5. Out of the Bin, into the Open

Looking at the Mediating and Performing Material Afterlives of Data

Tamalone van den Eijnden

Abstract

With the notion of a material afterlife of data, this chapter addresses the issue of unregulated electronic waste recycling as an integral aspect of our digital cultures and the ways we interface with digital data. As such, this chapter not only foregrounds important issues of social and environmental justice as part of digital cultures, but it also counters the historical cultural tendency in Western thinking that privileges disembodied information over materiality. With an orientation toward the ways materiality mediates and performs, I take a new materialist approach in my analysis of the documentary *Welcome to Sodom* (2018). I conclude by proposing that the fire representations in the documentary are a productive imaginary for understanding the material entanglements of the afterlife of data.

Keywords: electronic waste, recycling infrastructures, environmental justice, imaginaries, New Materialism, Welcome to Sodom

Deleting something on an Apple computer provides a satisfactory experience. You softly drag an item to the trash, an elegantly shaped, stainless white bin with a few paper balls, and hear the sound of dry paper folding. In line with anthropologist Mary Douglas's understanding of elimination, perhaps this is "not a negative movement, but a positive effort to organize the environment" ([1966] 2003, 2) in the user's experience. The item is dropped and you immediately feel space opening up in your head…[1]

1 A similar satisfactory experience has been described by Italo Calivo in the context of taking out his household trash to the container in "La Poubelle Agréée" (1994, 93–126); this has been also described by Elizabeth Spelman in "On Taking Out the Trash" (2016, 86–96).

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The aestheticized experience of deleting is not unique to an Apple computer. The bin icon, a closed-off container with a lid, suggests that junk can easily be disposed of and disappear. The idea that we can delete data by simply dragging and dropping them into virtual bins carries and produces three assumptions: 1) data are immaterial, 2) they disappear out of sight once they are dropped in the bin (and the bin is emptied), and 3) after disposal they cease to exist.[2] This principle of the digital white bin is also relevant in contexts that, at first sight, seem different from digital data.

In this chapter, I will use the principle of the digital white bin to examine electronics and their recycling infrastructures. I distinguish two ways in which one can think of the relationship between the logic of the digital white bin and electronics. First, there is a metaphoric relationship: there are aspects of the digital white bin—such as the three assumptions I identified above—that resonate with important principles of electronic waste recycling. Second, I will make the case for understanding the relation also in terms of a synecdoche, another literary device in which a part refers to the whole or the other way around.[3] Understanding the relationship between digital data and electronics as synecdochic foregrounds the material entanglements of digital data culture and electronic waste infrastructures. Such an understanding counters Western cultural assumptions that privilege data's virtuality over material realities.

In her seminal book *Digital Rubbish: A Natural History of Electronics* (2011), scholar of media, culture, and environment Jennifer Gabrys argues that data and information cannot be separated from the various ways their production and recycling produce waste, thus challenging the absolute distinction between data and electronics. She points out that, while any "discussion of information overload may seem remote from the unwieldy and extensive remainders of electronic waste in the form of abandoned computers and other discarded electronics, it is, in fact, an integral part of the processes of electronic materialization" (38). I follow Gabrys's proposition to understand electronics as part of data in general and consider the discussion on waste a productive entry for thinking about the materiality of information. As

2 These three assumptions resonate with scholarly accounts on our relation to waste more generally. For example, Valenzuela and Böhm (2017) do a Marxist and Lacanian reading of the "sustainable" rhetoric of Apple (23–60). Here, the desire of a condition without waste becomes very evident. Below, I will also engage with the accounts of Slater (1971), Graeber (2012), Morton (2013), and Doeland (2019), who also write about the undesirability of being confronted with waste.

3 An example of a synecdoche would be if a bin were taken to refer to a waste management system as a whole.

such, this chapter addresses data in terms of the socio-environmental infrastructures and ecologies of the electronic devices that allow us to interface with data.

