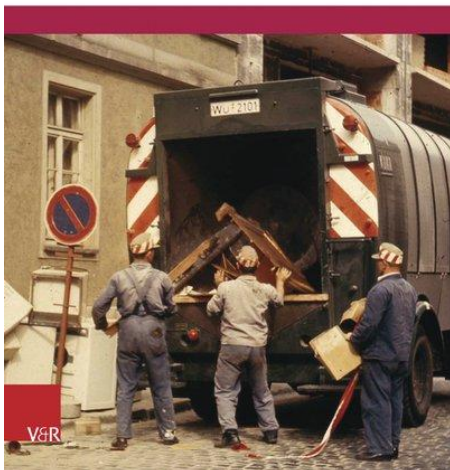
*State of the World 2004* provides government officials, journalists, professors, students, and concerned citizens a comprehensive analysis of global environmental problems with detailed descriptions of practical, innovative solutions like charting the most environmentally sound path to a hydrogen-fueled economy, or accelerating the rapidly growing conversion of farmers worldwide to organic and sustainable agriculture.

[Learn more](#)

Roman Köster

## Hausmüll

Abfall und Gesellschaft in  
Westdeutschland 1945-1990



Köster, Roman. *Hausmüll: Abfall und Gesellschaft in Westdeutschland 1945–1990*. Umwelt und Gessellschaft, edited by Christof Mauch and Helmuth Trischler, vol. 15. Göttingen: Vandenhoeck & Ruprecht GmbH & Co, 2017.

In the wake of the “economic miracle,” post-war West German society was confronted with a new challenge: the rise in consumption resulted in a dramatic increase in the production of waste, harming the environment. Roman Köster traces the development of a “new” environmental problem and the political, economic, and discursive strategies for dealing with it. (Adapted from [Vandenhoeck & Ruprecht](#) )

[Learn more](#)

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Making Waste

**Source URL:** <http://www.environmentandsociety.org/node/8453>

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Mutz, Mathias. *Umwelt als Ressource: Die sächsische Papierindustrie 1850–1930*. Umwelt und Gessellschaft, edited by Christof Mauch, Helmuth Trischler, and Frank Uekötter, vol. 4. Göttingen: Vandenhoeck & Ruprecht, 2012.

Interaction and co-evolution with the environment are fundamental aspects of modern industries, particularly true for the paper industry due to requirements regarding location, resources, and disposal of waste. Mathias Mutz looks at issues of transportation of products, optimizing the flow of raw materials, and investment in wastewater treatment facilities. (Adapted from [Vandenhoeck & Ruprecht](#) )

[Learn more](#)

#### Websites linked in this text:

- <http://www.environmentandsociety.org/mml/misunderstanding-waste>
- <http://www.atlas.d-waste.com/>
- <http://www.environmentandsociety.org/exhibitions/life-waste/living-waste#AGBOGBLOSHIE>
- <http://www.environmentandsociety.org/mml/episode-7-e-waste-and-obsolence>
- <http://niche-canada.org/2009/06/15/natures-past-episode-7-e-waste-and-obsolence/>
- <http://www.environmentandsociety.org/exhibitions/life-waste/making-waste>

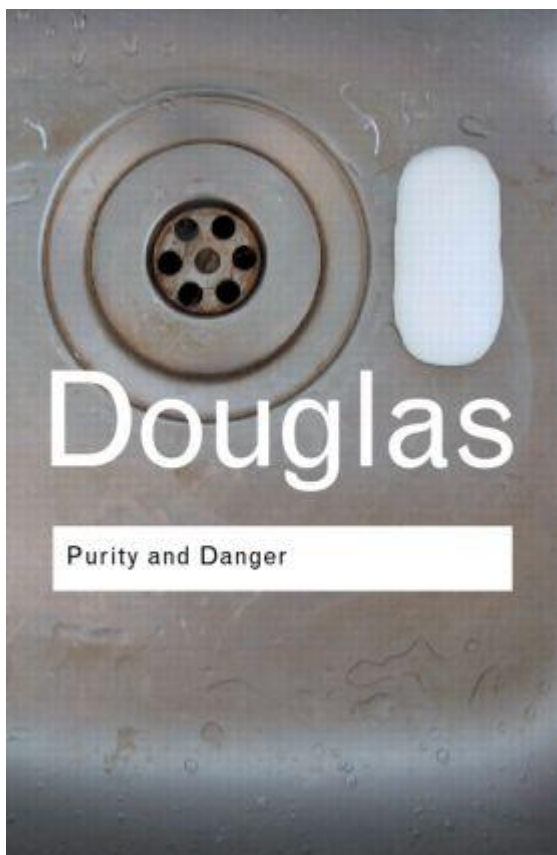
Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Making Waste

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**PDF create on:** 03 May 2021 11:58:25

## Gallery from the chapter "Thinking Waste"



**Douglas, Mary. *Purity and Danger, An Analysis of Concepts of Pollution and Taboo*. Routledge & Kegan Paul, 1966.**

The idea of purity is a central question for every society. Mary Douglas explains its relevance and its wide-ranging impact on our attitudes, values, cosmology, and knowledge. The book has been hugely influential in many areas of debate—from religion to social theory. But perhaps its most important role is to offer each reader a new explanation of why people behave in the way they do. (Adapted from Routledge, Taylor & Francis)

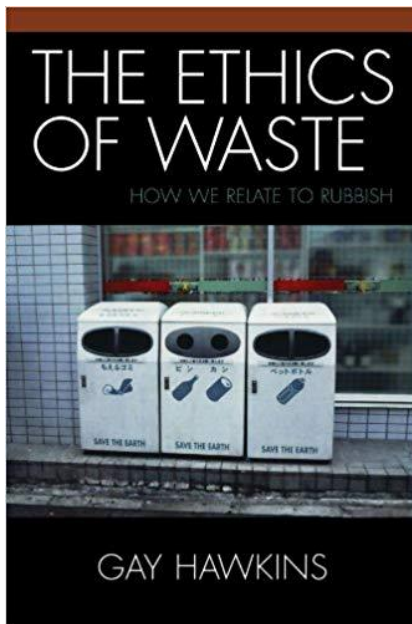
[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Thinking Waste

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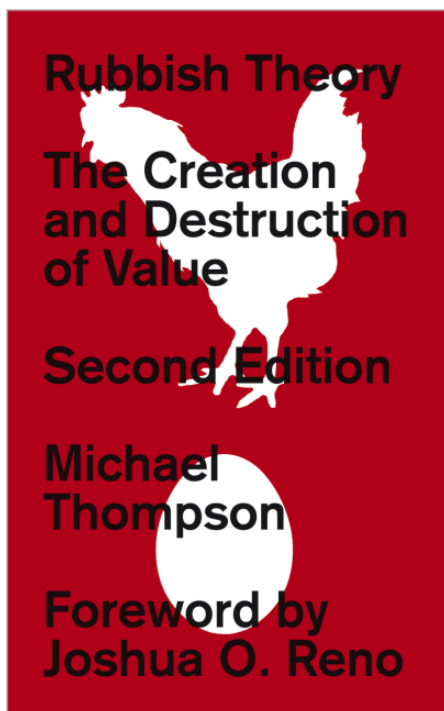
**PDF create on:** 03 May 2021 11:58:26



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

Gay Hawkins explores the ethical significance of waste in everyday life—from the broadest conceptions of waste to how the environmental movement has affected the ways we think about garbage, the ways we deal with it, and the ways in which we view others' reactions to waste. He seeks ways to change ecologically destructive practices without recourse to guilt, moralism, or despair. (Adapted from [Rowman & Littlefield](#) )

[Learn more](#)



