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Dirty or clean? Frameworks for waste

Annabelle Mooney iD
University of Roehampton, UK
E-mail: a.mooney@roehampton.ac.uk

Abstract

The language used to talk about waste reveals the structuring stories and frames that are used by waste professionals. The data analysed in this paper demonstrate that waste is framed in relation to business and economics, the environment and nature, and in relation to cultural norms about dirt and matter being out of place. More generally, the language of waste focusses on value(s), systems and cycles. In this paper, I analyse the language used by waste professionals in Seattle, Washington to identify the different frames through which waste is seen. Close comparison of these discursive frames reveals their absences and tensions, especially in relation to business and environmental understandings of waste. In addition to documenting these frames, I argue that a distinction between use value and exchange value is important in the field of waste as it helps to distinguish between waste as a commodity and waste as a (natural) resource. I further argue that by considering different conceptions of time (natural, cultural and individual), it becomes possible to see the kinds of actions that need to be taken in order to deal with waste. Finally, by reflecting on recent changes in attitudes to plastic waste, arguably caused by a media event, I suggest that the frames themselves may be useful in reminding and reframing our relationship with waste.

Keywords: waste, garbage, linguistics, framing, ecolinguistics

1. Introduction

We've made it so that people really don't have to connect to their waste at all really. Don't have to think about it. (W1)

The contemporary western world is designed to minimise the attention people need to pay

to waste. What is thrown away, what is excreted and disposed of, is simply "away".[1] Recycling is collected, garbage is buried or burnt, and toilets are flushed. These materials do not go *away* because, as one informant remarks:

> There is no "away",[2] so you may think it goes away, but it's actually sitting in the landfill for 400 years, or it dropped to the bottom of the landfill and leaked out the bottom… yeah everything goes everywhere. (P1)

Another informant echoes this from a different angle when reporting on their "total job security" as "[waste is] never going away. It's never going away" (W2).

In this paper, I begin an exploration of the language of waste. While "waste" includes a great many materials and objects, in the current study, "waste" includes human waste (flushed down the toilet or down drains), garbage and trash, and items deposited in a recycling container or taken to a recycling point. There are a number of reasons why it is worth exploring this realm at this broad level. Given the state of the global environment, climate change, and the generally accepted fact that we are living in the age of the Anthropocene, in which "Humans now wield a geological force" (Chakrabarty, 2009, p. 206), human activity of all kinds is worth attention. While talk of a "waste crisis" does occur, especially in relation to household waste and levels of consumption, some argue that such a crisis is over-stated (O'Brien, 2008). Nevertheless, as waste is necessarily produced by human life and as some materials are easier to safely dispose of than others, it does seem worth thinking about the language and mental models that people use in this domain. While we may or may not be experiencing a waste crisis, dealing with waste of all kinds has always been a challenge (see e.g. Hounsell, 2013; O'Brien, 2008; Stokes, 2014).

The waste my informants work with does not represent the full load of garbage that people generate. Solid industrial, manufacturing and building waste, for example, are not the central concern for anyone I spoke to. Nevertheless, if we focus on material that is accessible to, if not always acknowledged by, ordinary people it may be possible to map the stories that need to be told if the ongoing challenge of waste is to be met and the human environment is to be maintained. As Ghosh (2016) argues, climate change is difficult to arrest in part because of the impossibility of imagining it. The waste that we all produce has the virtue of being (at least potentially) visible, touchable and smellable, if only we would bring it into focus.

2. Waste

There is extensive literature on waste of different kinds and from different perspectives.[3] It is not possible to detail it all here. Nevertheless, the range of work on waste does

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[1] There is a reason the Western flush toilet system is called "flush and forget".

[2] This is a long-standing slogan/mantra of the environmental movement and was quoted as such by P1.

[3] Work on waste may also be classified as "garbology" or "discard studies" (https://discardstudies.com).

demonstrate the variety of garbage that humans produce and its various trajectories after we have disposed of it. At the accessible end, books tracing the route of consumer garbage and waste provide a detailed view of the trajectories, processes and final destinations that waste is subject to (see Humes, 2013; Minter, 2013; Rogers, 2005; Royte, 2005). Historians have also charted changing regimes in waste collection and disposal (see e.g. Hounsell, 2013; Stokes, 2014), while philosophers and cultural theorists have navigated the complex intellectual and human relationship with waste (Hawkins, 2001, 2006; LaPorte, 2002; Scanlan, 2005; Strasser, 1999). "Waste studies" is a field in literature (e.g. Dini, 2016, 2018; Morrison, 2015), and there is significant work in sociology (O'Brien, 2008) and anthropology (e.g. Evans, 2014), including an extensive ethnography of New York sanitation workers (Nagle, 2013). In all this work, a common touchstone is Douglas's *Purity and Danger* (1984 [1966]) exactly because of her careful treatment of matter and its place together with an understanding of the people who work with what might otherwise be considered taboo. Finally, perhaps the best-known work about trash is that which is widely regarded to have founded the field of "garbology"; Rathje and Murphy's *Rubbish! The Archaeology of Garbage* (1992). This describes the long-running Garbage Project at the University of Arizona. Taking a scientific approach to garbage and using the tools of archaeology, this work literally excavates waste from domestic trash and from landfills so that we can better understand its social and cultural origins.

While there is little in linguistics that deals with trash and rubbish, attention has been paid to waste in the field of ecolinguistics (see e.g. Chen, 2016; Harré, Brockmeier & Mühlhäusler, 1999; Mühlhäusler, 2001 [1983]; Poole & Spangler, 2019). Among other things, scholars in this field examine both referring practices and the analytical lenses that different languages and language resources provide to describe and act on the environment in general and specific ways. Stibbe writes:

> … ecolinguistics consists of questioning the stories that underpin our current unsustainable civilisation, exposing those stories that are clearly not working, that are leading to ecological destruction and social injustice, and finding new stories that work better in the conditions of the world that we face. These are not stories in the traditional sense of a narrative, however, but rather discourses, frames, metaphors and, in general, clusters of linguistic features that come together to convey particular worldviews. (2013, p. 117)

In this paper, I focus on discursive frames in order to determine the fault lines in the current stories we tell ourselves about waste. My focus is not so much on the specific lexical and syntactic choices made but rather on making sense of the discursive contours of the frames and the connected ideologies that underpin the language of waste. In my conclusion, I draw specifically on Harré, Brockmeier and Mühlhäusler's (1999) differential orders of time to reframe our stories about waste.

3. Methodology

In this paper, I draw on material collected on a short field trip to Seattle, Washington, USA in early 2019. The data comprises ten interviews with people working in the waste sector (including NGOS, government employees, and recycling company owners and employees) as well as documents and plans from government agencies, non-profit organisations and lobby groups, and field notes from site visits to recycling facilities.[4] The collected transcripts of interviewee responses ran to 63,142 words. All interviewees are connected either to Seattle itself or to the separate surrounding municipality, King County. In the following, however, I refer to "Seattle" as I am not exploring differences or similarities between the city and the county. Further, because individuals were spoken to in an unofficial capacity, their identities (and the organisations they work for) are not disclosed.[5] Erasing the difference between Seattle and King County is therefore connected to the anonymisation of the data.[6]

There were three reasons for starting in Seattle. First, it has a good solid waste processing programme. "Seattle Municipal Code sections 21.36.082 and 21.36.083 require that residents and businesses do not put food scraps, compostable paper, yard waste, and recyclables in their garbage." (Seattle Public Utilities, 2019). Residents are provided with kerbside garbage, recycling and compostable collection. Recycling collection is free. Garbage is collected in a separate receptacle, as is yard waste (grass and tree waste). The size of these two boxes dictates how much the resident is charged for it. Smaller boxes cost less than larger ones.

