# 2. Theoretical and Conceptual Framework

This book follows and theorizes *çıkmacıs*' salvaging practices in Turkey in relation to the agency of waste as a second-hand resource. The *çıkmacıs*' activities are key to understanding how urban waste renewal processes, by negotiating the borders of urbanization, can impact more expansive geography. Through the lens of sociomateriality, I investigate how discarded building components are used in incremental constructions in rural parts of Turkey. This theoretical engagement has a three-part structure based on separate but intersecting scholarship. The chapter begins with a theory of the overlooked agency of waste; followed by an exploration of its spatialization and association with 'assemblage urbanization'; and it concludes with a delineation of unrecognized forms of labor.

## 2.1 Theorization of Waste

> Waste is the dark, shameful secret of all production. Preferably, it would remain a secret.
> *(Bauman 2011, 27)*

Theories of waste focus on the material and its social life through social, cultural, and economic valuation systems (Thompson 1979; Appadurai 1986; Gregson and Crewe 2003). Scholars agree that waste is a transitory period and category rather than the end of a life cycle. However, some conceptualizations (Douglas 1966; M. Thompson 1979; Scanlan 2005) are based on a problematic preconception of a divide between waste and humans. It is perceived as an exteriority. They fail to mention waste's relationality and sideline the fact that economically disadvantaged people in the Global South live in closer proximity

to it. Additionally, waste studies have a tendency to give agency and authority only to humans. Nevertheless, these theories are primarily linked to economic, cultural, and social codes centered on the Global North (Bell 2019). These codes are part of a system that assembles and classifies things according to their appropriateness to human values:

> Where there is dirt, there is a system. Dirt is the byproduct of a systematic ordering and classification of matter, in so far as ordering involves rejecting inappropriate elements. The idea of dirt takes us straight into the field of symbolism and promises a link-up with more obviously symbolic systems of purity. (Douglas 1966, 35)

With this 'purity system', once waste is discarded, the system no longer cares about it. Another concept of Mary Douglas is that dirt is matter-out-of-place implies some kind of transgression. Waste represents a "residual category [of things] rejected from our normal scheme of classifications" (ibid, 45). Where there is a human valuation system, there are boundaries that keep waste outside. To keep waste outside we need waste management systems that need maintenance.

Different societies marginalize or exclude people as waste. However, according to Zygmunt Bauman (2011, 3), "wasted lives" are the intrinsic result of modernization and an unavoidable companion of modernity because they are an "inescapable side-effect of order-building … and economic progress". There is a symbolic contamination inscribed on informal waste laborers that represents them as downgraded elements of society. They are labeled in such a way even though they contribute to the circular economy and sustainable consumption (Morrison 2015). For instance, garbage pickers, trash collectors, and informal recyclers in the majority of the Global South tend to deal with the dynamic identity of waste and move it on its circular trajectory of reuse.

In Michael Thompson's book *Rubbish Theory*, the politics of value is interpreted as a system that depends on time and space (1979). Thompson suggests that the exchangeability of a thing beyond its market value relies on that thing's particular usage history. He refers to a valuation system made by human consciousness that separates things into the categories of what is useless and what is not. To that end, he proposes three types of objects determined by human justification: transient, durable, and rubbish (ibid, 4). Thompson distinguishes between transient objects, which lose value over time, and durable objects, whose worth improves over time. Rubbish lies in-between

transient and durable objects and represents a temporary and covert state without time and value. In the rubbish category, things are in a neutral space without any worth where they can be rediscovered and evaluated for a new use and moved into the durable object group. His subsequent theory suggests that rubbish as a category allows for translations in use and value. The condition of unworthiness is tied to temporality, which means the ability of items to transit across these categories. In addition, time is a crucial concept in recognizing and negotiating waste (Viney 2014; Allon, Barcan, and Eddison-Cogan 2020). If there is too much emphasis on the categorization and territoriality of waste, it becomes likely that one will lose sight of the critical role that time plays in shaping our perceptions of, and interactions with, discarded things. Referring to Douglas' definition, Viney argues that waste is "matter out of time" (Viney 2014, 2).

Thompson (1979, 148) explains that the transition between categories is motivated not by the fundamental features of objects but by new and unforeseen uses and functions ascribed to them by humans. The person-and-thing relations in his theory are limited to those categorizations based on temporality and the cultural evaluation of things. Other factors like creative practices or the inextinguishable properties of toxic waste are missing. The transitory practices in the arena of human activity are essential for reviving value since rubbish is not an endpoint but rather a pivot point. However, the value again depends on human judgment in Thompson's theory. It disregards waste's independent activeness to alter habits or practices because it also exists in time.