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

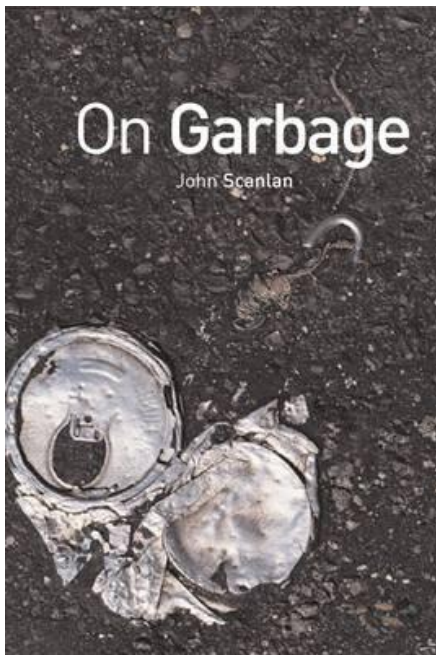
Rubbish is something we ignore. We discard it, from our lives and minds, and it remains outside the concerns of conventional economics. However, rubbish can re-enter circulation as a prized commodity, far exceeding its original value. This edition includes a new afterword revealing how the consequences of our compulsion to discard are far from inevitable, and how we can transform our wastes into valuable resources. (Adapted from [Pluto Press](#) )

Müller, Simone M. "The Life of Waste." *Environment & Society Portal, Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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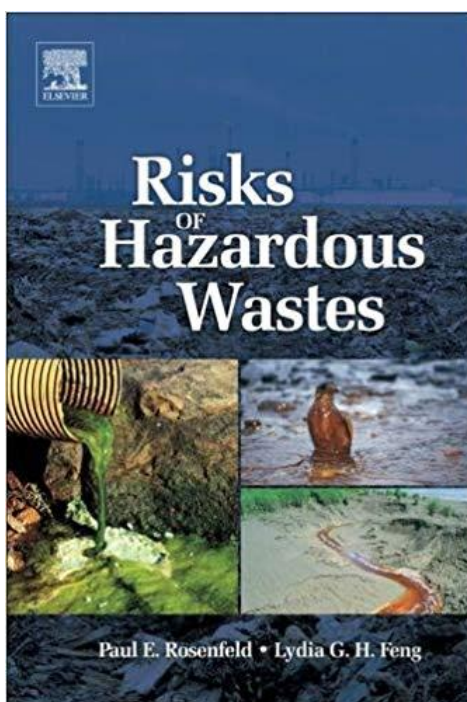


Scanlan, John. *On Garbage*. London: Reaktion Books, 2004.

Disposal causes not only mountains of rubbish that occasionally threatens to overwhelm us; it also creates other “garbage,” particularly the dead ends of useless knowledge and the often abject reality of our disposable lives. Garbage is not only material waste, but also “broken” knowledge, remainders of systems of intellectual and cultural thought. It turns out that we have become the garbage of our times.

(Adapted from [Reaktion Books](#) )

[Learn more](#)



Rosenfeld, Paul E. and Lydia Feng. *Risks of Hazardous Wastes*. Elsevier Science, 2011.

One of the most difficult challenges of our society is hazardous waste and its risks posed to human health and the environment. Numerous case studies illustrate how hazardous waste mismanagement has led to disastrous consequences and highlights the deficiencies in science and regulation that have allowed the public to be subjected to myriad potentially hazardous agents. (Adapted from [Elsevier](#) )

Müller, Simone M. “The Life of Waste.” *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Thinking Waste

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German literature has a profound tradition of engaging with and thinking about waste, ranging from realist poet Wilhelm Rabe to filmmaker Rainer Werner Fassbinder. Learn more about it [here](#) .

**Websites linked in image captions:**

- <http://www.atlas.d-waste.com/>
- <https://us.macmillan.com/books/9780805065121>
- <http://www.yellowcake-derfilm.de/site/english/>
- <http://www.environmentandsociety.org/mml/yellow-cake-die-luege-von-der-sauberen-energie-yellow-cake-dirt-behind-uranium>
- <http://www.hup.harvard.edu/catalog.php?isbn=9780674025721>
- <http://books.wwnorton.com/books/State-of-the-World-2004/>
- <https://www.vandenhoeck-ruprecht-verlage.com/themen-entdecken/geschichte/zeitgeschichte-ab-1949/2582/hausmuell?number=1039177>
- <http://www.environmentandsociety.org/mml/hausmuell-abfall-und-gesellschaft-westdeutschland-1945-1990>
- <https://www.vandenhoeck-ruprecht-verlage.com/>
- <http://www.environmentandsociety.org/mml/umwelt-als-ressource-die-saechsische-papierindustrie-1850-1930>

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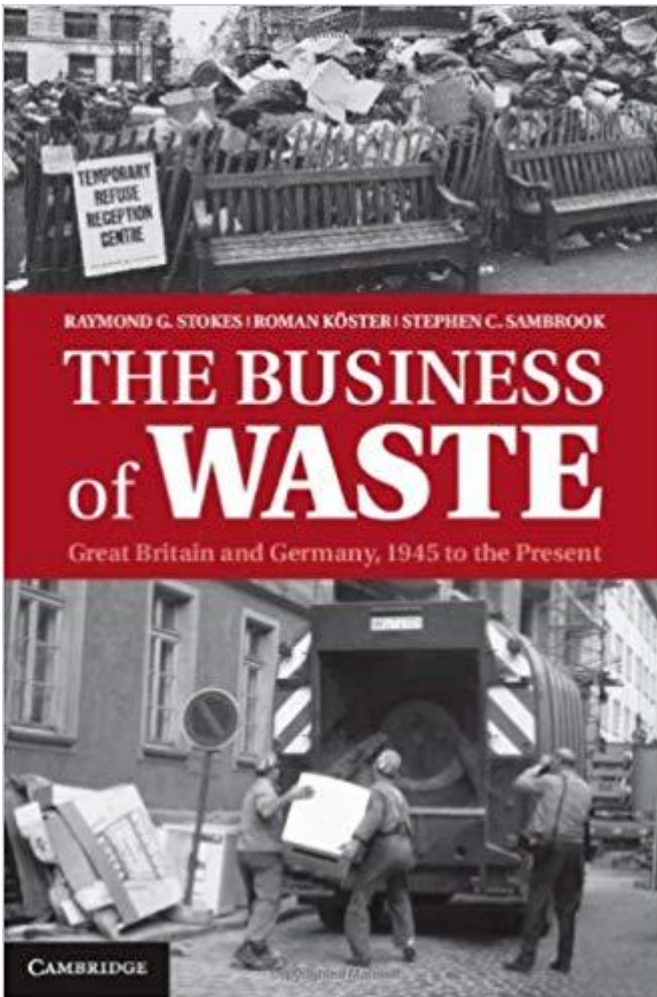
**Chapter:** Thinking Waste

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## Gallery from the chapter "Managing Waste"



Stokes, Raymond, Roman Köster, and Stephen Sambrook *The Business of Waste: Great Britain and Germany, 1945 to the Present*. Cambridge: Cambridge University Press, 2013.

The rise of consumerism in the UK and West Germany after 1945 led to a mass production of garbage. The countries are similar, but took different paths from low-waste to throwaway societies, and recently, towards the goal of zero-waste. The authors explore the relationship between public and private provision in waste services, the role of government, and the effects of globalization. (Adapted from Cambridge University Press)

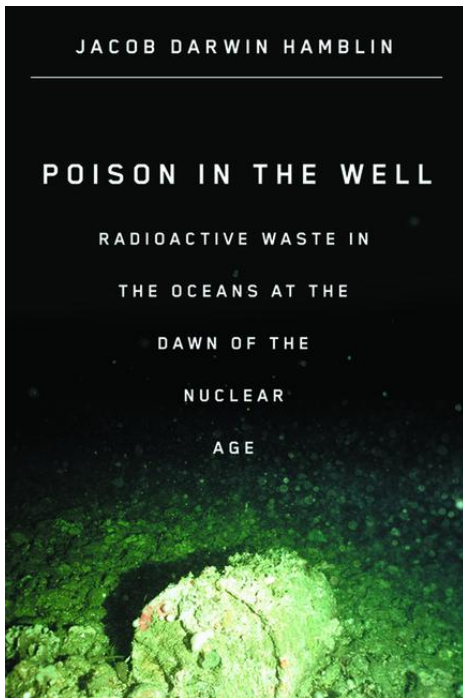
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Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Managing Waste

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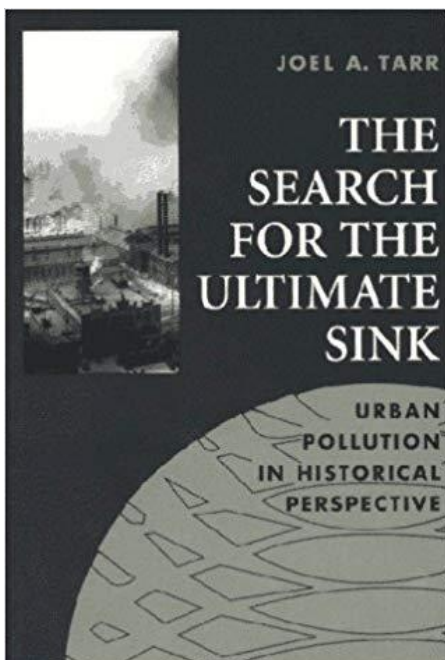
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Darwin Hamblin, Jacob. *Poison in the Well: Radioactive Waste in the Oceans at the Dawn of the Nuclear Age*. Rutgers University Press, 2008.