The second reason for conducting fieldwork in Seattle is that I do not live there. The effect of considering waste in a foreign place (albeit with a generally common language) is productive. The simple fact that processes are unfamiliar and that consumer brands and packaging differ heightens awareness. This foreignness also led to there being less local and regulatory "common ground" with interviewees, which resulted in them explaining to me the particular attributes of Seattle and the King County region in relation to waste practice and process. Finally, it was possible to access a range of waste facilities by means of tours and visits (something which does not seem to routinely occur in London, UK for example).

Contact was made by approaching recycling businesses, contractors and public officials. At one site (a Materials Recovery Facility: MRF pronounced "merf"), permission was given to record a public educational event and subsequent tour of the facility (fellow attendees were not recorded). Two visits were recorded only with handwritten field notes: a public tour of a second MRF and attendance at a Washington Environmental Council Lobby Day

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[4] Interviews ranged from 40 minutes to three hours. A booked trip to the Cedar Hills landfill was unhappily cancelled due to snow.

[5] Nevertheless, to these anonymous informants go my sincere and abundant thanks.

[6] It is worth noting, however, that while King County disposes of waste at Cedar Hills Regional Landfill, Seattle transports its garbage out of state on trains. It is currently sent to Oregon. A video of the garbage train, which runs six days a week and is over a mile long, can be seen at https://www.youtube.com/watch?v=D2HriC6vSYg [accessed 10th April 2019].

in Olympia, Washington on 29th January 2019 (WEC, 2019).

Interviews with two friends of friends led to further contacts and introductions. Interviews were conducted in person, over the phone and through Skype. They were semi-structured, designed simply to elicit talk about waste. In preparation for interviews, I familiarised myself with the institution the individual worked for and the work they do. I generated questions ostensibly to find out about how their organisations work with waste, and their policies and practices. I also asked questions on their professional and personal views about the kinds of waste they deal with and invited them to speculate about how their work was seen by other people. The goal was simply to gather language on the general topic of waste. An early field trip to a recycling facility was also used as a way of asking questions to those working with solid waste.

All interviews were manually transcribed by me. Examples presented here are edited for clarity, removing hesitations and false starts. Data were collected according to ethics procedures at the University of Roehampton. In accordance with these procedures, and as discussed above, individuals are not identified. Instead, the very general field in which the interviewee is working is signalled by a letter. This is followed by a number for successive informants. **W** indicates someone working in wastewater (sewerage, stormwater, etc.); **P** indicates someone working across fields in an institution or other entity, including non-profits; finally, **SW** indicates anyone working with solid waste, including landfill, recycling facilities or composting.

In collecting data, my hypothesis was that much like Carole Cohn's work (1987) on defence professionals' discourse in the 1980s, I would find a language used specifically by waste professionals to describe the materials they handled and the processes they undertook. While this was true to some extent, there was evidence that, at times, interviewees moderated their language to accommodate to my non-expert status. Technical terms were explained, regulatory regimes were unpacked, and other terms were defined. Nevertheless, it became clear that those working in waste processing and prevention draw on a number of interrelated discourses that reflect the nature of the work that they do and cut across business, regulation and environmental concerns. SW3 describes their job working in recycling as follows:

> I liked the fact that I was recycling and doing something to help the earth. That really worked for me. But there was a big business application to it too and the thing I still like about my job is the variety. I mean I do some customer service … I make all the business decisions, I do some truck driving, I do a lot of forklifting.

In these lines, the informant initially refers to environmental concerns, "doing something to *help the earth*", but also references the business and personal side of their operation, including strategic decisions and working with members of the public. This short extract demonstrates a wider truth: the waste business embraces a multitude of actors and domains. Indeed, it is impossible to talk about "waste" as a single thing. To different actors,

it is defined very differently. While the identification of frames was led by lexical signalling, the focus here is very much on identifying the mix and overlap of discourses that informants draw on. Three discourses emerged: a business discourse, an environmental discourse and a cultural discourse.[7]

Data were analysed using frames. Synthesising existing work on frames, Stibbe defines a frame as "a story about an area of life that is brought to mind by particular trigger words" (2015, p. 47). Similarly, "framing" is "the use of a story from one area of life (a frame) to structure how another area of life is conceptualised" (Stibbe, 2015, p. 47). Finally, "reframing" is "the act of framing a concept in a way that is different from its typical framing in a culture" (Stibbe, 2015, p. 47). In Stibbe's definitions, frames bear a relation to both narratives and metaphor. In relation to the former, frames can suggest causal relations, evaluations and therefore further action. This also aligns directly with Entman's view of frames as something which can "define problems", "diagnose causes", "make moral judgements", and "suggest remedies" (Entman, 1993, p. 52). As framing applies "a story from one area of life" to another, it also bears a relationship to metaphor (Lakoff & Johnson, 1980). Further, Stibbe identifies a "source frame" and "target domain" when undertaking analysis. The source is the different area of life; while the target is the "general area being talked about" (2015, p. 52). In this paper, the general area, the target frame, is always waste. The different stories used to frame it range from the natural world to business transactions.

I identified source frames through trigger words. That is, lexical items trigger the stories that in turn frame waste. For example, to talk about waste as being financially valuable reveals the frame WASTE IS A COMMODITY. References to markets, monetary value and trading were treated as indicating the presence of this frame. Data were manually coded by identifying semantic fields through content analysis. These were then loosely coded. The codes were then revisited to collapse and refine recurrent frames. Finally, the frames were found to group together under three discourse umbrellas: business, environment/nature and cultural systems. It should be said that the frames and discourses identified in this paper do not exhaust the data.[8] Rather, they are presented here as they were recurrent and specifically relevant to waste talk. The frames set out the orientation points which may be useful in further detailed analysis of the data. In the following, I articulate the relevant frame as a proposition. For example, when interviewees discuss the potential of waste to

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[7] While scientific discourses were also present, these are not considered in this paper. These came largely from technical experts and were closely linked to local regulatory regimes. For example,

> [they] are secondary treatment plants so they can — you know their limits — the state sets the limits in the permit for us to meet. But they are you know typically 10 to 15 milligrams per litre of BOD (Biochemical Oxygen Demand) and total suspended solids. And it's very good treatment. (W3)

While scientific discourse and knowledge are important in the world of waste, I do not deal with it separately here.

[8] Other frames and metaphors were found including SPEECH IS MONEY, BUSINESS IS WAR, COUNTRIES ARE CONTAINERS and PROGRESS IS LINEAR.

generate electricity, the frame is called WASTE IS ENERGY.[9]

Because of the propositional structure of the labelled frames, tensions and absences are clear when they are compared. This is not in itself controversial. All individual frames (and indeed discourses) will have such lacks as "framing essentially involves selection and salience" (Entman, 1993, p. 52). The advantage of exploring a diverse data set is that the variety of frames and discourses present makes the particular absences and contradictions in the general domain of waste clear. These differences are valuable, as together the data build a fuller picture of the complex world of waste. This then provides fertile ground for productive reframing.

