Tracing the (In)visibility of Waste Flows towards Adana

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1 Introduction

Discussions about environmental crises have produced visualizations centered on energy and climate issues. However, the waste crisis has not been discussed and visualized simultaneously on the same scale, mainly because it is a relatively recent concern. Indeed, a waste crisis exists, but it has not been depicted as comprehensively as the energy crisis. I believe this calls for a more precise and detailed viewpoint.

The issue of waste became visible with the conceptualization of issues such as e-waste, toxic waste, and plastic waste, beginning in the 1980s. (Gille & Lepawsky 2022) Therefore, visualizations initially focused on energy and climate, while waste became part of the global conversation more recently. Today, waste is a crucial aspect of the climate and environmental crisis, yet it has not fully integrated into the visual language of planetary discussions. I argue that this is directly related to the nature and circulation of waste. Issues such as energy, carbon, or temperature increases are explained by processes that spread across the entire planet in a more homogeneous way. Waste, on the other hand, is generated in more limited geographical areas and sent to specific locations. Therefore, rather than being the subject of a homogeneous imagination, it has a spatial distribution that is concentrated in specific areas. In urban areas, waste is concentrated in the center and then moved to the peripheries. This situation can

be explained as the reason why waste remains in the background in planetary narratives.

Unlike the direct effects of carbon emissions on the planetary scale, the impact of waste is concentrated on more localized territories. Although waste circulation occurs globally, it follows specific routes. For example, e-waste being sent to Africa has a determined direction and boundaries. (Lepawsky 2018) Therefore, waste is perceived not as an abstract problem spreading across the entire planet, but as a more concrete, bounded, and spatially focused issue. My argument is that this limited, directional, and spatially concentrated nature of waste results in its failure to integrate into the language of visual discourse as strongly as energy or climate. It requires an interscalar visualization in conjunction with concepts such as material flows and local/global entanglements, where the question of how to visualize them becomes crucial.

2 Methods

Waste can provide valuable insights into complex relationships that have accelerated in the Anthropocene, emerging in conjunction with environmental and urban crises. It is seen as the defining characteristic of the Anthropocene, reflecting humanity's capacity to impact the environment to such an extent that it turns into massive debris. Based on the dominance of this characteristic, the term "wasteocene" distinguishes the relationships caused by waste in the Anthropocene narrative. (Armiero 2021) It is not about waste as an object; however, it emphasizes "socio-ecological relations creating wasted people and wasted places". (Armiero 2021: p. 9) Waste is not an object but a space of relationality. In other words, waste is a formation intertwined with structures such as economy, colonialism, invisible labor, and slow violence. Jane Bennet defines this status with the concept of "thing power", by stating, "[it] gestures toward the strange ability of ordinary, man-made items to exceed their status as objects and to manifest traces of independence or aliveness, constituting the outside of our own experience". (Bennett 2016: p. 12) The concept suggests that every day and man-made objects are not merely passive, but sometimes carry a kind of activity or vitality that goes beyond human experience. This approach enables the reevaluation of substances that are often overlooked or categorized as waste, on the social, political, and sensory levels. Accordingly, in a consumer's mind, waste can be defined as an object that becomes invisible after being discarded for disposal following the consumption of a produced substance. However, this piece of garbage, considered invisible, takes up space because of its volume, and as more pieces are assembled, they form more visible and defined spaces.

Representing more than just an object, waste develops a specific set of infrastructures and systems of meaning, with garbage collection systems and perceptions of recycling unique to the culture in which they originate. Lily Baum Pollans (2021: p. 10) uses "the term "wasteways" in the tradition of foodways or lifeways: a means of understanding how a particular place creates its own coherent system of infrastructure and meaning for garbage within the context of a waste regime." According to this conceptualization developed by Pollans, each city, society, and place may have a different relationship with waste. For example, countries that systematically manage individual recycling create a wasteway that demonstrates the development of collective consciousness and a sense of responsibility. In Türkiye, garbage collectors roaming the streets demonstrate the existence of a system in which garbage has economic value. Conversely, countries with large landfills create a wasteway where waste is collected, managed, and disposed of. In short, the concept of wasteways illustrates the origin and destination of waste, how it is collected, who transports it, where it is stored, and how these processes are culturally and socially interpreted. Building on Pollans's definition of "wasteways", this study defines the immaterial flow of waste as wasteflows. Due to its fluid and flexible nature, waste requires approaches of visualization that move beyond conventional data visualizations and towards more imaginative approaches. To understand and project this unique interscalar situation onto the ground, different methodologies need to be explored. By conceptualizing the crisis through interscalarity, we can reveal how it connects across various spatial and temporal layers.