*Poison in the Well* examines policy decisions, scientific conflicts, public relations strategies, and the myriad mishaps and subsequent cover-ups that were born out of the dilemma of where to house deadly nuclear materials. Hamblin traces the development of the issue in Western countries from the end of World War II to the blossoming of the environmental movement in the early 1970s. (Adapted from Rutgers University Press)

[Learn more](#)



Tarr, Joel A. *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*. University Of Akron Press, 1996.

The challenge of dealing with urban wastes has taxed the minds of scientists, engineers, and public officials. Tarr's essays explore solutions to waste disposal and policy issues involved in the trade-offs among public health, environment, and the difficulties and costs of pollution control; all this while facing changes in civic and professional values. (Adapted from [University of Akron Press](#) )

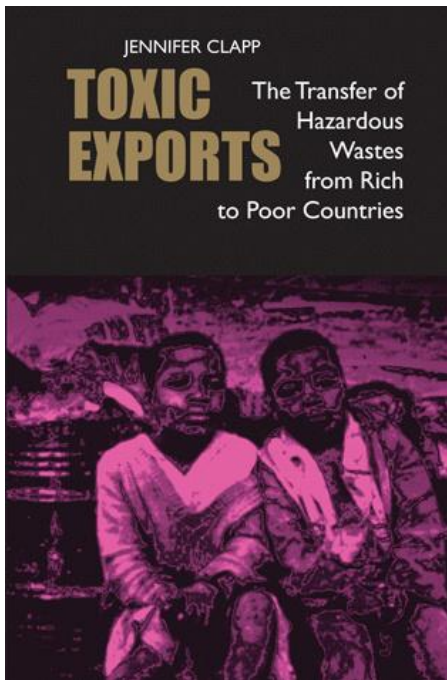
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Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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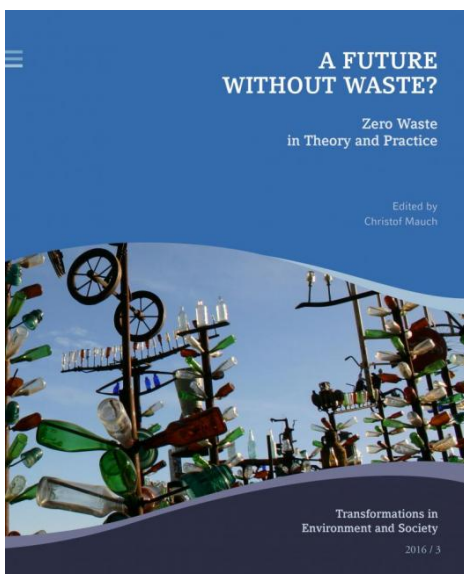
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Clapp, Jennifer. *Toxic Exports: The Transfer of Hazardous Wastes from Rich to Poor Countries*. Ithaca and London: Cornell University Press, 2001.

Jennifer Clapp examines the nature of international trade in toxic waste and the roles of multinational corporations and environmental NGOs. Waste transfer has become a routine practice for firms in industrialized countries. Poor countries have accepted these imports but struggle to manage the materials safely. Clapp argues that governments have failed to recognize the voices of protest. (Adapted from [Cornell University Press](#) )

[Learn more](#)



Gutberlet, Jutta. “Ways Out of the Waste Dilemma: Transforming Communities in the Global South.” In: “A Future without Waste? Zero Waste in Theory and Practice,” edited by Christof Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 3, 55–68.

The idea of zero waste requires shifts in cultural values rather than new technological solutions. The inspiration for sustainable waste policies will likely come from the Global South, where consumerism and discard-oriented production are not yet fully developed, economies are less fixated on growth, and people’s lifestyles aren’t “cocooned in the consumption bubble.” (Adapted from author’s abstract)

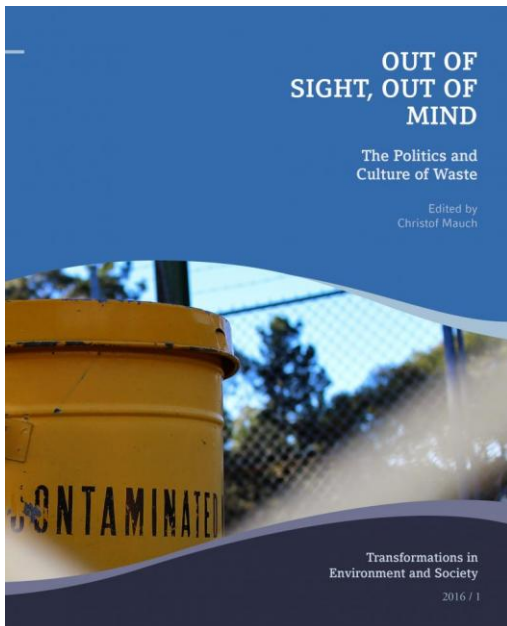
[Learn more](#)

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Managing Waste

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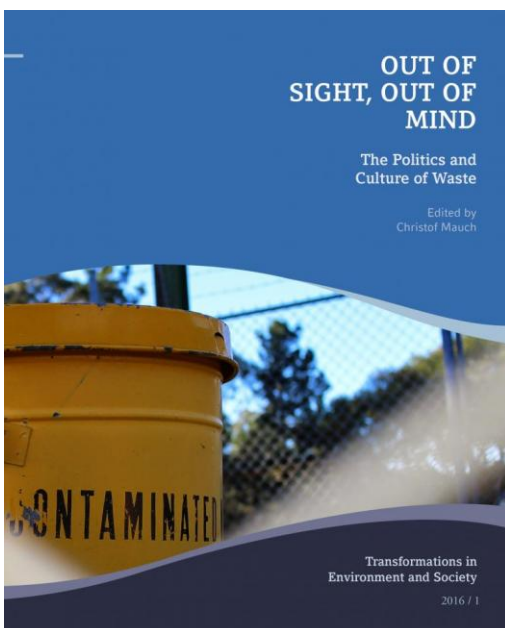
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Müller, Simone M. “The ‘Flying Dutchmen’: Ships’ Tales of Toxic Waste in a Globalized World” In: “Out of Sight, Out of Mind: The Politics and Culture of Waste,” edited by Christof Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 1, 13–19.

As a space where terrestrial jurisdiction did not apply, the ocean was a convenient solution to messy problems that nobody wanted; unwanted things could simply be loaded onto a ship and sent away. Using the image of the legendary ghost ship, the Flying Dutchman, this article traces the journeys of several ships and their cargos of toxic waste in the 1970s and 1980s. (Adapted from author’s abstract)

[Learn more](#)



Mauch, Christof, ed. “Out of Sight, Out of Mind: The Politics and Culture of Waste,” *RCC Perspectives: Transformations in Environment and Society* 2016, no. 1.