4. Three discourses, multiple frames

As mentioned, the frames tended to fall into three broader discourses: environmental/ nature, business and cultural systems. These discourses are more abstract than frames and are, in Fairclough's terms, "orders of discourse" (1989, p. 29). It became apparent, however, that the tensions between frames are best examined by presenting the frames in a different way. That is, rather than focus on their realisation, I turn instead to the values and ideologies they are rooted in and presuppose. Therefore, in the following, I deal first with systems. I set out what these systems look like and the values to which they are connected. I then focus on two very different values that are given to waste. Some of these are financial, and some focus on utility and potential. This difference becomes clear in the distinction between "resources" and "products". This attention to value and values is consistent with a more general approach to frames, which suggests the analyst should consider the values embodied by the frame, whether a response is required and whether the frame should be challenged or replaced (Stibbe, 2015, p. 49, citing Blackmore & Holmes, 2013, p. 42). Finally, I return to the question of cycles focussing specifically on life cycles. Like the three orders of discourse, the frames which index systems, values and cycles all intersect in various ways.

4.1. The recycling system

I begin with recycling. In terms of orders of discourse, there is a clear intersection between business and environmental concerns in relation to recycling. As consumers, we are instructed that recycling is environmentally friendly. At a broader level, the recycling business is a global one, with materials subject to complex global transactional journeys.

Purely from a lexical and morphological point of view, it is tempting to think that recycling is endless, that it can happen again and again. The word (re-cycling) has a double

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[9] This does parallel the way Conceptual Metaphors are recorded and follows Stibbe (2015). While frames are distinct from metaphors (Lakoff & Johnson, 1980) both represent experience and encourage action in particular ways. Stibbe writes "metaphors use a frame from a specific, concrete and imaginable area of life to structure how a clearly distinct area of life is conceptualised" (2015, p. 64).

circularity, suggesting an endless process. The following lines, from an informant working in a recycling facility, certainly suggests such an endless return.

> Recycled container and products are purchased by manufacturers, who use them to produce or package their products that are shipped to retailers. Consumers buy the products from a wide variety of retail stores. As we use the products and recycle them, *we begin the cycle all over again*. (SW1; emphasis added)

This talk suggests that recycling is circular in a repetitive way. I want to argue that this further suggests that RECYCLING IS A (NATURAL) SYSTEM. The circularity is clear in "recycling" itself. The connection to natural systems is perhaps less straightforward, but it is possible to make this link for two reasons. First, recycling is already widely understood as environmental conservation. Second, cycles are most commonly associated with nature. The cycle of day to night, season to season and year to year are all "natural". Likewise, birth, growth, death and return to constituent parts is also a "natural" cycle: NATURE IS A SYSTEM. There is further evidence for seeing recycling as a natural system in the data.

Waste processing systems (whether recycling plants or water treatment facilities) are also framed as natural systems in so far as they draw on language that is usually used for natural processes. Water in particular is the source domain here. There is a "waste stream" that can be "diverted" from landfill (P2). There is a "recycling stream" (SW1) that "flows" into the sorting machinery (SW4). Waste altogether is said to constitute a "waste system" (W1). This suggests a broader frame: WASTE PROCESSING IS A NATURAL SYSTEM.[10]

When the frames NATURE IS A SYSTEM and WASTE PROCESSING IS A NATURAL SYSTEM are considered together, it is possible to find the limits and tensions in the latter by drawing on some empirical facts about the former. This is clear if we consider the "waste stream" element of the waste system. In one sense, discussion of the "waste *stream*" is appropriate in that it indicates directionality and a constant flow. Standing in an MRF and witnessing the endless amounts of material being metered onto conveyor belts makes this clear. But this stream is not simply part of the recycling system at any particular site. It is part of a global system involving markets, brokers, commodities, trade restrictions and money (Minter, 2013). While "stream" might suggest that the material has a natural, benign and predictable end point, this is not the case. The end point of the recycling waste stream may well be burial in landfill or incineration.

The second point of tension is that "system" suggests something that is self-contained. Natural systems are generally thought to work in this way. Unfortunately, it is not so straightforward. W1 recounts asking people to draw the water cycle:

> And they come up and they have to draw the water cycle so somebody comes up

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[10] One might also argue that as the waste market wants to "grow" (P1) it is being framed as a system or organism. See Harré, Brockmeier and Mühlhäusler's discussion of "growth" (1999, pp. 29-31).

and does it. And then so OK what are the parts — what's missing? And they're like — where's the people? And the buildings and the this and the that and all the infrastructure and the wastewater treatment plant.

People, the built environment and all manner of infrastructure are also part of the water cycle: "*we* are the water cycle" (W1; emphasis in original). While the frame NATURE IS A SYSTEM is no doubt empirically true in many respects, the distinction between the natural and the made is extremely difficult to maintain. Knowing where to place humans in this system is also problematic. In terms of waste, the distinction is equally problematic. Framing waste processing as a system separates how we deal with waste from where it comes from and where it goes. If waste is a system, then we are all a central part of it.

4.2. Systems and the production of dirt

One of the most pervasive frames in the data relates to how people define what is dirty and what is clean. Here, it is necessary to consider both the systems that organise our waste and our attitudes towards it. Directly related to these systems is what counts as value. What is "dirty" depends on who is categorising a material and the purpose for which they are doing this. In relation to waste treatment and recycling, generally material comes in "dirty" and needs to be cleaned in preparation for its next life or market.

In the context of waste processing, the frames used and the actions they describe are fairly straightforward. WASTE IS DIRTY. This can be seen in the case of water, with one facility reporting that it "*cleans* 20 to 25 million gallons of wastewater a day…" (W1). What is considered dirty, however, is a contextual question. The data suggest that for individuals, colour and smell are closely connected to whether or not something is considered dirty. An informant reports that for members of the public, the "ick factor" is more common when material is "brown" (W1). Thus, substances like reclaimed water or fertiliser (made from human waste) are more likely to be accepted as "clean" if there is no unpleasant smell (W1, W2, W3). To eliminate both the smell and "ick factor" related to wastewater, it is put through a process that separates out different parts.

> Like this whole process to get rid of all the stuff … we take this out and then we take this out and then you do this and you know they've figured out OK this is quite a production. (W1)

In relation to solid waste, the separation of constituent elements is also important. SW1 reports:

> What we do here is *sorting*. We don't manufacture new things. We're not cleaning things … what we're doing is taking this *jumbled mess* that was picked up at your curbside recycling it goes on our truck comes over here and it gets *sorted* out through

a human and a mechanical process. (SW1; emphasis added)

This sorting, this separation of materials, is in fact a kind of cleaning even though no washing is involved. This is clear when another recycling facility explains how it maintains markets in China: "our stuff's cleaner" (SW2).[11] In relation to solid waste, materials may be cleaned again after initial sorting (in the sense of both removing material and washing it) before being reprocessed. But immediately after waste collection, "clean" generally means that a mass is separated into relevant categories of material that are "uncontaminated".

It seems clear that whether it is water or solid waste, MIXED THINGS ARE DIRTY. It is important to note that this frame links to a broader metaphor and system. That is, the idea that mixed things are dirty is simply a variation of the idea that "clean" means an ORDERED ARRANGEMENT and "dirty" refers to MATTER OUT OF PLACE (Douglas, 1984; see also Lizardo, 2012, p. 368).[12] It is important to note that there are two partial exceptions to this.

As just established, when a recycler reports that if "it's not clean, it's not easy to recycle" (SW2), they are generally referring to mixed material. The two partial exceptions relate to the intrusion of plastic bags into MRFs. I will argue that these two cases are actually reconcilable with the MIXED THINGS ARE DIRTY frame even though on the face of it they appear to be related to lay understandings of dirt (a general "ick" factor).