In recent years, Türkiye's role in the global waste supply chain has expanded, especially with the export of plastic waste from the UK and European Union. In 2023, European Union countries and the United Kingdom shipped 456,507 tons of plastic waste to Turkey, equivalent to the load of about 125 garbage trucks, daily. (URL-1) (Figure 1) Especially, plastic waste exports from the UK to Türkiye increased from 12.000 tons in 2016 to 210.00 tons in 2020. This significant growth has raised many questions. The most important question we can address from an architectural and urban perspective is, how does such a large volume of waste create a spatial crisis and a regime of visibility/invisibility?

This question enables us to discuss wasteflows that have been hidden, along with their social and political contexts. Methodologically, through multi-scalar mapping, waste production in daily life at the local scale is made visible. Then, at the urban scale, the spatial distribution of waste flows and recycling facilities is mapped. At the planetary scale, waste import and export routes are revealed. Using these methods creates a conceptual framework throughout the research based on the rhizomatic thinking developed through the multi-scalar

Figure 1: The garbage truck circulation diagram shows that the amount of waste sent from the UK and EU was equivalent to 125 garbage trucks per day in 2023 – image produced by the author

and multi-layered approaches Deleuze and Guattari employ in their discussions of assemblage. (Deleuze & Guattari 1987) The combination of these diverse, multi-layered, and multi-scalar tools creates new wholes, preparing the ground for an interscalar reading of the crisis.

3 Results

The UK is among the countries that export the most plastic waste in the global waste chain and Türkiye is one of the main destinations for this waste. (Gündoğdu & Walker 2021) While statistical data confirms that, Bloomberg journalist Kit Chellel placed a GPS in a UK supermarket bag to track its destination and reveal the invisibility of waste in 2021. After a long journey, including stops in Germany and Poland, the final signal from the GPS device was received in Adana. The absence of a waste treatment facility near the last satellite signal suggests that this waste and similar ones are being dumped in vacant lots. This narrative makes it newsworthy and creates a hot topic on the agenda. "A Plastic Bag's 2000-mile journey shows the messy truth about recycling," say journalist Kit Chellel and Wojciech Moskwa. (URL-2) Examining the waste sent from England to Adana reveals that the crises it has caused and will continue to cause for the city have grown to a scale that necessitates spatial visualization.

Adana is a port city located in southern Türkiye, on the Mediterranean coast. As Türkiye's seventh-largest metropolitan city, it owns land that is highly suitable for agriculture. However, the accumulation of garbage on these lands reveals distinct spatial and daily life practices. Mapping these garbage collection areas identified and documented by Greenpeace provides insights into the city's periphery. (Greenpeace UK 2021) (Figure 2)

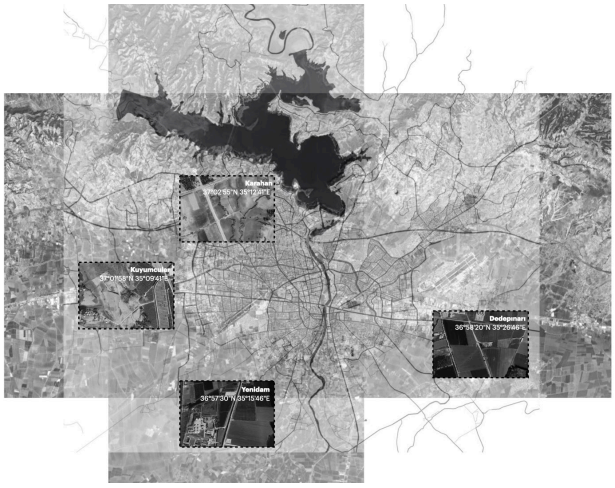

Figure 2: The waste sites at the periphery of Adana – images retrieved from Google Earth and edited by the author

The location of landfills and their associated recycling facilities away from the city center is shaped and managed by the urban political economy. From the perspective of critical urban theory, garbage is not just waste generated by consumption but also an outcome of political and economic forces. (Pollans 2021) These areas where waste accumulates are often invisible zones on the periphery of the city, where low-income communities reside. The visible center-periphery relationship created by garbage directly relates to discussions of spatial justice. (Harvey 2010) The territories of waste sites are connected to how capital reproduces urban space. (Lefebvre 1991) These sites are invisible but function as spatial tools that support capital.

The assemblage of waste hills in Adana, typically found in agricultural hinterlands, transition zones, or on the outskirts of the city, exemplifies this center-periphery dynamic. (Figure 3) On a larger scale, the accumulation of plastic waste from the UK in Adana reinforces Türkiye's function as a periphery in the global capitalist waste economy. Therefore, it can be argued that the spatiality of waste exists both on planetary and urban scales. On an urban scale,

the transformation in Karahan, Kuyumcular, Yenidam, and Dedepınarı, the four major garbage collection areas identified by Greenpeace, is examined both before and after the areas in question were reported. The Kuyumcular area was once a streambed. The area in Karahan and Yenidam also lies on the course of a river. It is also noteworthy that Karahan was developed into high-rise residential buildings after its cleanup. This demonstrates that even peripheral areas are gradually being integrated into the city.