Scanlan (2005) puts forth another kind of distancing argument that acknowledges the separation from nature and humans as well as the creation of modern society out of its cleansing and discarding activities. Such disassociation was created within high-income societies at the time when technological developments in urban sanitation designated a city with a modernist ideal order (ibid). Within such an orderly system, the consequences of our own waste are black-boxed with municipal waste management and the recycling industry with its sustainable rhetoric of a circular economy. His arguments ignore the way waste is also managed by informal means or self-managed systems in low-income geographies. There, through inventive recycling processes, waste is turned into functional materials. It is part of networks, services, and infrastructure produced in spaces beyond the confines of the planned urban settings.

In summary, the literature on waste discussed in this section was based on a disconnection between human and nonhuman agents; the creation of a passive and active duality; and ordering systems. However, in peripheral

geographies, human activities and their byproducts are more intertwined. A more fruitful theory of waste can be developed if we focus on the experiences of individuals whose existences are defined primarily by their livelihoods structured around waste. In the following, I discuss approaches that support the active participation of materials, the dynamic relationship between humans and waste, and how waste could be redefined through these discussions.

### 2.1.1 Waste as Active Matter

More recent studies eschew dualist conceptions of waste in favor of more relational perspectives (Gregson and Crang 2010; Hawkins 2010; Bell 2019). This socio-materialist approach attempts to overcome the distanced binarism between humans and waste (Hawkins 2010). Such an evaluation of waste is rooted in theories that employ flat ontological perspectives, putting humans on the same level with nonhumans and considering the agentic and performative qualities of materials (Latour 1988; Bennett 2004; Alaimo 2010; Ingold 2012). These 'new materialism' theories acknowledge the transformative power of nonhuman. Ingold suggests that materials (2012) have fluctuating properties because they change under the influence of the surrounding environment. In an attempt to theorize the interactions and entanglements between human and matter, Stacy Alaimo pursues a "trans-corporeal" relationship between the human body and waste (2010, 3).

The concept of waste needs to be expanded through an investigation of the consequences of waste's role in places where people and waste closely interact on a socio-material level. Bell offers a counter concept of "living waste" that roots "itself in lived experiences of waste; in empty-belly or peripheral contexts; in human lives and other-than-human life forms; and in understandings of waste in all its materiality and agency." (Bell 2019, 117). In the following section, I begin with an overview of Latour's actant ontology in order to disclose the importance of nonhuman agency and to highlight the role of waste and its materiality.

### 2.1.2 Actant Ontology

Reclaimed material or a salvaged heating system can have an impact on the architectural planning and construction of a rural house. Recycled PVC frames can become a part of the circular economy. The incineration processes can damage the environment through the recycling processes. An earthquake,

abandoned building, or PVC frames can play an essential role in urban renewal projects. Latour's actant ontology theory can help us better comprehend how everyday things, impending natural disasters and technology have agency in political and economic processes.

According to Latour, an actant is a source of action that may be human or nonhuman within a network (Latour 1988). In its interactions, it is effective, capable of doing things, and purposeful enough to create an impact, cause consequences, or influence the trajectory of events (Latour 2007). Further, in his definition, an actant has the ability to alter and act on other entities based on relationships within a network. Each actant in the network has an effect on the manner in which the network functions. The material form of individual actants contributes to the establishment of linkages within a network: the physical properties concurrently define and constrain the modes in which exchanges may occur and emerge. Things, artifacts, devices, technologies, texts, algorithms, institutions, and humans are not comprehended as separate and independent features that belong to different fields or vocabularies but as interconnected actants interacting with each other through mutual relationships (Law 1992).

The actant's competence is inferred from its performance rather than any predetermined assumptions before its activity. In this respect, performance is critical to analyzing a network since the longevity of the actant is only valid when its performance is repeated in recognizable patterns. By describing a more distributive agency between human and nonhuman actants, Latour establishes a language for the numerous ways to reveal different forms of things and their distinguishing roles in a network. The ANT brings together natural, cultural, and social bodies, both human and nonhuman, organic and inorganic, material and immaterial (Latour, 2007). His strategy is to balance the distinctive agency of humans. He emphasizes specific nonhuman entities inside a network of relationships other than human subjectivity while highlighting their material qualities or unique, effective powers. At the same time, he proposes a horizontal analysis to stage human and nonhuman actors for the formation of networks. This horizontal analysis distributes agency to each assemblage element.