To be recycled, to be valuable to recyclers, paper and food containers need to free from residue. In the following, SW2 explains:

> If you have a little aspirin bottle maybe one from that line[13] that made it over to this line and got into a bale.[14] Failed. They won't accept your order. Medical waste zero. Zero. Nothing. Food waste zero. You got food in your material because it moulds, it creates mould spores you know. (SW2)

SW2 is explaining that even an aspirin bottle would count as medical waste. This is an unacceptable form of "contamination" which would mean the material would be rejected by future buyers. This also applies to food waste of any kind. As SW2 explained to me, when commodities are shipped to markets, they may be in containers for many weeks. The presence of either food or moisture will be easily detectable (through smell) and makes this material un-sellable.

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[11] "China's 'National Sword' policy, enacted in January 2018, banned the import of most plastics and other materials headed for that nation's recycling processors, which had handled nearly half of the world's recyclable waste for the past quarter century" (Katz, 2019).

[12] Douglas is not the first to have made this point. Thanks to Professor Naomi Segal for this information. For earlier instances of "matter out of place" see a toast by then Foreign Secretary Lord Palmerston in 1852 (see Fardon, 2010), and Freud's "Character and Anal Erotism" (1997 [1908], p. 213). For a discussion of the formulation (including further examples of uses pre-dating Douglas) see Dollimore (2001, p. 176 n. 6) and Liboiron (2019).

[13] Here "line" refers to the sorting line, the conveyer belt system used in this facility.

[14] Materials are bundled into large cube shaped bales before they are transported on.

The second exception in the data relates to plastic bags. In an MRF, the tour guide said:

> I'll show you the plastic film that we cut off that we're going to try to market but it's dirty. Recyclables you probably hear need to be clean, or clean enough. *This gets so dirty this has to be really clean.* (SW1; emphasis added)

On the tour, we were directed to look at the myriad plastic bags caught up in cogs, levers and other parts of machinery. In addition to being out of place, snagged in machinery and floating along the gangways, the plastic was also literally dirty — covered in grease and grime.

I suggest that even these "exceptions" fall under the MIXED THINGS ARE DIRTY frame. In the case of food containers, the salient material is the container. An aluminium can is valuable. It can be recycled. If it is mixed with other materials (paper, steel, plastic, food), it is not. A commodity must be pure. In the case of the plastic bags, there are two kinds of matter out of place. First, the bags are "out of place" in the MRF. They obstruct machinery and slow down the line. In this case, the recycling line itself is "dirty" in the sense that its operation is compromised. The grease and grime on the bags are also matter out of place. Similar to food and medical residue, if the plastic is not free from other materials, it is not valuable as a commodity. In sum, in the data, "dirty" and "clean" are used to refer to material being free from food debris or dirt and to mixed materials in the same place.

The MIXED THINGS ARE DIRTY frame is captured perfectly in a commonly used term in the solid waste industry: "contamination".

> We open up all the bags, if they're heavily contaminated we take action [against the customer]. (SW2)

Markets do not want garbage. They want uncontaminated materials as only then are materials commodities (see below).

But in a broader context, using "contamination" in this way is misleading. One interviewee explained that while waste processors describe contamination as "the wrong stuff in the wrong place", their organisation argues that it is "the right thing in the wrong place" (P4). That is, the material that is seen as "contamination" would be valuable in other contexts. Most waste is, after all, a resource (see below).

MRFs do employ some modes of mechanical sorting (for cardboard, aluminium, ferrous metals and paper), but work is also done by people. Individuals stand alongside conveyor belts loaded with material and pick out the objects that should be somewhere else. This is labour intensive work. This is no doubt why some stakeholders would like to place responsibility for "clean" recycling on the consumer. Recycling (and waste), they assert, is an individual responsibility. This is made very explicit in some contexts: "The success of recycling depends on you" (SW1, Document 2). Notice how this pushes the problem out of the waste system and into the hands of consumers. Clearly people are part

of the waste system: we all produce it. But in terms of framing, the waste processing system is separated from the antecedent waste production.

Like the definition of "contamination", the shift of responsibility to the individual is contested by other informants. One explains, "if the products that are available to you aren't recyclable, that's not your fault" (P1). Another sees the shift of responsibility to individuals as a tactic to avoid regulation.

> The waste industry is trying to say that it's the fault and the problem of the consumer or the residents. And we heartily disagree with that [laughs]. So they're basically trying to use [this] as justification for no legislation but also for not even [making] policy changes. (P4)

This simply underlines the point made above. People are part of the waste system. But companies that manufacture products are also part of the waste system. As all humans produce waste, the waste system is not distinct from human activity. Everything is part of the waste system.

Nevertheless, if properly sorting and cleaning what can be recycled is an individual responsibility, it is also fairly easy to avoid thinking about. This is assisted by the lexical gaps in our language. We have no words for "someone who does not recycle their bottles, papers, and so forth", nor a "short word for 'to separate garbage'" (Harré, Brockmeier & Mühlhäusler, 1999, p. 31). Once our waste (recycling or otherwise) is collected, we do not see it again. This is captured in the well-known idiom "out of sight out of mind" (P1) and the general idea that there is an "away" that waste magically disappears to. It seems to be the case that UNSEEN THINGS DO NOT EXIST. Those working in the industry are well aware of this. Using "we" and "you" to reference people in general, W2 explains:

> We're so removed from it. You flush the toilet and that's the end of the story. Who thinks about where it goes? Same with your garbage. You throw everything in the garbage and the guy comes and picks it up. You don't think twice about where it's ending up… it goes away into the abyss. It's gone. I don't have to worry about it… it's totally magic and fairies.[15] (W2)

The relative invisibility of waste is compounded by the location of waste treatment and transfer systems. As has been well documented, landfills, waste transfer stations (where waste is collected and compacted before being sent onwards to landfill), MRFs, and wastewater treatment plants are difficult to site (e.g. Martuzzi, Mitis & Forastiere, 2010).

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[15] As Nagle (2013) reports in her ethnography of New York sanitation workers, those who actually take our waste away are also invisible. Informants are also aware of this dimension. One describes building custodians as the "unsung hero", "they're moving everybody's garbage out of the building, nobody pays attention to them, they're out of sight out of mind" (P1).

The burden generally falls on marginalised communities. Indeed, when in Seattle, I was struck by the location of these facilities. They were usually in industrial districts. This is by no means unique to Seattle. In one way, such siting makes sense. The levels of traffic and the space and energy required means it is logical to place these facilities away from urban centres.[16] I wondered, however, what the impact would be of placing an MRF next to a large convenience store such that people could see on one side the products being sold to them and on the other the material that this generated. Having visited only a handful of MRFs, my view of waste has been dramatically changed. Both the location and framing of waste put it out of sight. Waste is located discursively and physically as distinct from everyday life. But this separation is tenuous.

4.3. The production of value

Waste is "produced" by systems that classify it as "waste". Systems also produce (and rely on) value and values. This is true in the case of all human constructs. Money has value because of the underpinning social and financial systems. Waste has value only in relation to systems that produce and, more importantly, recognise that value. I begin with the financial value that waste has before considering the use values of waste. It is also worth noting that this frame, talking about waste as being commercially valuable, has at its heart an oxymoron.[17] It is an oxymoron that has some antecedents, as reflected in the saying "one man's trash is another man's treasure" or "where there's muck there's brass" (Speake, 2015, p. 217). Nevertheless, these sayings appear to make salient the importance of individual perspectives on value.