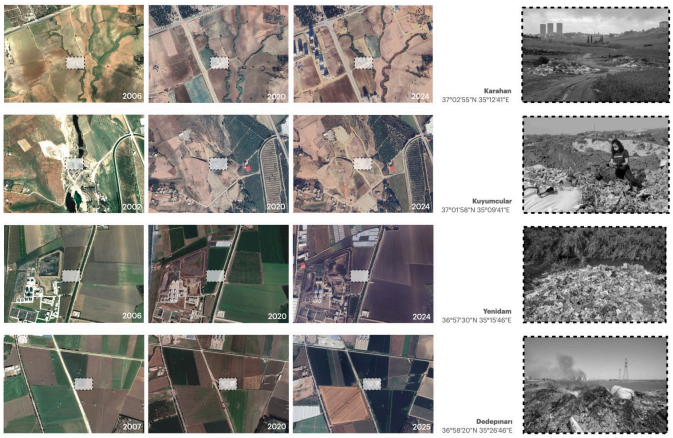

Figure 3: Google Earth and Greenpeace images edited by the author

4 Discussion and Conclusion

Considering waste more than an object and its accumulation as physical assemblages, materials from different resource geographies and supply chains provide information regarding their multi-temporal and multi-scalar qualities. Macdonald (2022: p. 17) defines the "current waste predicament" as "the mounting piles of garbage and expanding landfills." Especially with the increasing mass consumption after the Second World War, the scale of waste accumulation has become an ecological and political problem on a global scale. (Lindner & Meissner 2015) Thus, a complex relationship has emerged between urbanization and waste that serve as evidence of production and consumption patterns and work as a visible sign of the environmental and urban crisis. While waste primarily constitutes a material flow, it also encompasses immaterial dimensions, including cultural

perceptions, economic value, and political discourse. They appear in specific geographies, like the relation between UK and Adana, as evidence of such relationships, making the imperceptible scale of wasteflows more comprehensible. Based on these relationships, it can be argued that the waste crisis is a situation at the intersection of urban and environmental crises. (Figure 4) As the scale increases, uncovering the (in)visibility of waste becomes more difficult.

Figure 4: The convergence of urban and environmental crises drawn by the author

The visualization of waste provides a new way of thinking and representing while raising questions about the environmental and urban crises in the Anthropocene. The unsettling image of the Anthropocene, marked by waste, emphasizes the potentially catastrophic effects of human activity on Earth. These forces humans to deal with the ecological consequences of their actions in an ethical way while at the same time questioning their perceptions of nature and human influences. The reflections on how waste visualized play an essential role in shaping thoughts about environmental responsibility. This analysis demonstrates that tracing and visualizing waste are both productive and critical tools for addressing environmental and urban issues. They aim to construct a projection that calls for a rethinking of waste. This intervention has the potential to transform not only the visibility but also the way the audience thinks, feels, and takes a stance. These visualizations established through projections enable us to conceptualize that waste is not just an object, but a multi-layered structure.

References

Armiero, Marco. 2021. *Wasteocene: Stories from the Global Dump*. Cambridge University Press.

Bennett, Jane. 2016. Vibrant matter. *CSPA Quarterly* (14). 7–11.

Deleuze, Gilles & Félix Guattari. 1987. *A thousand plateaus: Capitalism and schizophrenia*. Trans. by Brian Massumi. Minneapolis, MN: University of Minnesota Press.

Gille, Zsuzsa & Josh Lepawsky (eds.). 2022. *The Routledge Handbook of Waste Studies*. London: Routledge.

Greenpeace UK. 2021. *Trashed: How The UK is Still Dumping Plastic Waste On The Rest Of The World*. Tech. rep. Greenpeace UK.

Gündoğdu, S. & T. R. Walker. 2021. Why Turkey should not import plastic waste pollution from developed countries? *Marine Pollution Bulletin* 171. 112772. DOI: 10.1016/j.marpolbul.2021.112772.

Harvey, David. 2010. *Social Justice and the City*, vol. 1. University of Georgia Press.

Lefebvre, Henri. 1991. *The production of space*. Blackwell.

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

Lindner, Christoph & Miriam Meissner (eds.). 2015. *Global Garbage: Urban Imaginaries of Waste, Excess, and Abandonment*. Routledge.

Macdonald, S. 2022. Why Museums Need to Talk Rubbish. In C. Dupont, S. Gonçalves & E. Teworte (eds.), *Throwaway: The History of a Modern Crisis*. European Union.

Pollans, Lily Baum. 2021. *Resisting Garbage: The Politics of Waste Management in American Cities*. University of Texas Press.