Waste is never “out of sight.” Once discarded, it undergoes transformations, often reappearing elsewhere in new forms. Scholars investigate the traces waste leaves behind in the course of its travels. The essays follow the journeys of unwanted substances and unusable objects by studying how they have transformed landscapes, ecosystems, and even the human body. (Adapted from the Environment and Society Portal)

[Learn more](#)

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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- <https://www.rutgersuniversitypress.org/poison-in-the-well/9780813544236>
- <https://www.uakron.edu/uapress/browse-books/book-details/index.dot?id=1463650>
- <http://www.environmentandsociety.org/node/3761/>
- <http://www.cornellpress.cornell.edu/book/?GCOI=80140100368150>
- <http://www.environmentandsociety.org/mml/toxic-exports-transfer-hazardous-wastes-rich-poor-countries>
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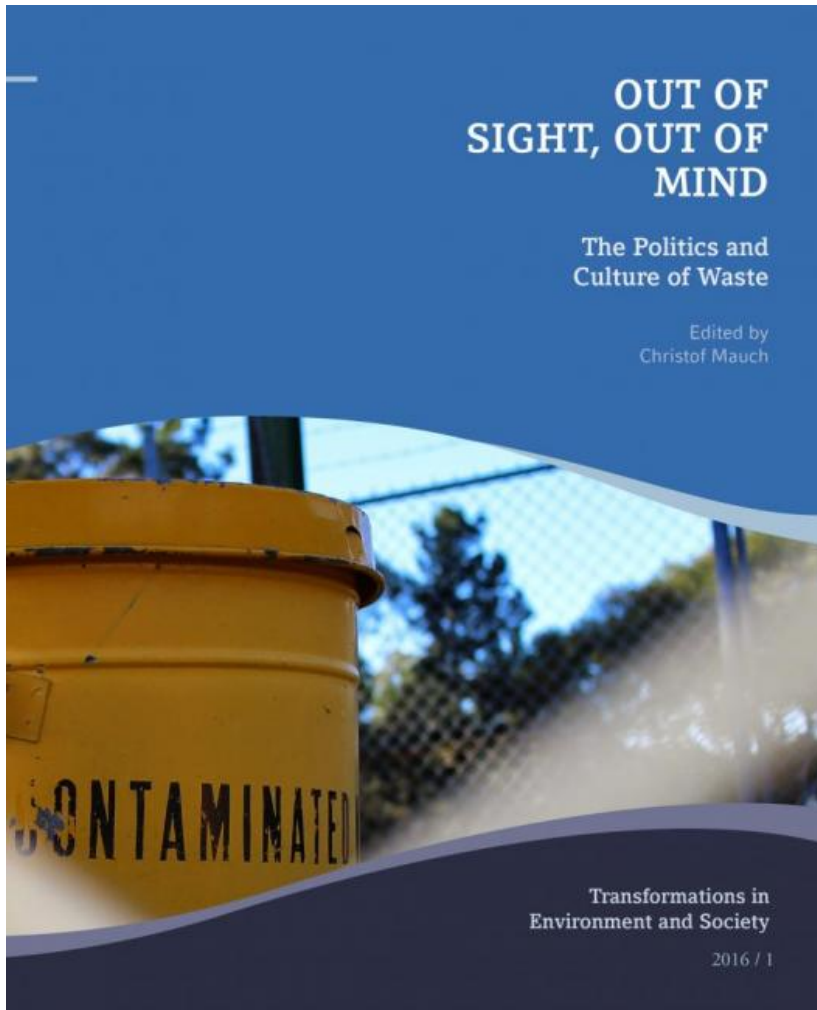
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**Chapter:** Managing Waste

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## Gallery from the chapter "The Power of Waste"



Brown, Kate. "The Last Sink: The Human Body as the Ultimate Radioactive Storage Site." In: "Out of Sight, Out of Mind: The Politics and Culture of Waste," edited by Christof Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 1, 41–47.

Brown examines health effects of radioactivity, little acknowledged by governments, who instead prefer to focus on "exposures" and isotope measurements in the environment. She focuses on Ozersk, the town with Russia's first plutonium plant and how people are also a repository of manmade waste, just like rivers, ground water, soils, plants, and animals. (Adapted from author's abstract)

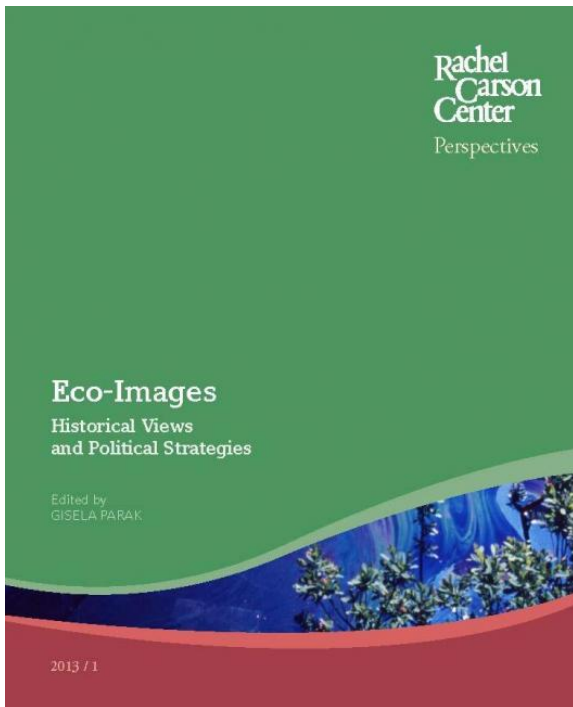
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**Chapter:** The Power of Waste

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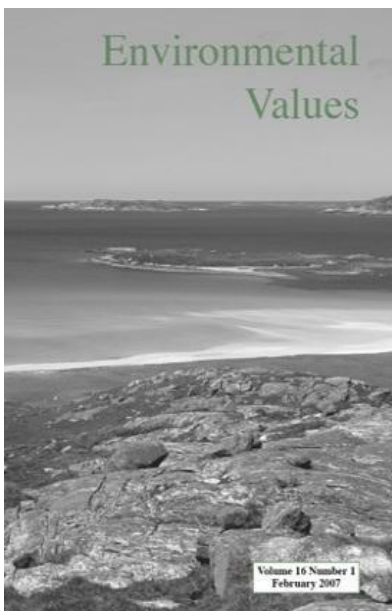
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Ladapo, Oluwafemi Alexander. “The Contribution of Cartoonists to Environmental Debates in Nigeria: The Koko Toxic-Waste-Dumping Incident,” In: “Eco-Images: Historical Views and Political Strategies,” edited by Gisela Parak, *RCC Perspectives* 2013, no. 1, 61–71.

The paper focuses on the 1987 to 1988 dumping of hazardous industrial waste in Koko, Nigeria, especially on the cartoonists, that were in the public debate over the waste-dumping incident from the Nigerian tabloids in June 1988. The paper critically analyzes the number, content, and contexts of cartoons that covered the toxic-waste dumping. (Adapted from author’s abstract)

[Learn more](#)



Claro, Edmundo. “Exchange Relationships and the Environment: The Acceptability of Compensation in the Siting of Waste Disposal Facilities.” *Environmental Values* 16, no. 2 (2007): 187–208.

Claro focuses on compensation for environmental risks as a necessary condition for local acceptance of waste treatment facilities. By focusing on the siting of a sanitary landfill in Santiago, Chile, this paper explores the performance of both monetary and in-kind compensations and relates the analysis to the notion of social norms of exchange. The absence of compensation is linked to fraternal relations based on care. (Adapted from [The White Horse Press](#) )

[Learn more](#)

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** The Power of Waste

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a voice of revolutionary ecology

# ALARM

Parsons & Whitmore Want to Build Largest Pulp Mill in North America  
Compiled by Mass Earth First!



Where the multinational Parsons & Whitmore plan to build the Apple Grove Pulp & Paper Mill in West Virginia photo: Langille

Parsons & Whitmore Inc., of Rye Brook, NY, want to build the largest pulp and paper mill in North America in Apple Grove, West Virginia. If constructed as planned, the 1.1 billion dollar mill would require forests to be destroyed at the rate of 70 square miles per year. Cutting in this area is sure to lead to heavy erosion, as West Virginia is famous for its rugged mountainous terrain.

In addition, Parsons & Whitmore plan to implement chlorine based bleaching methods, even though this process is outdated and produces the highly toxic chemical, dioxin. In recent years companies across Europe and Canada have switched to less dangerous means of bleaching,

such as using oxygen and hydrogen peroxide.