Latour expand the consideration of objects beyond their conventional role in fulfilling human needs (ibid). In the context of this study, employing a Latourian perspective allows an investigation of how reclamation procedures of construction waste are entangled in specific material capabilities that function to bring the matter into the present and arrange particular meanings and val-

ues around it. Moreover, Latour emphasizes contingency and performativity of materials in political processes (2016, 16). For instance, asbestos emissions from construction ignored by the Turkish government) become part of political and public debates (Odman 2019). Methodologically, this approach allows an exploration of how salvaged materials are reactivated in specific second-hand markets as valuation networks that try to bring matter back to life and arrange specific interpretations and values. The second-hand window frame salvaged from the city takes part in the assemblage of a rural house through the *çıkmacıs* supply yard network.

There are three forms in which actants interact with networks: intermediaries, mediators, and immutable mobiles (Latour 2015). Intermediaries are actants that do not alter the network as it passes through them. Being transparent, they are capable of transmitting inputs without leaving a mark. Predictable by the cause that creates them, they replicate the input. Mediators always have an effect upon what passes through them. Due to this, they modify the form, function, and meaning of the network wherever they are associating. Immutable mobiles are actants that preserve their form or configuration while moving through and over the networks. To put it another way, they can be replicated indefinitely across a network without changing. They also have the power to enlarge the network into different territories and spaces.

To give an example of these three forms within the context of this research, intermediaries are the urban renewal projects that continually create building scrap material. Mediators are *çıkmacıs* and their yards. After deconstructing and sorting out the parts (all of which are regarded as waste) of the building, they put some of its elements back into use through their second-hand trade network. The second-hand market expands its territories through supply yards as immutable mobiles where reclaimed materials are distributed.

Tim Ingold finds Latour's emphasis on nonhumans limited because it only addresses the agency of matter inside an assemblage (Ingold 2008). Latour's ANT is focused only on the mutual and interactive collaboration of actants within a network of functional totality. Counter to this, Tim Ingold (ibid) refers to the individual agency (singularities) of materials that are independent from a network and to the singular transformations of materials throughout their lifespan. Ingold (2012) stresses the individual signs of activity, growth, or reactivity, for example, in the dematerialization processes after the production of the object. What needs further attention is waste's material composition, what other materials are moved around, and what exactly are the dynamic properties that make discarded things flow.

For Ingold, things remain active in their material form after their fabrication because the elements that compose them continue to be involved in the circulations of an external medium, like air, which simultaneously announces their decay and enables their regeneration (Ingold 2007). By decay or decomposition of their structural substance, materials have properties that are animated by their surrounding medium's impact. For instance, waste can decay or change in form due to its material composition or exposure to air. Or, a metal roof can change color after years of exposure to sun, air and water. In demolition, workers are the medium that decomposes the building's structure into materials, and they activate asbestos or other substances from construction components:

> We see the building and not the plaster of its walls, the words and not the ink with which they were written. In reality, of course, the materials are still there and continue to mingle and react as they have always done, forever threatening the things they comprise with dissolution or even dematerialization. (Ibid, 9)

Based on this, the properties of materials cannot be defined as stable and fixed but rather as processual and relational. Material properties could only be determined as a consequence of time or one of the mediums activating it. Latour and Ingold create an opportunity to understand the agentic properties of nonhumans: Latour explains that agency is distributed in a network, and Ingold suggests agency should be based on individual actions and the capacities of things. Their contribution is the philosophical ground for the next discussion on waste as an animate entity with agency.

### 2.1.3 Waste and Thing Power

> Materiality is a rubric that tends to horizontalize the relations between humans, biota, and abiota. It draws human attention sideways, away from an ontologically ranked Great Chain of Being and toward a greater appreciation of the complex entanglements of humans and nonhumans. (Bennett 2010, 112)

Thing power refers to the potential of everyday man-made things to transcend their status and, as Jane Bennet puts it, "to manifest traces of independence or aliveness, constituting the outside of our own experience" (ibid, 15). Bennet

claims things outside human subjectivity are capable of asserting themselves, that they have the ability to influence people. Humans prefer to believe that they are the only ones who manage the world of things. She asserts that 'thing power' will engender a whole new type of human culture, for example, one that uses more environmentally and materially sustainable methods of production and consumption (ibid). She discusses a pile of debris she encountered on the street as a case study to explain the effect of discarded objects that are no longer perceived as useful or valuable. Rising from a pile of trash, the potential of matter is "the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle" (ibid, 6). However, she clarifies that the need to discard things to make place for new ones diminishes the thing's worth. Still, she says, a thing "continues its activities even as a discarded or unwanted commodity" (ibid, 6).