The waste business, however, is complex, global and does not always depend on the value of (waste) materials specifically. The frame (DEALING WITH) WASTE IS A BUSINESS was widespread and found not only in data from people working in or running waste companies but also more generally. This frame can be considered a macro-frame (though not quite at the level of order of discourse) as it can be further specified.

Even for waste that is worthless, there is a business angle. Waste collecting companies refer to their "customers" (SW1), who may pay a "haul fee" (SW2) to have garbage taken away. Businesses may also be paid by local councils to provide garbage removal. And the data reveal that in some cases (public areas and rural locales), recycling can be "cost prohibitive" (SW1).

A range of commercial actors and actions are involved in waste, including "the vendors that haul it… the contracts that are written to hire the vendors that haul it" and so on (P1). Companies themselves talk about being "competitive" with their "charge fees" in relation to their own "industry" (SW2). For customers, waste can be expensive simply because of the charges made by municipalities (and the companies they contract) to take it away. How

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[16] As a similar example, the Living Computer Museum is also in the industrial district of Seattle. A guide explained that this was due to the large amount of power they need to run the museum.

[17] Thank you to Dr Katie Patterson for pointing this out to me.

much waste costs to remove depends on what kind of waste it is and the local arrangements for dealing with it. It can also be costly in other ways, that is, non-solid waste "can be expensive because it can clog your pipes" (W1). One informant reports that disposing of building waste can be less expensive to deal with than other kinds as "it's cheap to demolish a building and throw it in the landfill" (P1).

While the macro frame WASTE IS A BUSINESS applies to everyone involved in the production and removal of waste, for the customer, WASTE IS A LIABILITY: its removal costs money. But there is another side to the waste business: how companies that deal with waste frame and use it. There are two frames here. The first is the same as for the customer: WASTE IS A LIABILITY. SW2 uses this frame when talking about plastic.

> There's no value in [plastic] we're basically — whatever we haul plastic wise in weight right now it's probably it's a landfill so it's a cost. It's a negative number.

This frame captures the perspective of the businesses that simply take trash away and dispose of it elsewhere, either in landfill or incinerators. The loss that the liability of waste represents is compensated for by the money they receive to remove it. In short, they are rendering a service.

In other cases, waste is not a straightforward liability. Recycling, for example, is a business only if someone is willing to pay for it. The cost of this depends on there being an end market for the recycled material. Recyclables that are actually processed (i.e. recycled) and can be sold on are "products". If products cannot be made and sold, the material is unlikely to be recycled. In this case, it is not a product; it is a liability. If there is an end market, then WASTE IS A COMMODITY. The evidence for this frame was found in data from people working in recycling and recovery. At one recycling business, I learnt that clear glass is "where the real high grade market is", it has "the highest value" and is "a marketable commodity" (P1). Paper too is a commodity with different grades. There is "high grade paper" and "lower grades" (SW3). In the same way, there are different grades of metals (SW3). The marketable recycled materials are variously described as "materials", "commodities" and "products". These products are baled up and shipped to "end markets" (SW1, SW4).[18]

The frame WASTE IS A COMMODITY is present when objects can be recycled into materials and sold. This clearly falls under the macro WASTE IS A BUSINESS frame, but it is more specific. To recap, whether waste is a liability or a commodity depends on the answer to the following questions:

> Can I make new stuff? Can I sort it? Do I have an end market? Is it contaminated? (SW1)

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[18] The "end market" suggests that products have a second life; I return to this below.

There is a tension here, however. What has not been addressed (but is implicit because of the more general business frame) is the cost of recycling. As with the case of making wastewater potable discussed below, whether something *is* recycled is a question of profitability, not possibility. Of course, the ability to recycle a product is a necessary condition for further processing, but it is not a sufficient one. The difference between possibility and profitability is clear when we consider alternative frames for waste. I deal first with a specific frame before considering the fundamental difference between framing waste as a resource in the business and environmental domain.

A frame that came up repeatedly when speaking with wastewater professionals foregrounds the natural world, its conservation and production: WASTE IS ENERGY. When asked what they thought of when they saw waste, one informant said:

> I see waste and all I see is energy. It's that concept that matter is neither created nor destroyed, it's just transformed, well that's what we do. And we get the exciting part of it because we get to utilise all of it. (W2)

Clearly this is connected to the WASTE IS A COMMODITY frame above. But seeing waste as energy is more holistic even though it is more abstract. Perhaps, however, it would be better to think about this frame as foregrounding the salience of *potential* energy (and therefore potential commodification) precisely because the source domain is so abstract. In practice, the energy derived from waste is very concrete. For example, methane gas can be captured from landfill (as anaerobic processes slowly take place) and water treatment plants can produce "digester gas" through the use of appropriate bacteria. In invoking the first law of thermodynamics, however, W2 describes a more general potential. As such, this view of waste as energy is more than the sum of current energy extraction techniques exactly because it refers to this (usually unrealised) potential. The focus in this frame, and in W2's words, is on use. There are no traces of commodities or products. That said, because of the utility of methane and other fuels, it is easy to see how a waste as energy frame could be co-opted into more business interested directions.

4.4. Different discourses, different values

Despite the frames belonging to different orders of discourse, there are close connections between "resources" and "products". They are both values produced by specific systems. It is important, however, to be clear about the differences, especially because "resource" may be used as a synonym of "product" in business discourses. I want to argue that the difference between the two is the difference between exchange value and use value.

Products and commodities belong firmly in a business discourse. They have market value. This is assessed in relation to end markets and by calculating the cost of production. "Resources", even "natural resources", are also framed in this way (see Stibbe 2015, p. 53, on NATURE IS A RESOURCE). But in these data, "resource" is used only in relation to what

we might otherwise think of as "natural" or "environmental resources". In the context of a recycling business, SW1 says:

> When you throw away a piece of paper that can be recycled, you're throwing away the trees, the land, the resources, the water, all the energy that went into harvesting that.

A tree can be represented as both a resource and a product. What is made salient by each framing differs (Entman, 1993). In these data, when a *resource* frame is chosen over a *product* frame, attention shifts to the provenance and utility of the product rather than to any end market. It is possible to be more specific about this. To stabilise this distinction, I suggest that "resources" should have *use value*; "commodities" should have *exchange value*. This use value does not need to be strictly utilitarian. It could include environmental value, aesthetic value and educational value.

The lack of clarity between the two frames may also be linked to rhetorical strategies that are used to promote environmental benefits. That is, in order to make environmental conservation arguments, it is sometimes a good strategy to focus on the products that can be made from natural (waste) resources. The case of wastewater provides a good example. My wastewater informants insisted on two things: water itself is a resource, and the waste in it is a resource. The biosolids in wastewater are valuable; experts "already know the value of them" (W2). This value is ecological. But it is also (at least potentially) commercial. Biosolids can be used as fertiliser, as has long been the case (Hounsell, 2013; Stokes, 2014) and as they are in Washington State (e.g. King County, 2019). Such natural fertilisers have excellent use value. They also have potential exchange value.

While these informants acknowledge public perceptions of wastewater itself as a "yukky thing" (W1), they also argue that it is a "resource" (W1) and "you can reclaim it" (W3). To do so is useful, and it is cheaper for consumers.[19] When asked about the possibility of producing potable recycled water, W3 explained that while this is not really considered in Seattle, it may be "different in more arid states like Arizona or California or Nevada". This is because the cost of producing such water cannot be justified in this area. However, in places where there is more pressure on and scarcity in natural water ecosystems, the benefits outweigh these costs (e.g. Singapore's NEWater; see Lee & Tan, 2016). Here, the fact that people need water to survive, coupled with environmental pressures, outweighs the expense associated with reclaiming water.