West Virginia Governor Gaston Caperton, has labeled citizens opposed to the mill as 'extremists', and has even gone as far as to lash out at the *Charleston Gazette* for printing a series of articles which questioned the negative impact the mill would have on the surrounding environment. Governor Caperton was quoted in a Sept. 1994 *Charleston Gazette* article as saying, "I consider myself an environmentalist. [But] I want good businesses in this state. I want heavy industry in this state."

At a recent protest over the proposed mill, Billy Jack Gregg, a member of the West Virginia Public Service Commission, held

a sign stating, "I'm not an extremist. I'm a voter."

Kim Baker, president of the West Virginia Environmental Council said there will be more protests to follow, with possibly a protest a week, until Caperton changes his mind about the mill.

Citizens were especially concerned about the dioxin which will be produced by the mill. Pat Davis, a resident who lives downstream from the proposed mill site said, "They say they'll use a small amount [of dioxin], but what they don't tell you is that this won't just disappear. It builds up and builds up. And it does kill."

American industry has fudged studies which show dioxin isn't as deadly as once believed. To the contrary, Jim Kotkon of the West Virginia Sierra Club, said of the recently released EPA draft report on dioxin, "dioxin, rather than being less toxic than once believed, is actually much more toxic than once believed."

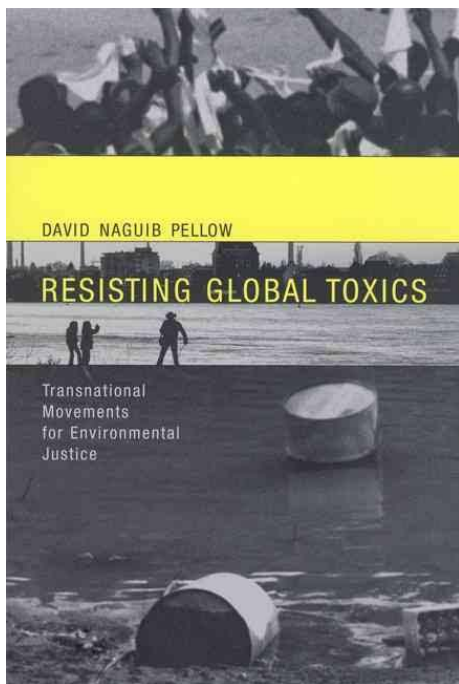
Kotkon further stated that the EPA confirmed that dioxin and related compounds probably cause lung, liver and other cancers. Dioxin and its related compounds are bioaccumulative (meaning once they enter the body, they tend to stay there) and have been conclusively proven to cause cancer in animals.

(continued - Parsons)

Massachusetts Earth First!, ed., *ALARM* no. 11 (September 1994). Republished by the Environment & Society Portal, Multimedia Library. <http://www.environmentandsociety.org/node/7105>.

The *ALARM* began in 1991 as a revolutionary ecological news quarterly published by Earth First! groups active in the northeastern United States, emphasizing news and direct actions significant to regional and indigenous groups. Massachusetts Earth First! published issue 11, which updates readers on the radioactive waste management proposal in Massachusetts. (Adapted from the Environment and Society Portal)

[Learn more](#)



Pellow, David N. *Resisting Global Toxics: Transnational Movements for Environmental Justice*. The MIT Press, 2007.

Nations and corporations in the "global North" export toxic waste to developing countries, causing harm to ecosystems and those who live there. Pellow examines transnational environmental justice movements to challenge and reverse this issue. He argues that waste dumping from rich to poor communities is a form of transnational environmental inequality that reflects North/South divisions in a globalized world. (Adapted from The MIT Press)

[Read more](#)

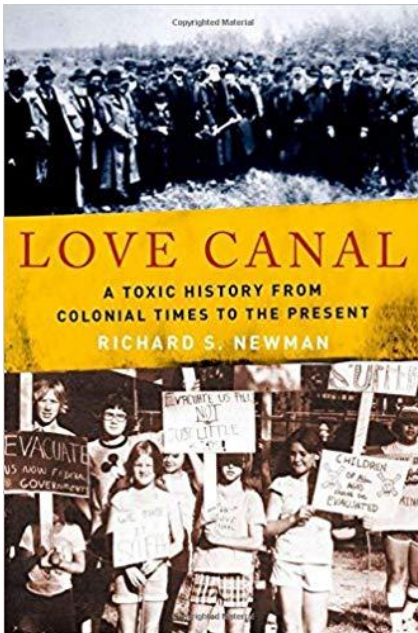
Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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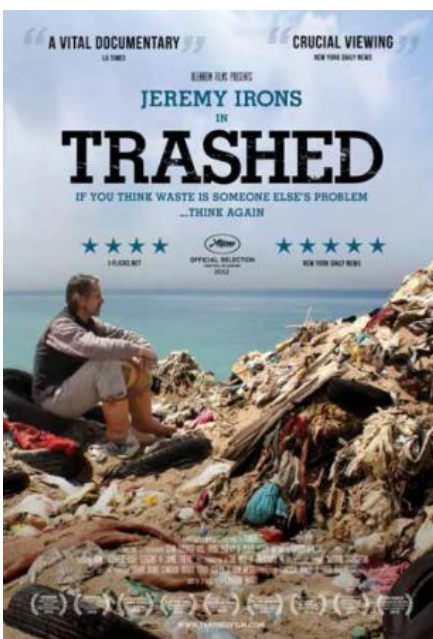




Newman, Richard S. *Love Canal: A Toxic History from Colonial Times to the Present*. New York: Oxford University Press, 2016.

In 1978, citizens of Love Canal, NY, protested the leaking of toxic waste from a local site, advocating for environmental justice. The activists achieved the government relocation of their families and government/industry remediation of the dump itself. Love Canal remains a watchword of hazardous waste reform and one of the most significant environmental disasters in US history. (Adapted from Oxford University Press)

[Learn more](#)



Brady, Candida. *Trashed: No Place For Waste*. Wattlington: Blenheim Films Ltd., 2013. HD, 97 min. [https://youtu.be/5z2s\\_klZkFg](https://youtu.be/5z2s_klZkFg).

On a boat in the North Pacific, Jeremy Irons faces the reality of the Great Pacific Garbage Patch and the effect of plastic waste on marine life. Global warming is melting ice caps and releasing decades of old poisons, which was stored in the ice, into the sea. The film examines solutions to the pressing environmental problems, some being as frightening and toxic as the problem itself. (Adapted from the [Official Film Website](#))

[Learn more](#)

Müller, Simone M. "The Life of Waste." *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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- <https://mitpress.mit.edu/books/resisting-global-toxics>
- <https://global.oup.com/academic/product/love-canal-9780195374834?cc=de&lang=en&#>
- <http://www.trashedfilm.com/about/>
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Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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## Gallery from the chapter "Living with Waste"



Garrison, Andrew. *Trash Dance*. Boston, MA: Andrew Garrison/PBS International, 2012. Color, 68 min.

Choreographer Allison Orr finds beauty and grace in garbage trucks, and in the unseen men and women who pick up our trash. Filmmaker Andrew Garrison follows Orr as she rides along with Austin sanitation workers on their daily routes to observe and later convince them to perform a most unlikely spectacle. On an abandoned airport runway, two dozen trash collectors and their trucks deliver—for one night only—a stunningly beautiful and moving performance, in front of an audience of thousands. (Source: [Official Film Website](#) )

[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

Chapter: Living with Waste

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Walsh, Sean. *Hauling*. Los Angeles: Code 7 Entertainment, 2010. HD, 53 min.

Claudines is father to over 27 children and many others, who make their living out of recycling material that others have thrown out. He is well known by locals, who often donate used goods, which he restores and sells. Claudines and his family serve as a symbol of the thousands of people in Brazil who resort to recycling in order to make a living and suffer prejudice and discrimination as a result. (Adapted from the [Official Film Website](#) )

[Read more](#)



Pasquini, Marco. *Maputo Dancing Dump*. Rome: Suttvuess, 2010. HD, 52 min.