Electronic waste, or devices that no longer allow us to interface with data in the desired and expected ways, are often associated with a vocabulary of death. For example, electronics are said to have a "product lifetime" and "product life cycle management." Electronics that are no longer available or receiving updates are dubbed an "end-of-life product." Yet, as material entities, electronics do not cease to exist after disposal, something I refer to as "the material afterlife of data." With the concept of afterlife, I want to draw attention to what happens after disposal. As I will argue, this "afterness" is not only a matter of temporal chronology but also about a relation to reality that, for many people living in Western cities, is experienced as retroactively mediated even if it is always already there on an ontological level. The life of afterlife is a way of conceptualizing the materiality of data as not simply static or dead but rather as performing a certain liveliness within organic and non-organic bodies. With this orientation toward the ways matter dynamically performs, I closely follow Jane Bennett's (2018) understanding of "vibrant matter," and I take a new materialist approach for my conceptual investigation of the material afterlife of data. Specifically, I will examine how this materiality becomes relevant on an epistemological, aesthetic, and ethical level.

The documentary *Welcome to Sodom: Your Smartphone is Already Here* (2018) by Christian Krönes, Florian Weigensamer, and Roland Schrotthofer will allow me to consider together the epistemological, aesthetic, and ethical aspects of the material afterlife of data. *Welcome to Sodom* portrays the lives of people in the city of Agbogbloshie, an electronic dumpsite near Accra in Ghana. "Sodom" is how the people that make their living in Agbogbloshie refer to the place that is a continuous open fireplace, where electronic waste is burned in an uncontained environment and without protection to retrieve valuable metals such as copper. Using this documentary, I develop alternative imageries to the bin icon. The focus on imagery makes clear that the material afterlife of data is not only an epistemological question, but it also requires a critical analysis of the aesthetics at stake, which further provoke ethical questions. As an object that mediates between me and where my electronic waste ends up (e.g., my smartphone, in keeping with the subtitle of the film), the documentary draws attention to the material infrastructural realities that are produced by geopolitical infrastructures of electronic waste recycling. It also highlights the impossibility of innocence in my own viewing position, which is situated in an urban landscape that

mediates an experience of cleanliness, thanks in part to the outsourcing of electronic waste.

The chapter is divided into three parts structured according to the principle of the white bin. First, I counter the first assumption concerning the immateriality of data on an epistemological level by reviewing theories arguing that data should be conceived of as material. Here, I show the relevance of taking what Starosielski (2019) terms an "elemental approach" to understanding how data stands in a synecdochic relationship to the object matter of electronic waste. My turn to the literary device of the synecdoche already indicates the relevance of understanding the materiality of data not only as an epistemological question, but also an aesthetic one. Secondly, I further analyze the aesthetic dimension by problematizing the second assumption that waste disappears out of sight once it is deposed in the bin. I do this by showing how infrastructures of waste recycling mediate unequal viewing positions for seeing what happens with electronic waste, which makes the impression of "out of sight" a privileged position. This, in turn, shows how the aesthetics of visibility provoke ethical questions. Lastly, the ethical dimension is further conceptualized by showing the limitations of the third assumption, which conflates disposal with an end of existence. To this end, I analyze the rhetoric and visual imagery of fire in the documentary to address the ways in which electronic waste performs lively material realities that escape total human control. The fire imagery, I argue, opens an understanding of the materiality of data that captures what is at stake in our digital and wasteful material cultures more accurately than bin-imaginaries.

Towards Synecdochic Epistemologies of Understanding Materiality

Attempts to radically materialize data offer powerful alternatives to a tendency in Western thinking that privileges the immaterial over the material. Marianne van den Boomen et al. use the term "technological mysticism" to refer to a "special brand of technological determinism" in the early 90s, "in which digitality and software are considered to be ontologically immaterial determinants of new media" (2008, 8). Similarly, while critically engaging with some of the aspirations and thought experiments of cybernetic and transhumanist thinkers, postmodern literary critic Katherine Hayles has observed that in many of their accounts, "information lost its body" (1999, 2–24). Hayles particularly criticizes the assumption in the thinking of

Hans Moravec, Marvin Minsky, Nobert Wiener, and Claude Shannon that information retains its meaning no matter which material device holds the information. We may understand how this assumption stands in a longer tradition of Western thinking with the help of feminist theorist Elizabeth Grosz (1994), according to whom the body "has remained a conceptual blind spot" in Western mainstream and feminist thinking about subjectivity, for which Descartes's dualism was foundational. Grosz takes issue with prevalent binary approaches that separate mind and body, privileging the mind over the body, the latter of which was understood as "nonhistorical, [...], passive, inert" (3). Yet, since at least the 1990s, there have been important academic contributions that theorized the body of information.