In terms of the framing here, it is clear that wastewater has both exchange value and use value. It is both a commodity and a resource. The danger in using a frame that depends on exchange value is that the entire discourse may shift towards "self-enrichment and profit" (Stibbe, 2015, p. 61) and thus obscure all other kinds of value until it is too late. As

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[19] Non-potable wastewater is used for irrigation of crops, sports fields and construction projects. (https://kingcounty.gov/services/environment/wastewater/resource-recovery/recycled-water.aspx)

business needs to profit, investment in protecting natural resources will only be considered when a crisis tipping point is clearly visible. It is important to remind ourselves of what is really valuable to people.

4.5. Life cycles

In this final section, I return to a frame that deals with natural cycles and systems. In addition to the cycles of nature generally discussed above, the target domain of waste is also framed in relation to a more specific source domain: life cycles. This frame is realised largely through a metaphor, the idea that products have "lives".

Products have an "end of life" (P1) and "life cycles" (P3), usually marked by passing through the "post-consumer" point (P3). Thus, perhaps counter-intuitively, products may *live* even when we have thrown them away. Thus, it is possible to talk about products having a "second life" (SW1). Lifespans are thus marked by the specific use that a product is put to or in relation to the user. If I buy a t-shirt from a second-hand store, I could be said to be giving the product a second life. Similarly, if that t-shirt becomes part of a rug, it is reborn into a second (albeit very different) life. But as we have seen with recycling, the process of being reborn is not straightforward. The issue here is that this second (or third) life is only potential. For lives not to be "wasted", products need to be carefully designed and treated.

Because of the way in which product life is measured and because of the entailments related to "natural life", there is an inherent tension in this frame. When an organic being dies, it has reached its natural end. A dead spider or snake enters a food cycle for insects or other small animals, or decomposes. A t-shirt does not "die" in the same way. Its death is marked by a consumer decision to dispose of it because it no longer fulfils its use or simply because the user no longer wants the object.

The concept of "product stewardship" seeks to bridge the gap between these different kinds of "deaths". Product stewardship is said to "obligate producers to take some responsibility for electronics at end of life" (P1). This can apply more generally, even though the concept usually applies in cases of complex and toxic materials and products. In a broader context, a steward is someone who takes responsibility for resources, people or events. There is thus a positive moral obligation inherent in the concept. This ongoing responsibility complicates the idea that products have lives as it requires either that products are managed after "death" (the end of its consumer life)[20] or that lives are prolonged in some way.

The difficulty with the metaphorical use of "death" is that this suggests a *natural* end. The product may be "dead" from a consumer point of view, but the parts — its waste — live on. This explains why there have been attempts to recast this frame into something

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[20] It is worth noting the "religious version" of stewardship more generally, the idea that the earth is made for humans (see Harré, Brockmeier & Mühlhäusler, 1999, p. 40).

much more cyclical, as in the case of "cradle to cradle" perspectives (rather than cradle to grave) and "regenerative design". Here too, however, the spectres of death and rebirth remain.

5. Discussion: Cycles, lines and values

One of the central conflicts in terms of waste processing and recycling is the description of cycles that do not, in fact, exist. While waste processing and recycling plants may draw on the language of natural cycles, they are not completely comparable. The idea that waste disappears, that dealing with it is like a natural system, that products have lives, and the very word "re-cycling" shore up this conception. While it is clear that the line between nature and the humanmade is so fuzzy to be non-existent, especially in the age of the Anthropocene, it is still possible to detect cycles in nature. Organisms die, decompose, are absorbed back into the environment and provide matter for new life. This takes a long time, but it is essentially a cycle. The waste that we now emit is not like this. Some can be recovered and recycled, and resources can be extracted from the waste stream and put to good use in other cases. But recycling is limited by technology and the materials being produced. That which cannot or is not recycled is either burnt or entombed in landfill, where physical matter decomposes very slowly.[21]

Recycling can provide some new products, but not all materials are well suited to this. Glass and aluminium are "infinitely" recyclable (SW1), but plastics and paper are not. These are, at best, downcycled.[22] They have a finite life. Some materials are renewable (e.g. trees), but their production, extraction and processing are not without costs of all kinds. If their final destination is landfill, their life is very definitely linear. If recycling is possible, this life is extended through cycles of reincarnation that, while less energy-intensive than the use of virgin materials, is nevertheless costly.

Nature is cyclical, but business is linear. The goal for business is to be profitable, perhaps to grow and to endure. Business may have to cope with the cycles of seasons, but nature is a constraint rather than a core driver. Further, business does not have to absorb the costs of its own existence in terms of the resources it uses. It is not accountable to the climate or the environment; it is accountable to its shareholders. These are externalities. Because waste is a business, it thus makes sense that many of the frames and discourses depend on or entail linear concepts of time. The production line is a "line" for a reason. Products may have lives, but they may be very short indeed. I am not suggesting that businesses themselves should simply "take responsibility" for their waste. The context in which businesses work demands they work in the way they do.

It seems to me that what is visible in the various frames and discourses is a clash of

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[21] This is due to the nature of modern sanitary landfills. Indeed, so stable are these processes that landfills are now being mined for their resources (Jacobs, 2018).

[22] Downcycling means that a material is made into a lower quality product. For example, paper made from recycled paper does not have the same attributes as paper made from virgin materials.

temporal orders and of what counts as value. I deal first with time. Business may have "cycles", but they are not natural cycles. Talking about a process as though it is a natural system does not make it so. Businesses may die, but they do not decompose and return nutrients to the soil. Time should therefore be understood as a key structuring factor in these frames, discourses and, crucially, practices. It is not surprising that time is central to environmental discourse more generally. As Harré, Brockmeier and Mühlhäusler observe, "environmentalism, above all, links the past with the future" (1999, p. 7). They distinguish three kinds of time.

> *Natural time.* On this level we map astronomical and physical event sequences, using above all the present-day worldwide-dominant systems of chronology, calendar and clock time…
> *Cultural time.* On this level we find historical and social conceptions of time, such as intellectual, artistic, religious and *geistesgeschichtliche* ideas about temporal processes and developments…
> *Individual time.* This is the psychological and discursive domain of an individual's construction of his or her "own" time: the individual "time synthesis" that people express, among other ways, in their various life stories, of which each of us has a more or less extensive repertoire…. (1999, p. 122)

Drawing on this general model, it is possible to further elaborate the contours of each of these times in relation to waste. Natural time in this context would refer to cycles around life, death and decay at the level of organism as well as the cyclical processes which natural systems undergo (e.g. seasons, replenishment of aquifers, regeneration after natural bush fires). This time will tend to be measured in terms of years: decades and centuries.

Cultural time in this context needs to take account of the time frames to which a particular culture orients in terms of its own planning. This frame tends to be linear, and while it can be measured in years, it is generally not reckoned in decades. For example, government terms of office tend to dictate policy such that a realisable result is evidenced before the next election cycle; businesses plan to grow, produce and profit each financial year. Given that a great deal of planning around waste happens in the public sector, however, it is important to be aware that different time scales do exist. Interviewees in government were often responsible for implementing policies and managing facilities that were designed long before they were employed. Similarly, they are involved in formulating plans and policy for waste and its processing that they will never be directly involved in.