On the outskirts of Maputo, the Hulene district is the city's largest garbage dump, "lixreira." This world of degradation and continuous struggle for survival is where groups of hip-hop dance were created. Music from African-American communities paired with agility and spontaneity turn any occasion into a show. In the midst of this microcosm, we uncover the deep vital strength of this place. (Adapted from [The Cooperative Suttvuess](#) )

[Learn more](#)

Müller, Simone M. "The Life of Waste." *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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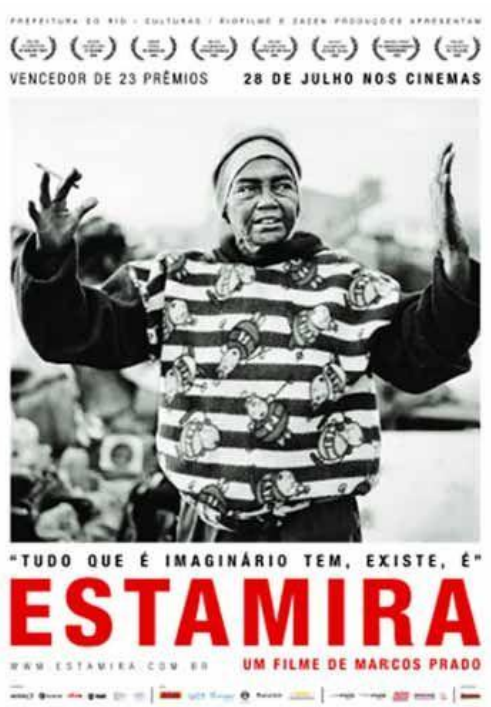
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Livon-Grosman, Ernesto. *Cartoneros*. Watertown: Documentary Educational Resources, Inc., 2006. 16 mm, 60 min.

*Cartoneros* follows the paper recycling process in Buenos Aires from the trash pickers who collect paper, through middlemen in warehouses, to executives in large corporate mills. The film follows the trash from the neighborhood sidewalk to the paper mill and is both a record of an economic and social crisis and an invitation to audiences to rethink the value of trash. (Adapted from [Documentary Educational Resources, Inc](#) )

[Learn more](#)



Prado, Marcos. *Estamira*. Rio de Janeiro: Zazen Produções, 2005. 35 mm, 115 min. <https://youtu.be/jSZv8jO9SAU>.

*Estamira* tells the story of a 63-year-old woman who suffers from schizophrenia and lives at the waste disposal site of Jardim Gramacho in Rio de Janeiro. The film shows her life during four years of continuous medication; reveals her transformation and the effects the drugs had on her. With a poetic discourse, Estamira lives for the mission that was set upon her: to reveal and to reclaim the truth. (Adapted from [Zazen Produções](#) )

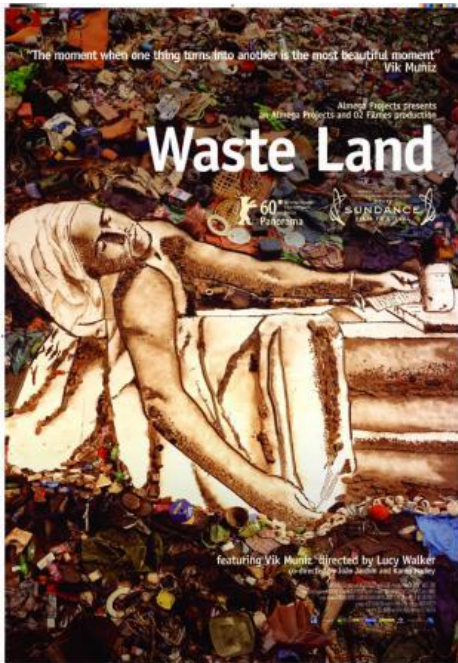
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Müller, Simone M. "The Life of Waste." *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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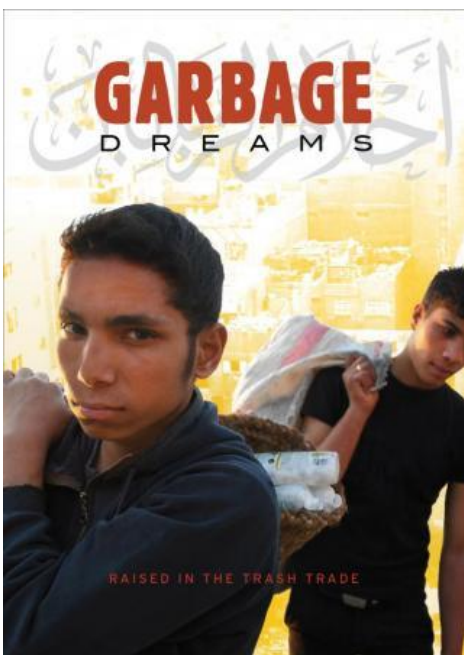
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Walker, Lucy. *Waste Land*. London/São Paulo: Almeida Projects/O2 Filmes, 2010. Color, Blu-Ray, 98 min.

Brazilian-born artist Vik Muniz has won international acclaim for his artwork made from recycled materials. But his work took on deeper resonance when he returned to Rio de Janeiro and visited the pickers working Jardim Gramacho, the largest landfill in the world. A portrait on the power of art to make social change, this film is a reminder that we have means available to us to create change. (Adapted from [Tales from Planet Earth](#) )

[Learn more](#)



Iskander, Mai. *Garbage Dreams*. New York: Iskander Films, 2009. 35 mm, 79 min. <https://youtu.be/b26dBL5tQPk>.

*Garbage Dreams* follows three teenage boys born into the trash trade and growing up in the world's largest garbage village, on the outskirts of Cairo. It is home to 60,000 Zabaleen, Arabic for "garbage people." Far ahead of any modern "Green" initiatives, the Zabaleen survive by recycling 80 percent of the garbage they collect. When their community is suddenly faced with the globalization of its trade, each of the teenage boys is forced to make choices that will impact his future and the survival of his community. (Source: [Official Film Website](#) )

[Read more](#)

Müller, Simone M. "The Life of Waste." *Environment & Society Portal*, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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- [http://trashdancemovie.com/?page\\_id=448](http://trashdancemovie.com/?page_id=448)
- <http://www.environmentandsociety.org/node/7374/>
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- <http://www.environmentandsociety.org/node/7189/>
- <http://www.der.org/films/cartoneros.html>
- <http://www.environmentandsociety.org/node/6073/>
- <http://www.zazen.com.br/new-page-1/>
- <http://www.environmentandsociety.org/node/4057/>
- <http://nelson.wisc.edu/tales/festivals/schedule2012.php#W>
- <http://www.environmentandsociety.org/node/7352/>
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- <http://www.environmentandsociety.org/node/6066/>

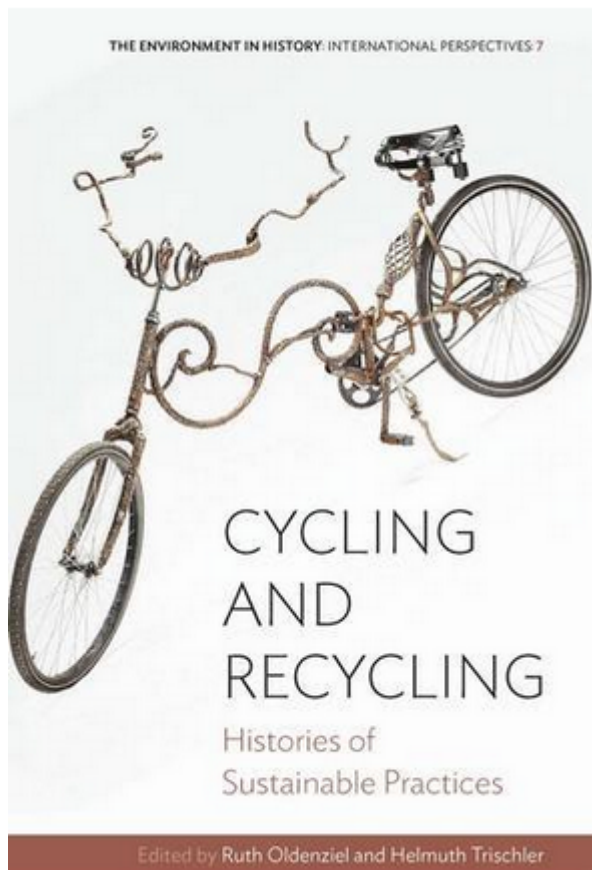
Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

**Chapter:** Living with Waste

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## Gallery from the chapter "Zero Waste"



Oldenziel, Ruth, and Helmuth Trischler, eds. *Cycling and Recycling. Histories of Sustainable Practices*. New York, Oxford: Berghahn Books, 2015.