In *The Stuff of Bits: An Essay on the Materialities of Information* (2017), computer scientist Paul Dourish brings together insights from computer science and social science and draws attention to the inherent materiality of information. The focus of his book is on the ways in which representation of data is a material phenomenon (4). He argues "that the material arrangements of information," which include the ways in which data is represented and made available to users and operators, affect the ways in which the information can be experienced (4). Elements of such a materiality are the "formats that constrain, enable, limit, and shape the ways in which those representations can be created, transmitted, stored, manipulated, and put to use" (6). This complicates naïve ideas of the translatability of information regardless of the material body that Hayles famously criticized. In this way, Dourish goes beyond what Grosz identified as a "blind spot" in Western thinking. His work typifies an approach that looks at the materiality of information.

Such a materiality of data is different from what van den Boomen et al. mean by data as "in-material," by which they point to the reality that data's virtuality is only possible thanks to the materiality of the electronics that allow us to interface with data (2008, 9). A scholar who foregrounds the materiality of electronics as an important constituent of digital information is Gabrys (2011), whose work I have already cited above. A similar approach can be found in the work of Jussi Parikka's *Geology of Media* (2015). To Parikka, media not only help to understand geology and climate but also make up part of it as discarded media and technological artifacts sediment into geological layers (2015, 60). More recently, in *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (2021), Crawford considers artificial intelligence (AI) in terms of different material aspects, such as the materials from which it is produced and the labor that goes into it. The dimension of social exploitation that goes with the environmental one

resonates through all the accounts above and is also addressed by other scholars such as Christian Fuchs, who, in his critical introduction to social media, also acknowledges how the hardware that enables our digital cultures involves labor exploitation in various Asian and African countries (2014, 120).

Media, Culture, and Communication theorist Nicole Starosielski considers work that is characterized by an interest in the substances of media the "elemental turn" within media studies (2019, 1).[4] She thereby draws on the various meanings of the word element, such as the Greek and periodic elements and the ecological sense of the term, as in "being on one's element" (1). This elemental orientation often goes with an ecological concern that also offers a foundation for the politicization of the substances of media (2). An elemental approach to media studies, then, brings into focus "a network of infrastructural and ecological phenomena" (3). Recognizing the importance of the work of Gabrys (2011) and Parikka (2012), Starosielski nonetheless concludes that research on electronic waste "remains an understudied area" (3). In this chapter, I want to contribute further to this field of research by examining more specifically what such an elemental turn towards data studies could bring. To this end, I take an elemental approach that both relates to my interest in the substances of electronic waste and also brings the element of fire to the conversation.

Considering that the Greek elements of water, air, and earth permeate the ways we talk and think about data, it is quite striking that the element of fire has been largely omitted so far. Water has become a relevant metaphor for thinking about data, as is evident in expressions such as "data streams" (Hwang and Levy 2015). And in her academic work Melody Jue, (2020) proposes rethinking media studies from the perspective of the ocean. Air as an element can be traced in data vocabulary through metaphors such as "the cloud," (Hwang and Levy 2015), an aspect that also returns in the scholarly work of John Durham Peters (2015), Eva Horn (2018), and Derek McCormack (2018). The element of earth finds its way into thinking about data in terms such as "data mining" (Hwang and Levy 2015). Moreover, the critical approaches I outlined above—Gabrys (2011), Parikka (2015) and Crawford (2021)—seek to materialize data with earthly imagery, even though this imagery operates according to the principle of different literary devices.

Crawford chooses what can be understood as a metaphorical perspective. To "ground" lofty ideas on AI in material realities, she employs the "earthly" perspective of the atlas. By using the concept of an atlas to look at the

4 With the term "elemental," Starosielski draws on scholars who have already used the term to define their own writing; her intervention is to use it to describe an emerging field.

phenomenon of AI, she emphasizes that her account of AI is a "collection of disparate parts" that form a "particular viewpoint of the world" and also how AI is enmeshed with material and capitalist forces (2021, 9–11). Understanding looking at AI *like* an atlas illuminates shared principles between a material account of AI and an atlas. Yet, the atlas is not part of AI, nor is AI part of the atlas. Such a metaphoric perspective still suggests a certain distance from the actual materiality at stake. By contrast, Parikka's idea of a geology *of* media provides a synecdochic way of looking at the materiality of media.