Finally, individual time needs to capture not only the stretch of someone's life, but also their experience of living it. This is time at a minute by minute, hour by hour, week by week scale. People plan their lives from day to day, week to week and payday to payday.

These are the three time frames at issue in relation to waste. Natural time is cyclical and long, cultural time is linear and of shorter duration, and individual time is best described as momentary. P1 raises exactly this clash in their discussion of disposable packaging and the

manufacturer's argument that customers value this "convenience".

> Yes, they're more convenient but only for the moment you're using them. If you're asking if they're more convenient for the survival of the species the answer's no. And so where do you draw the boundaries around words like convenience? But the packaging industry loves to hold up instantaneous consumer gratification convenience as their only metric. But if you expand convenience to will we survive 200 years? Yeah it's not so convenient.

As Stibbe notes, CONVENIENCE IS GOOD (2015, p. 86). For businesses, single use packaging is convenient. It does not require any post-consumption processing. For consumers (as consumers) it is also convenient. But in the context of natural time, this packaging is garbage which will most likely be entombed.

While these modes of time are very different, it seems to me that waste management processes (including the regulation of what kind of waste is produced in the first place) need to take account of all of these temporal orders. In many markets, people have no choice but to purchase vegetables wrapped in plastic that can only go to landfill. If businesses are not allowed to produce this garbage, they will not. In short, policy and practice need to either orient to the constraints of natural time or develop techniques that take advantage of existing natural cycles. A good example of a successful adjustment in this context is commercial composting.

In Seattle, food waste is collected and sent to Cedar Grove (https://cedar-grove.com). Here, it is ground up and all the metal is removed. It is then placed in large rows. It is covered and levels of moisture and temperature are regulated to facilitate aerobic decomposition and remove pathogens. This takes between one to three months. By taking advantage of and optimising natural processes, a great deal of what would otherwise be sent to landfill can be turned into a useful commodity. This relies on taking advantage of natural processes.

Finally, these temporal orders may be harmonised by thinking about value. What counts as a resource to a business necessarily depends on the costs associated with it. For businesses, exchange value is paramount. To those working towards non-profit priorities, however, everything that can be reused or reprocessed is a resource. Their focus is on use value and broader environmental consequences. The difference, then, between a resource and garbage may well be a question of money, as many informants pointed out. Businesses will choose recycled paper if it is cheaper than paper made from virgin material. Indeed, history demonstrates thriving salvage and reclamation systems in times where virgin materials were scarce or expensive (Hounsell, 2013).

Both these moves, the reconfiguration of time and the rethinking of "value", depend on reframing, or "re-minding", "calling attention to the erasure of an important area of life … and demanding that it be brought back into consideration" (Stibbe, 2015, p. 162). Use value is distinct from exchange value, as the different business and environmental framings

discussed above show. There are also different framings and experiences of time. The challenge is to develop an awareness of and policy in support of these remindings and to reframe waste in terms of source frames that help address the environmental issues of our time. Possible, though untested, paths to this may be to systematically identify the number of years it takes a material to decompose in the environment in which it routinely ends up. While some materials may eventually rot in the open air, their afterlife in landfill is much longer. Products with a particularly long afterlife would be banned, or producers would be charged directly with storing them. In relation to use value, a levy could be charged on the destruction of it. Products made from virgin materials, for example, could be more expensive than those made from reclaimed or recycled materials. Both would involve direct interventions in the market. But without such interventions, the market has no incentive to account for either use value or natural cycles of time.

6. Conclusion

Frames used for waste are varied and interconnected. The three discourses identified — business, environmental/nature and cultural systems — have frames that populate them. These frames also cut across the discourses. While nature is clearly a system, waste processing is also a natural system. While waste is a resource in terms of environmental values, it is also a valuable financial commodity. The reason for looking at the frames and discourses as I have is to draw out the points of intersection and tension. Sometimes these cross-cutting tensions attach to a single term: "resource", "contamination". While apparently self-evident in their meanings when viewed in isolation, when they are looked at in relation to the frames, ideologies and values of different discourses that their polysemy and the multiple uses to which they are put become clear.

    The discussion first considered the systems that inform both frames and discourses. Starting with recycling, we immediately see the gaps between what is possible (only limited reuse) and what is thought to be the case (recycling is always good, always possible). While we might be led to believe that recycling is endlessly cyclical, it is not (always). People, technology and money all complicate what seems conceptually to be straightforward. I then examined values by looking at the dirt that is produced by systems. What dirt is, what waste is, are questions that rely on economic and technological context. It also depends on who is looking. And while all people are part of the waste "system", we seem blind to this both individually and collectively. Waste is a liability, but it is also a commodity. In considering the value produced by systems, I argued that it is important to make a distinction (conceptually and linguistically) between resources and products. This is to draw attention to the difference between use value and exchange value. While these binaries are always fuzzy, treating them as orientation points may assist in clarifying "value" in relation to both resources and waste. Returning to systems, I then suggested that cycles and time need to be looked at from different perspectives. The life cycles of a product or a business are very different to the life cycles that can be found in nature. The former may not properly be

cycles at all, but rather linear processes. Moreover, framings of time are important. What is convenient now, in the moment, for a consumer, may well have consequences that last for thousands of years.

The various frames and discourses outlined are difficult to disentangle. Mixed into them all, we find cultural norms about dirt, the reality of business survival, technological limitations, and the appeal and logic of natural systems. I have argued that thinking about orders of value and time in relation to waste makes clearer what is at stake and where gaps for action or intervention may be. While thinking about time and value alone will not solve the issue of waste, it may suggest different kinds of interventions. Waste problems are not linguistic problems. Nevertheless, a discursive frame analysis does lay bare the ideologies, values and practices that need to be addressed. I have suggested that attention to both time and value may assist in changing practices around waste. In support of such strategies, in conclusion, I offer a recent example of behaviour change that connects to one of the frames seen above: UNSEEN THINGS DO NOT EXIST.

The story that unseen things do not exist is a persistent one in the world of waste. Waste is not generally visible in anything like the quantities it exists. A whole set of practices exist to make this so (garbage collection, sewage systems, landfill). Public campaigns encourage people to join river clean-ups and litter picks (e.g. https://www.keepbritaintidy.org), and while this does make some waste more visible, the garbage collected still needs to be dealt with, and this is done out of sight. Unseen garbage is still garbage. Reminding people of this, making waste visible, may well bring benefits.

In the final episode of David Attenborough's *Our Blue Planet II*, the scale of certain kinds of plastic waste was brought to wide public attention, with *The Radio Times* (2017) reporting that this visual revelation "shocked" viewers. This shock has had effects and may well be leading to behaviour change. In their *Food and Drink Report*, the UK supermarket Waitrose name "The War on Plastic" as the number one trend of the year:

> It was the scene that changed everything: albatross parents unwittingly feeding their chicks plastic in the final episode of BBC One's Blue Planet II. Our research found that 88% of those who watched the programme have altered their behaviour as a result. (2018, p. 3)

They report that they have also seen an 800% increase in questions about plastic in their stores. As a consequence of this, the business is making changes: removing plastic bags in fruit and vegetable sections and removing single use plastic bags at the till (2018, p. 3). They have since trialled a packaging free section in an Oxford store (Naylor, 2019). As Naylor argues, this is not nearly enough (2019). Nevertheless, other consumer research suggests that we are witnessing an "Attenborough effect" with over 50% of people reporting they use less single use plastic (Mahmood, 2019). I am not suggesting that individuals are responsible for waste. But public "shock" through targeted reminding and reframing may help to drive change at a policy level.