Thing-power asserts that matter has the capacity to surpass humans through its liveliness, but it can only be fully functional in the context of an assemblage (Hawkins 2018). The unique features of waste components are enacted through actions, and their surprising capabilities or liveliness may emerge when they interact with humans and nonhumans. For instance, *çıkmacıs* vitalize construction waste as second-hand commodities that are later used in incremental rural constructions. The thing-power of waste is utilized by *çıkmacıs'* transient activities.

Another critical theory that could be useful for a nonhuman-agency perspective on waste is trans-corporeality, which represents the unbreakable bond between the human and nonhuman (Alaimo 2010). Referring to new materialism and material feminism, she argues that all embodied beings are connected to the material world through reciprocal relationships and transformative interactions: "Imagining human corporeality as trans-corporeality, in which the human is always intermeshed with the more-than-human world, underlines the extent to which the substance of the human is ultimately inseparable from the environment" (ibid, 2). In order to make moral efforts to protect animals, plants, and nature, she argues that the environmental justice movement should distance itself from the centrality of a separately-existing human subject. Further, ethical sensitivity and environmental awareness should stem from an excruciating and baffling interdependence and coexistence, that is, a being transcorporeal, a being a part of the active material world (ibid). Trans-corporeality allows us to rethink material agency in order to apprehend "the often unpredictable and unwanted actions of human bodies, nonhuman creatures, ecological systems, chemical agents, and other actors"

(ibid, 2). Trans-corporeality links to ethical discussions that problematize our interaction with waste.

In the book, *The Ethics of Waste* (2010), Gay Hawkins examines the way humans experience waste via their senses, feelings, and emotional interactions without ever withdrawing from it or denying it. She claims that although the disruptive presence of waste can endanger humans, it can also shape them by altering their habits and corporeal practices, especially the ones that determine their levels of attachment to what is discarded. To prove her point, Hawkins makes an analysis of gleaning, repair, and creative reuse practices. In her comments on Agnes Varda's documentary entitled *The Gleaners and I* (Varda 2000), Hawkins (2010) sees gleaning as an ethical stance against the excessiveness of waste or an act of self-sustainability within already existent cultural practices and habits. In another case, she concentrates on an Australian Aboriginal community's methods of 'making do' such as through gleaning or scavenging. These activities also suggest reusing whatever is available to utilize. A kind of 'creative reuse' system can thus emerge in less commodity-oriented cultures like these. There, the materials themselves take part in an authority structure that previously was a 'humans only' zone. The polarizing waste-human interaction could be the reason for the current environmental waste crisis:

> While environmentalism recognizes this in the demand that everybody "reduce, reuse, and recycle," this is only the beginning of the story. The imperative to manage our waste better or avoid the 'waste stream' altogether doesn't really get to the heart of how we might come to live differently with things. (Ibid, 76)

In the Global North, the sorting of waste into separate bins in households is considered adequate enough to count as ecological awareness. It is essential to underline the fact that these are volunteer workers donating their collecting and sorting labor to the recycling industry and energy production plants (ibid). Prior to the industrial revolution and before the waste collection managed by state, waste was an internal problem of the household. Resources were scarce, reuse was prominent, and people were more aware of the labor behind the manufacturing process. They knew how difficult it was to produce commodities.

Hawkins uses earthworms as an example of the art of transience (ibid, 119). Through their biological functions, the example of earthworms may have an ethical resonance, as seen by their ceaseless work in breaking down substances.

Her worms demonstrate how waste could be reused productively and assist the decomposition and renewal of substances. The same analogy could be made between the earthworms and building salvagers. Salvagers break apart buildings into individual elements to be used for other architectural projects but they cannot fully recover the energy and matter as well as saprophytes can (Lynch and Southworth 1990).

In her discussions about the accumulation of plastic products, Hawkins points out how the ethics of critical scholarship on single-use plastic has postulated its over-production and over-use (Hawkins 2018). Single-use plastic facilitates practices of disposability that are based on the forgetting of a material's afterlife (ibid). However, the concept of disposability contradicts the immutable and permanent materiality of plastic waste. In this future, all plastics, including construction PVC, should be discussed from the perspective of their materiality because their everlasting presence and toxic recycling processes are considered to be the cause of many environmental, spatial and geographical problems.