To Parikka, geology is not only a way of looking at media; it also refers to the ways media materially sediment into geological layers, forming landscapes of what may be understood according to Parikka as "media-natures" (13). A synecdochical understanding of media as part of geology stages—more centrally than a metaphoric approach—the ways in which the materiality of information engenders geo-realities. Following this line of thinking as I analyze the material afterlife of data, I examine the afterlife of electronics as part of our digital cultures, including the infrastructures of waste management and the practices of separating materials by means of open fires. Consequently, in my analysis of *Welcome to Sodom*, I largely leave aside metaphorical allusions to the "Sodom" from Abrahamic religious texts. Taking a synecdochic approach to show data's materiality illustrates how this is not merely an epistemological question but rather an issue that requires an aesthetic analysis sensitive to how we look at the material afterlives of data.

The Aesthetics of Mediating Infrastructures

An important aspect of the aesthetics of disposal, introduced as the second assumption of the digital white bin, is the idea that what is discarded into the bin disappears out of sight. When we are welcomed to "Sodom," we are invited to look at one aspect of the materiality of data that did not disappear, namely at how electronics are recycled. Yet importantly, we do not physically go to Agbogbloshie to look, since our looking is mediated through the documentary. "Your smartphone is already here—*while you are sitting at a safe distance on your couch*" might as well have been the extended subtitle of the documentary. *Welcome to Sodom* shows how the spatial distance between me and "my" discarded phone plays out on several levels, mediating different inequalities between me and what I am looking at.

Mediation, in its broadest sense, refers to the way things are made to be seen. Such a definition would allow also us to understand urban infrastructures as mediating factors in the way a city is made to be seen. Media and performance scholars Nanna Verhoeff, Michiel de Lange, and Sigrid Merx (2019) propose understanding the city in terms of its mediality, which entails "understanding city life [...] *as media* that communicate, inform and connect." With reference to Kevin Lynch, they show how the city has been understood as a text that can be read and that "informs people about accessibility and navigability," among other things. Following this line of thinking, infrastructures of waste management and recycling mediate experiences concerning cleanliness, organization, and welfare.

How waste recycling infrastructures mediate a particular experience may be further understood with anthropologist David Graeber (2012), who analyzes some of the ideological implications of urban waste management infrastructures. Graeber observes that waste incineration, similarly to crematoria, factories, and hospitals, are mostly located outside the city in accordance with Western cultural preferences of avoiding questions of the beginning and end of life, whether they concern humans or commodities (277–78). In this logic according to Graeber, commodities "are imagined as having magically appeared, proceeding to 'circulate' [...] and then, finally, disappear into that same abyss from whence they came" (279). Following this argument, Western cities are built to mediate a reality that avoids this confrontation, which, most relevantly for this chapter, also means a peripheralization of infrastructures of electronic waste recycling.

For large parts of Western urban populations, this may then evoke the impression of an experience in which waste ceases to exist as a pressing material reality. Such obscuring infrastructures allow for a perceived reality that sociologist Philip Slater (1971) has dubbed "toilet assumption," which is "the notion that unwanted matter, unwanted difficulties, unwanted complexities and obstacles will disappear if they are removed from our immediate field of vision" (33). As philosopher Lisa Doeland (2019) has pointed out (5), the more recent iteration of this idea is philosopher Timothy Morton's (2013) "ontological u-bend" of the toilet that magically makes waste disappear "into a different dimension" (31, 115). Thus, urban infrastructures that push waste out of sight/site mediate an experience of a wasteless city.