As much as we might want it to, waste does not go away. It endures. Current methods of dealing with waste depend on invisibility, markets and a great deal of public money. As the frames documented in this paper show, there is a rich variety of practice and understanding in relation to waste. This is a resource that can be mined to bring both language and practice into better alignment with both human time and human value.

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References

Blackmore, E., & Holmes, T. (2013). *Common cause for nature: Values and frames in conservation.* Machynlleth, Wales: Public Interest Research Centre.

Chakrabarty, D. (2009). The climate of history: Four theses. *Critical Enquiry, 35*(2), 197-222.

Chen, S. (2016). Language and ecology: A content analysis of ecolinguistics as an emerging research field. *Ampersand, 3*, 108-116.

Cohn, C. (1987). Sex and death in the rational world of defense intellectuals. *Signs: Journal of Women in Culture and Society, 12*(4), 687-718.

Dini, R. (2016). *Consumerism, waste, and re-use in twentieth-century fiction.* USA: Palgrave Macmillan.

Dini, R. (2018). The problem of this trash society: Anthropogenic waste, surplus human, and the neoliberal city in J. G. Ballard's postmillennial fiction. *C21 Literature: Journal of 21st-Century Writings, 6*(1), 1-26. DOI: https://doi.org/10.16995/c21.27

Dollimore, J. (2001). *Sex, literature and censorship.* Cambridge: Polity.

Douglas, M. (1984 [1966]). *Purity and danger: An analysis of the concepts of pollution and taboo.* London: ARK.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51-58.

Evans, D. M. (2014). *Food waste: Home consumption, material culture and everyday life.* London: Bloomsbury.

Fairclough, N. (1989). *Language and power.* London: Longman.

Fardon, R. (2010). Margaret Mary Douglas 1921–2007. *Proceedings from the British Academy, 166*, 133-158.

Freud, S. (1997 [1908]). Character and anal erotism. In A. Richard (Ed). *On Sexuality Vol. 7.* Harmondsworth: Penguin.

Ghosh, A. (2016). *The great derangement: Climate change and the unthinkable*. Chicago: University of Chicago Press.

Harré, R., Brockmeier, J., & Mühlhäusler, P. (1999). *Greenspeak: A study of environmental discourse*. Thousand Oaks, CA: Sage Publications.

Hawkins, G. (2001). Plastic bags: Living with rubbish. *International Journal of Cultural Studies, 4*(1), 5-23.

Hawkins, G. (2006). *The ethics of waste: How we relate to rubbish*. London: Rowman & Littlefield.

Hounsell, P. (2013). *London's rubbish: two centuries of dirt, dust and disease in the metropolis*. Stroud, UK: Amberley Publishing.

Humes, E. (2013). *Garbagology: Our dirty love affair with trash*. New York: Avery.

Jacobs, J. (2018, January 8). Europe's half a million landfill sites potentially worth a fortune. *Financial Times*. Retrieved May 11, 2021, from https://www.ft.com/content/0bf645dc-d8f1-11e7-9504-59efdb70e12f

Katz, C. (2019, March 7). Importing waste has stalled global recycling. *Yale Environment 360*. Retrieved May 11, 2021, from https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling

King County (n.d.). Loop® Biosolids. Retrieved May 11, 2021, from https://www.kingcounty.gov/services/environment/wastewater/resource-recovery/loop-biosolids.aspx

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.

LaPorte, D. (2002). *History of shit*. (Rodolphe el-Khoury, Trans). London: MIT Press.

Lee, H., & Tan, T. P. (2016). Singapore's experience with reclaimed water: NEWater. *International Journal of Water Resources Development, 32*(4), 611-621. DOI: 10.1080/07900627.2015.1120188

Liboiron, M. (2019, September 9). Waste is not "matter out of place". *Discard Studies*. https://discardstudies.com/2019/09/09/waste-is-not-matter-out-of-place

Lizardo, O. (2012). The conceptual bases of metaphors of dirt and cleanliness in moral and non-moral reasoning. *Cognitive Linguistics, 23*(2), 367-393.

Mahmood, B. (2019, April 11). 'The Attenborough Effect': 53% of people report using less plastic. *Metro*. Retrieved April 11, 2021, from https://metro.co.uk/2019/04/11/the-attenborough-effect-53-of-people-report-using-less-plastic-9156711

Martuzzi, M., Mitis, F., & Forastiere, F. (2010). Inequalities, inequities, environmental justice in waste management and health. *European Journal of Public Health, 20*(1), 21-26.

Minter, A. (2013). *Junkyard planet: Travels in the billion-dollar trash trade*. London: Bloomsbury.

Morrison, S. (2015). *The literature of waste: Material ecopoetics and ethical matter*. New York: Palgrave MacMillan.

Mühlhäusler, P. (2001 [1983]). Talking about environmental issues. In A. Fill, & P. Mühlhäusler (Eds.), *The ecolinguistics reader: Language, ecology, and environment* (pp. 31-42). London: Continuum.

Nagle, R. (2013). *Picking up: On the streets and behind the trucks with the sanitation workers of New York City*. New York: Farrar, Straus and Giroux.

Naylor, T. (2019, June 5). Waitrose's package-free shopping is a PR Move that will change little. *The Guardian*. Retrieved June 28, 2019, from https://www.theguardian.com/commentisfree/2019/jun/05/waitrose-packing-free-shopping-pr-move-change-little

O'Brien, M. (2008). *A crisis of waste? Understanding the rubbish society*. London: Routledge.

Poole, R., & Spangler, S. (2019). 'Eco this and recycle that': An ecolinguistics analysis of a popular digital simulation game. *Critical Discourse Studies, 17*(3), 344-357.

Radio Times. (2018, August 29). Viewers react to David Attenborough's Final Blue Planet II conservation rallying cry. Retrieved November 4, 2019, from https://www.radiotimes.com/news/tv/2018-08-29/blue-planet-2-plastic-waste-final-episode

Rathje, W., & Murphy, C. (1992). *Rubbish! The archaeology of garbage*. New York: Harper Collins.

Rogers, H. (2005). *Gone tomorrow: The hidden life of garbage*. London: The New Press.

Royte, E. (2005). *Garbage land: On the secret trail of trash*. London: Back Bay Books.

Scanlan, J. (2005). *On garbage*. London: Reaktion Books.

Seattle Public Utilities. (n.d.). Food waste requirements. Retrieved April 11, 2019, from http://www.seattle.gov/utilities/services/garbage/garbage-at-home/food-waste-requirements

Speake, J. (2015). *Oxford dictionary of proverbs*. Oxford: Oxford University Press.

Stibbe, A. (2013). An ecolingusitics approach to critical discourse studies. *Critical Discourse Studies, 11*(1), 117-128.

Stibbe, A. (2015). *Ecolinguistics: Language, ecology, and the stories we live by*. London: Routledge.

Stokes, R. G. (2014). *The business of waste*. Cambridge: Cambridge University Press.

Strasser, S. (1999). *Waste and want*. New York: Metropolitan Books.

Waitrose. (2018). *Food and drink report 2018-19*. Retrieved April 10, 2019, from https://waitrose.pressarea.com/pressrelease/details/78/NEWS_13/10259

WEC. (2019) Environmental Lobby Day 2019. Retrieved November 4, 2019, from https://wecprotects.org/environmental-lobby-day-2019