Modern technology is an important factor in public discussions of the environment. In recent years, however, activists, researchers, and policymakers turned to older technologies in their pursuit of sustainability. The case studies explore the historical fortunes of bicycling and waste recycling, tracing their development and providing valuable context for the policy successes and failures of today. (Adapted from [Berghahn Books](#) )

[Learn more](#)

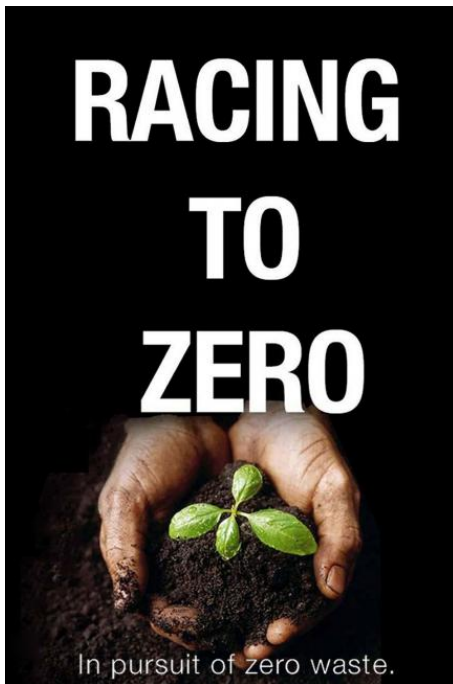
Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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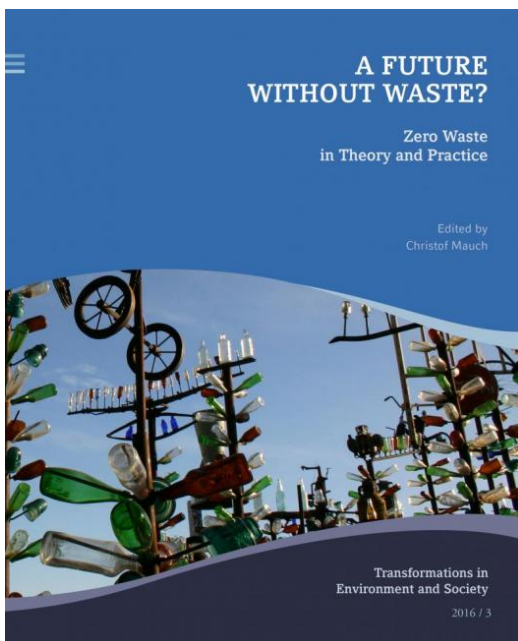




Beaver, Christopher. *Racing to Zero: In Pursuit of Zero Waste*. San Francisco: Filmmakers Collaborative, 2014. HD, 59 min. <https://www.youtube.com/embed/jTRRk-LNMR4>.

In order to reach zero waste, we need to change our relationship to garbage. As a resource, garbage can take on another life, stay out of landfills and be reused and recreated over and over again. By tracking San Francisco's waste management strategies, *Racing to Zero* examines today's cultural garbage practices in terms of consumption, preparation, use and production. (Adapted from the [Official Film Website](#) )

[Learn more](#)



Mauch, Christof, ed. "A Future without Waste? Zero Waste in Theory and Practice," *RCC Perspectives: Transformations in Environment and Society* 2016, no. 3. [doi.org/10.5282/rcc/7540](https://doi.org/10.5282/rcc/7540).

In the era of modern consumerism, many are calling for radical lifestyle changes and companies are embarking on ambitious plans to become "zero waste." But is a world without waste truly achievable? The essays reflect on the feasibility of creating closed material cycles and explore real-world examples of challenges and successes on the way to zero waste. (Adapted from author's abstract)

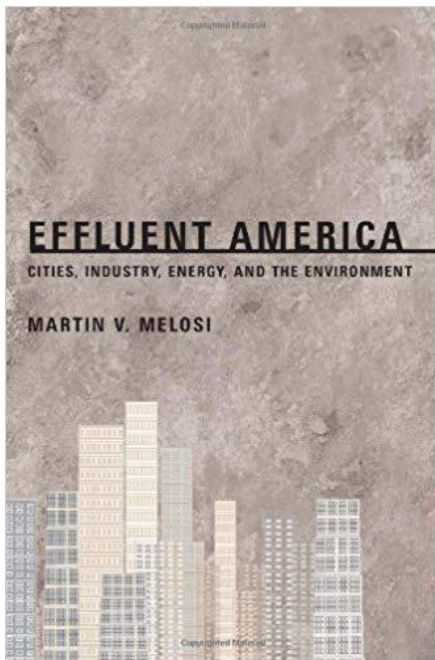
[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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Melosi, Martin V. *Effluent America: Cities, Industry, Energy, and the Environment*. Pittsburgh: University of Pittsburgh Press, 2009.

Melosi looks at the relationship between industrial expansion and urban growth, charting the development of city services, their implementation, and how they affected growth during the Industrial Revolution and beyond. He explores the environmental impacts of unprecedented methods of production, the influence of new forms of energy, and changing patterns of consumption. (Adapted from [University of Pittsburgh Press](#) )

[Learn more](#)



Slat, Boyan. “*How the Oceans Can Clean Themselves.*” Filmed October 2012 at TEDxDelft. TEDx Talks video, 11:21. Posted October 2012. <https://youtu.be/ROW9F-c0kIQ>.

Boyan Slat combines environmentalism, entrepreneurship, and technology to tackle global issues of sustainability. After diving in Greece, and coming across more plastic bags than fish, he wondered; “why can’t we clean this up?” While still in school, he decided to dedicate half a year of research to plastic pollution and the difficulties of cleaning it, leading to his passive clean-up concept. (Adapted from [TEDx Talks](#) )

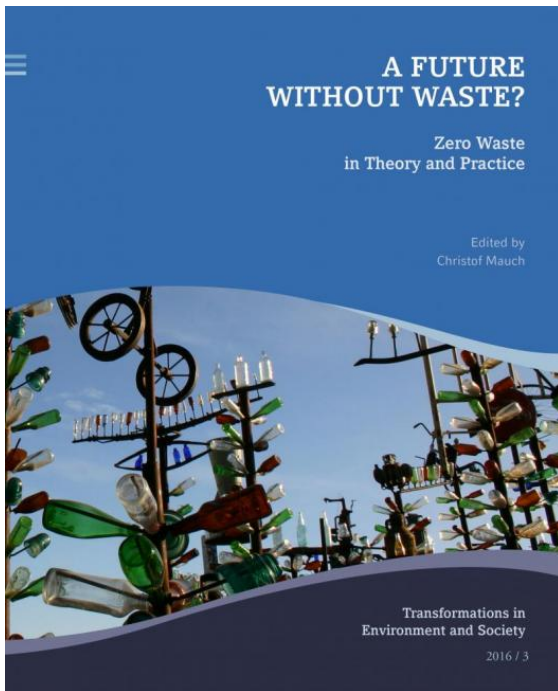
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Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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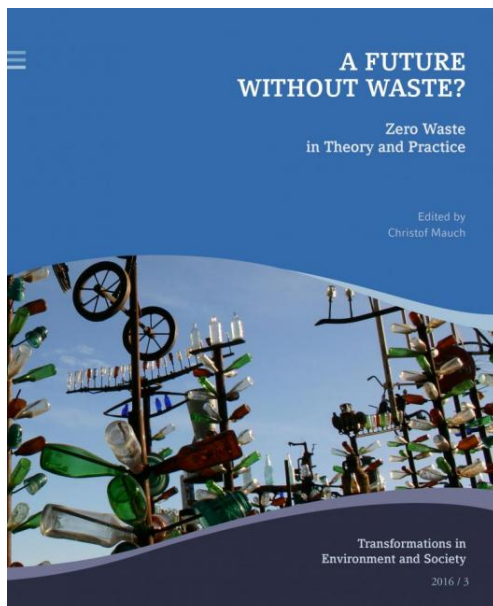
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Tian Song. "An Impossible Ideal: The Use and Misuse of Zero Waste." In: "A Future without Waste? Zero Waste in Theory and Practice," edited by Christof Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 3, 15–25.