Since waste does not actually disappear after dumping it, the wasteless city is not an experience for everybody, and thus "welcome to Sodom." In 2018, the documentary tells us that 250,000 tons of electric waste are illegally shipped to Ghana annually. This has made Agbogbloshie one of the most toxic places on earth. It is victim to what Rob Nixon (2011) has termed "slow

violence," as the dumping of toxic waste is "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (2). As Nixon also points out, this violence occurs in a geopolitical context in which many Western countries ship their waste material to countries with less strict environmental laws (Nixon 2011, 1; Gabrys 2011, 95; Tong and Wang 2012, 98–101). This dynamic, by which pollution and the burden to recycle is pushed to the territories of Indigenous Land and former colonies is, with Liboiron (2021), "an enactment of ongoing colonial relations to Land" (6). Environmental degradation, with destructive consequences for soil fertility and human and animal health, is more likely to take place in areas that historically suffered from European exploitation and where the people bear the least responsibility for "the mess." In the context of climate change, environmental studies scholar Sherilyn MacGregor (2019) already notes that the idea that we are "in this mess together" does not hold (57). The documentary makes it very visible how only some must deal with the emissions of toxins, as illegal recycling practices only take place in countries with more vulnerable geopolitical positions. In this way, infrastructures of waste recycling not only benefit from existing inequalities, but they also further entrench these structures as they exacerbate the disadvantages of impoverished areas.

Agbogbloshie should therefore not be seen as an isolated place but rather as the material result of the mediation of waste-free cities elsewhere. I can discard my phone without having to look at the waste and all its repercussions due to infrastructures that ship my phone to Ghana. Being able to not see the waste is a luxury that produces an infrastructure of waste recycling with unequal viewing positions. I am able to watch the documentary at such a safe distance that I can see the flames of the fires without feeling the biting smoke in my eyes. But there is also a distance in time, a sense of posteriority that allows me to look back at a dangerous situation after the fact. In my viewing experience, the material afterlife of data is something I can observe without being immediately physically affected by it. These privileges of looking are not merely questions of comfort, as they further produce an aesthetics that is not neutral but instead thoroughly entangled with sociocultural issues of representation.

If the geopolitical recycling infrastructures mediated unequal cityscapes, where not to see waste is a privilege, looking at the materiality of data through the mediation of a documentary privileges me again, but now as a viewer. The aesthetics of "who looks at whom" are not neutral but are instead entangled in complex power dynamics that cannot be separated

Fig. 4. A man burning electronics (*Welcome to Sodom* 2018).

from histories of colonialism and exploitation; this has been pointed out by many scholars, perhaps most famously by Edward Said ([1978] 2003). In the case of looking, as a white European, at *Welcome to Sodom* through the camera and eyes of white European documentary filmmakers, these "looking-relations" further highlight the inequality that is aesthetically mediated by the infrastructure of waste recycling with unequal viewing positions. Thus, thinking about the materiality of data is not merely an epistemological question of understanding what happens with electronic waste; it also makes me part of an aesthetic regime in which I as a viewer cannot remain innocent. Even though the materiality of data is pushed far outside the border of many European cities, it does not actually disappear out of sight. Instead, it produces infrastructures from which problematically unequal viewing positions come forward. The material implications of these unequal viewing positions raise ethical questions.

The Ethics of a Fiery and Lively Performance

The third assumption produced by the bin icon is the idea that data ceases to exist after dispoal. Shipping electronic waste outside of Europe rearticulates this assumption, as if electronics will stop "being" waste there. Yet the contrary is true, as can be seen in the documentary *Welcome to Sodom*, which gives insight into the ways that electronic waste performs lively

material realities. The performative dimension of waste becomes especially clear through the imagery of fire, which is represented not only as a tool for recycling but also as a force to be reckoned with. By analyzing the destructive force of fire, I foreground the ethical dimension of the material afterlife of data, as it raises various questions concerning justice.

The documentary is full of fire imagery, ranging from perfectly composed close-ups of burning matter to more distant fires and thick gray smoke trails in the background, which are as much part of the landscape as the omnipresent litter. In the opening scene of the documentary, we hear the voiceover of a child telling a mythical story about how a paradisiacal piece of land was set on fire by the gods as punishment for the uncaring behaviors of the people living there. A similar message is already part of the title of the documentary, which in fact quotes from the song "Welcome to Sodom" by Agbogbloshie's local rapper. "Sodom," the documentary tells us, is the way people living in Agbogbloshie refer to their place. It is a reference to the Sodom that is mentioned in religious texts of Judaism, Islam, and Christianity, a city set on fire by God as a punishment for sinful behavior. The ubiquity of the reference to the fire as punishment shows how the people understand the fire as a curse. Their livelihood depends on fire and is simultaneously endangered by it. It also shows that the cursed fire is a way for them to make sense of their work and existence in Agbogbloshie.