Our misplaced loyalty to economic growth and our focus on industrial development have resulted in significant harm to the environment. Yet many wonder if zero waste is a realistic goal. Tian Song argues that it is an impossible deal but proposes that the idea of zero waste can provide valuable insights into how we could establish a future ecological civilization. (Adapted from author's abstract)

[Learn more](#)



Gallini, Stefania. "The Zero Garbage Affair in Bogotá". In: "A Future without Waste? Zero Waste in Theory and Practice," edited by Christoph Mauch, *RCC Perspectives: Transformations in Environment and Society* 2016, no. 3, 69-77.

When mayor Gustavo Petro introduced a new garbage program that would allow informal recyclers to receive proper wages, his plans failed dramatically. Private waste collectors protested his plans and let waste accumulate on the streets. Petro's plan resulted in a hygienic crisis and garbage became a battlefield upon which the struggle for social reform was carried out. (Adapted from author's abstract)

[Learn more](#)

Müller, Simone M. "The Life of Waste." Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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Baldwin, Grant. *The Clean Bin Project*. Canada: Peg Leg Films, 2010. HD 1080, 76 min. <https://youtu.be/tFilb-VhAGE>.

Grant and Jen go head to head in competition to live zero waste for an entire year. The documentary shares moments of humor, struggle, and hope of a couple who asks the question, “what can an individual do?” As they start to garner interest in their project, they struggle to find meaning in their minuscule influence on the large-scale environmental impacts of our “throw-away society.” (Adapted from the [Official Film Website](#) )

[Learn more](#)

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- <http://www.environmentandsociety.org/mml/effluent-america-cities-industry-energy-and-environment>
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- <http://www.cleanbinmovie.com/>
- <http://www.environmentandsociety.org/node/7118/>

Müller, Simone M. “The Life of Waste.” Environment & Society Portal, *Virtual Exhibitions* 2018, no. 3. Rachel Carson Center for Environment and Society. [doi.org/10.5282/rcc/8452](https://doi.org/10.5282/rcc/8452).

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“Abandoned Factory.”

Photograph by Kerttu, 2016.

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E-waste picker in Agbogbloshie, Accra, Ghana. P

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“Waste Dump in Brandenburg.”

Photograph by Jonas Stuck, 2018.



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Waste

Drawn by *Leo Koppelkamm* , 2014.

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“Sorting of household trash on a ship in Utrecht, 1959.”

Photograph by Wouter Hagens, 1959

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“Trash.” Graffiti in Warsaw Poland, 2014. Photograph by Paul Sableman, 2014.

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“Airconditioned Forest.”

Photograph by misterbenben, 2010. <https://www.flickr.com/photos/misterbenben/4447300848/> .

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“Discarded Childhood.”

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A still from the movie *Yellow Cake*.

© 2010 Um Welt Film Produktionsgesellschaft

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“Oh.”

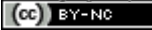
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A singular waste object at an abandoned waste dump in Brandenburg.

Photograph by *Jonas Stuck*, 2018.

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*Waste Atlas* is a crowdsourcing free access map that visualizes municipal solid waste management data across the world for comparison and benchmarking purposes.

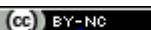
© Waste Atlas 2018

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“Waste Dump.”


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Thinking waste.

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Berlin induces its citizens to proper waste disposal through canny slogans on its waste containers.

Photograph by *Simone Müller* (author), 2015.

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“Fresh Kills Landfill is on the western edge of Staten Island.” Photograph by Matthew Trump. Figure 1 in Martin V. Melosi’s article, “Fresh Kills: The Making and Unmaking of a Wastescape.”

Photograph by Mathew Trump, via Wikimedia Commons.

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Extract from the movie poster for *Eisenfresser/Ironeaters*.

© 2007, Lemme Film

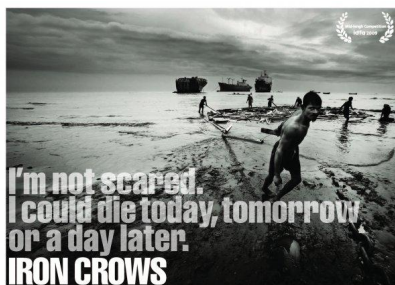
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Philadelphia encourages the public to keep drains clean and unclogged.

Photograph by Simone Müller, 2018



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A still from the movie *Iron Crows*

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Shipbreaking at Alang shipyard, Gujarat India.

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At the market in Alang, vendors sell everything usable from the dismantled ships, ranging from cutlery and antiques to lifeboat provisions.

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“Mohammed Camara, a waste recycler at Agbogbloshie, Ghana, the world’s largest e-waste dump, daily exposes his health to the toxic fumes from burning malfunctioning USB cords and other electronic materials to get to the copper inside.” Caption and photograph by Kevin McElvaney, 2013.

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A family in Guatemala City survives by gathering hundreds of used plastic containers. They classify each of them and even separate them by size. Other families collect only cardboard or tin/aluminum cans and few collect all of them.

Photograph by byroN José sun, 2013.

Photograph by byroN José sun, 2013.

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“Cardboard...” This man has collected cardboard to sell to a recycling center at Bacolod City, Philippines.

Photograph by Brian Evans, 2018.



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Creating waste. “Wasted”, Photograph by Damian Gadal, 2010.

Photograph by Damian Gadal, 2010.  
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Burning tires to scavenge the steel belt wire.

© 2015 Oliver Schwab

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“Waste Lane.”

Photograph by Tim Green, 2012.

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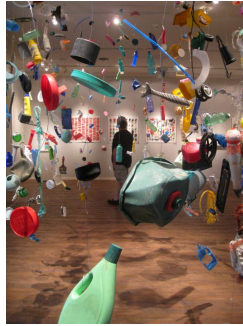
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“Trophy Fish.” Caption and photograph courtesy of Judith Selby and Richard Lang, 2017.

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“With the help of a volunteer team, we collected plastic from a stretch of Matagorda Island in Texas, strung it on brass wires, then hung it from the ceiling to represent the plastic floating in the ocean.” Caption and photograph courtesy of Judith Selby and Richard Lang, 2017.

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*Garbage Dreams*. The Recycling Game.

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*Trash is for Tossers*. Blog logo.

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*Going Zero Waste*. Blog logo.

© Kathryn Kellogg 2015

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“Rust-colored runoff from the abandoned quicksilver ghost town of New Idria, CA.”

Photograph by Matthew Lee High, 2007.  
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General view of a section of the waste disposal facilities at the Dow Chemical Company plant in Midland, Michigan, USA, 1952.


Photograph from the Dow Chemical Company Historical Image Collection, Box Oversized Plants 1, Science History Institute, Philadelphia.

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Drawn by *Nika Kormiyenko*, 2014.

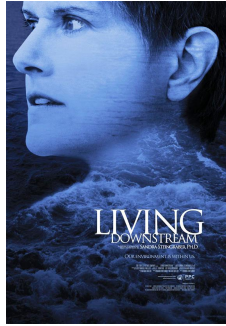
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*Los Afectados*, the affected ones, have been living downstream of the oil production of the American company Texaco for half a century in the Oriente of Ecuador - their decades-long struggle for compensation and clean-up is ongoing. This image shows Donald Moncayo of Toxitours in front of one of the almost 800 oil pits left behind. Photograph by Maximilian Feichtner, 2018. Photograph by Maximilian Feichtner, 2018.



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Poster for the film *Living Downstream*. Poster design by Adam Hunt; Steingraber photo by Benjamin Gervais. Poster © The PPC

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“The Trash.” P

Photograph by Nathan James, 2006. <https://www.flickr.com/photos/nathanjames/96534980/in/photolist-9wLud-2R...>



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“Solid Waste is dumped into trenches at this sanitary landfill.” Photograph by Jim Olive, 1972. Courtesy of The U.S. National Archives.

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- <https://digital.sciencehistory.org/works/cc08hg17w>
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