Besides this entanglement between fire and place, the documentary also shows us that people understand their own identity and work as enmeshed with Agbogbloshie's fires. "I am a man of fire," we hear the voice over of a young man saying, and he also relates this statement to his reluctance to jump into a fragile boat to cross the Mediterranean (00:35:00 min).[5] This "man of fire" identity comes with a certain pride in his craft. "I know about fire, I burn everything. Cables, screens, computers. I burn everything and get the copper out [...] For me, it's a good thing. It separates the metals from plastic. The fire always creates something new, fresh copper" (00:24:00–00:25:00). Fire is his identity, his skill, his recycling work. Fire is not just a tool for separating materials; fire is the *process* by which materials are separated. Thus, fire is the curse of the place, identity of the people, a skill to be mastered, and the process by which recycling is done. As such, fire is as much part of electronics (and by extension the material afterlife of data) as media are part of geology in Parikka's theory. Therefore, fire stands in a synecdochic relation with electronics.

5 All quotes from *Welcome to Sodom* are my own translations from the German version of the documentary.

Understanding fire and its potential to accelerate transformation as a synecdochical part of electronics foregrounds the performative quality of matter and opposes the idea that old electronics are dead, passive, and inert. This performative quality materializes as a threat. The voiceover, belonging to the same young man who took pride from his work with fire, also acknowledges, "They say that the fire is a monster […]. It is also said that the fire makes the heart of the people black. No one can see it, but it turns you into a dark creature, a ghost, non-human […] It gets into your body and makes you crazy, makes you sick" (0.24–25 min). Similarly recognizing the dangerous game of power and control, another young man says more generally "Sodom is a beast. Sometimes you kill the beast, and sometimes the beast kills you" (01:25:00 min).

In evoking imageries of monsters and beasts, the young men are addressing the ways in which the fire aggressively escapes human control. Fire gets into the body and changes it so profoundly that it makes the person lose their mind, changing them into "a ghost, not human." Even though humans initiate and can direct the material transformations of electronics, the fire as monster or beast is a reminder that this control is not complete and that electronic waste keeps performing in non-human and dehumanizing ways. As has been noted by Gabrys (2011) already, "[w]hile recycling appears to be a way to rid ourselves of remainder, to incorporate neatly all that is leftover, it in fact performs a deferral and inevitable return to the death of objects" (137). Similarly, Doeland (2020) writes that waste does not go "full circle, but in uncanny loops" (22). In burning electronic waste, matter performs in uncontrollable ways, allowing plastic and heavy metal to leak, sediment, and evaporate "outside the circle" of zero-waste recycling into the human body and other environments. As Jussi Parikka puts it, together with Garnet Hertz, "media do not die; media persists as electronic waste, toxic residue, and its own sort of fossil layer of disused gadgets and electronics" (Parikka 2015, 141). Contrary to the assumption that waste ceases to exist after disposal, matter thus reveals itself not as being dead but rather lively in how it molds new realities, or "vibrant," following Jane Bennett (2010).

As electronic waste materially performs in uncontrollable ways, it also narrates its own stories. With electronic waste creeping into new bodies and environments, the context, materiality, and even meaning of the electronics change. Gabrys points to this when she writes:

> In this sense, a dump is not just about waste, it is also about understanding our cultural and material metabolism. A dump registers the speed and voracity of consumption, the transience of objects and our relation with them, and the enduring materiality of those objects. (2011, 16)

While a phone in Europe "contains" my personal data, on a dumpsite in Ghana, the phone tells of a capitalist and consumerist lifestyle in certain parts of the world, one that a person doing the recycling inhales via evaporation. It becomes a "dark creature" that might kill and, as such, testifies to the slow violence of exploitative and unhealthy working conditions. Leaking into the marshlands of Agbogbloshie, it hardens and deposits into a geological layer that may be thought of as the Anthropocene.[6]

Taking the open fires of "Sodom" as synecdoche of the materiality of data offers an unsettling perspective on electronic waste. It provides a lens that highlights the troubled view in which matter is precisely not settled in a closed container, performing its own realities. It is also unsettling from an ethical perspective, as it clearly brings into relief the necessity for a justice-driven approach. Who is accountable for the repercussions of slow violence in human animal health and suffering? Who is responsible for the environmental degradation? How can we imagine a world with infrastructures of electronic waste recycling that are less damaging?

Concluding with Fire

According to Amitav Ghosh, the "climate crisis is also a crisis of culture, and thus of the imagination" (2016, 9). The crisis Ghosh is writing about results from a dissonance between the stories we tell ourselves about the world (as calculable and with the capacity for ever-increasing luxury) and the reality of climate change. As I have shown in this chapter, we also face a crisis of imagination when it comes to our digital cultures. Taking an elemental media studies approach to conceptualizing the afterlives of data, I have centered my analysis around the material afterlives of electronics as represented in the documentary *Welcome to Sodom*I have drawn attention to the crisis of how we

6 I am using the concept of "Anthropocene" here because this is the concept that Parikka uses in *A Geology of Media* (2015). It is a concept that has been popularized by meteorologist and atmospheric chemist Paul J. Crutzen along with Eugene Stoermer around the beginning of the century and sparked much research interests across disciplines. This scholarly attention also includes productive critique of the concept and proposals for alternatives that take a more political approach to the seemingly neutral and universalizing category of "anthropos." For example, Jason W. Moore (2015) proposes the Capitalocene, a concept that Haraway (2016) suggests alongside the Chthulucene. Additionally, the concept of the Plantationocene has been proposed by scholars such as Haraway, Ishikawa, Gilbert, Olwig, Tsing, and Bubandt (2016) along with many relevant critiques calling for decolonizing the Anthropocene, such as those formulated by Yusoff (2018) and Davis and Todd (2017). All these critiques are highly relevant for the specific manifestation of the "Anthropocene" in the case of Agbogbloshie.

look at the material afterlives of data by showing the unequal viewing positions on the material afterlife of data produced by electronic waste recycling infrastructures, which benefit from historical geopolitical inequalities. The open fires of "Sodom," I proposed, could serve as an alternative to the convenient bin imaginary in understanding the material implications of our digital cultures.

On an epistemological level, I have shown that understanding the materiality of data offers insight into the implications and limitations of our digital culture and thereby importantly counters a historical bias in Western thinking. On an aesthetic level, understanding the materiality of data is not only an exercise of abstract thinking, but it is also about perceiving, visualizing, and imagining. I have particularly emphasized the productivity of a synecdochic perspective on the issue through the imagery of fire. As part of the materiality of data, fire also highlights an important part of said materiality, namely the ways in which it is uncontained, lively, and threatening. As such, it offers a more accurate image for what is happening with electronic waste than the bin icon. Imagining the material afterlife of data in terms of an open fire instead of the bin icon is not yet an answer to the "crisis of imagination" that Ghosh writes about. Yet it does bring into focus a crisis that is "infrastructured" out of sight in many Western cities, namely the illegal dumping and unregulated electronic waste recycling that is visualized in *Welcome to Sodom*. As such, imagining the materiality of data in terms of the open fire exposes the ethical dimension of this materiality. As I have shown, the viciously lively performance of matter provokes questions concerning human, animal, and environmental justice. Understanding these justice-related issues as an intrinsic aspect of a particular Western digital culture is a necessary first step to reimaging and reconfiguring current infrastructures of electronic waste recycling. Finding ways to counter the crisis of imagination is not something that is done easily. Yet, this chapter is perhaps able to outline a first step—that is, visualizing the crisis along with all the problematic histories that come with such a task. The image of the open fire, I want to propose, synecdochally illuminates the material afterlife of data and therefore of digital culture more generally. It shows both "a positive effort to organize the environment," again following Douglas, and the incapacity to do so as material forces escape human control.

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About the Author

Tamalone van den Eijnden is a PhD candidate at the University of Twente, Department of Technology, Policy and Society. She works within the BIOTraCes Project where she studies the social-ecological phenomenon of community-led farming from a feminist science and technology studies perspective. Her background is in Media, Art and Performance Studies, with a research focus on imagining futures in the larger context of climate change.
> t.g.a.vandeneijnden@utwente.nl