## 2.2 Geographies of Waste

The variety of compelling new materialist studies discussed above emphasize the transient aspect of waste's materiality and its association with people, space, and processes (Bell 2019). In the new materialist paradigm, there are no hierarchies, systems, or mechanisms that create dualistic boundaries between the natural and social world. Instead, there are relational processes that are the tangible results of the material effects of natural and social interactions. Waste is involved in the construction of new identities, interests, and daily politics. It resides in between those interactions as a broader result of consumption, circulation, and renewal activities like "food sharing, scrap metal collection, curbside scavenging and recycling, clothing reuse, reversible materials, building repair and repurposing and e-waste art" (Allon, Barcan, and Eddison-Cogan 2020). By focusing on trade, repair, and maintenance practices at the bottom of the waste commodification chain, researchers can better understand the transformative cultural and social processes derived from these new concepts of waste. Of course, close contextual encounters within urban space and places of exchange are also needed.

### 2.2.1 Second-hand Trade

Space is a complex vessel and repository, a transitional gap where things can be revalued. These gaps, according to Hetherington (Hetherington 2004), serve as places where an object's worth may finally be decided. However, in these places we distance ourselves from things that seem to be at our disposal. Examples of these places include a basement, attic, garage or even the recycle bin icon on a computer desktop:

> The gap is the space where things are held in a state of denying their wastage—where they are held at our disposal for a second time so that we can attain a settlement with their remaining value. (Ibid, 170)

The remaining values of things are stored in these gaps in order to be put into their secondary life cycle. For example, waste from previous production can pile up in the auto salvage yards, where valuable items can be retrieved from it, such as those with use-value and exchange-value (Soderman and Carter 2008, 20). Flea markets also function as spatial lacunae peripheral to conventional retail spheres and capitalist consumption patterns.

> We show here how car-boot sales [U.K. term for 'flea markets'] are located on the margins of, indeed often beyond, conventional understandings of retail space, and that they are placed there through the workings of regulatory power – a power that in this case is about protecting existing, often monopolistic, market environments through processes that both seek to 'other' car-boot sales and constrict the spaces in which they might operate. (Gregson and Crewe 2003, 20)

Building salvage yards and flea markets are both located on the periphery of urban areas. Those 'outer locations' set the framework for value creation and determine the geographic boundaries of second-hand zones. The second-hand sites are the product of possibilities and entrepreneurial imaginaries that work with and occasionally against the landscapes of power created and controlled by first-hand market capital (ibid). Remarkable transitional second-hand exchange spaces are revealed in Gregson and Crewe's book, *Second-hand Cultures*, where things are trapped in time and space, waiting for revaluation, with life cycles that are prolonged almost infinitely. Flea markets in the Global South are often pushed to the social and geographical periphery of urban areas due

to their waste trade, their association with informality, and the fact that the populations who attend flea markets are often socially and economically neglected and excluded (Seale, 2015).

In the ship-breaking examples that follow, a beach on the coast of India becomes a transitional gap for revaluing discarded commodities with divergent reuse activities. In conceptualizing waste and materiality, Gregson and Crang (2010) question the connection between waste and its management as a technological accomplishment. Waste has been understood primarily through the lens of its treatment and management practices. They argue for a paradigm shift: waste is a social construction and not just a category (ibid). The classification of waste as a stable entity fails to recognize the performative and dynamic function that disposal plays. Their case studies show that ship breaking practices enable the undoing of ships. In their research situated in Chittagong-Bangladesh, Gregson and others focus on end-of-life ships that no longer function as vessels but rather as thousands of tons of scrap steel (Gregson et al. 2010). In their work, Sitakunda beach is analyzed as a kind of lab where materials are transformed into new commodities through dangerous and poisonous processes. They argue that discarded ships are brought to this place from different regions across the globe because the "arts of transience" are so eloquently situated on that beach, and also, the dismantling of waste is loosely regulated there (Hawkins 2010, 123). The art of transience represents ethical concerns about sustainability that are based on everyday transactions. According to their research, through informal practices of transience, ninety-nine percent of the ships' materials are recycled into steel reinforcement bars for concrete used in construction in the Bay of Bengal. This is done by:

> Confining attention to movement up the value chain… and, paying attention to point of sale commodities, following the things research works to stabilize things in the still life of the object form. This stabilizes the object by stilling material and placing it utterly at the command of capital. Flatter ontological perspectives such as vital materialism acknowledge that it takes much to hold things together and that material is both agentic and performative. (Gregson et al. 2010, 853)

As Gregson and others suggest, salvaging, deconstruction, and revaluation processes all include creative material appropriation and alteration in the 'chocky-chocky' furniture industry in the beaches of Chittagong. These researchers claim that witnessing materials in transitory states enables us to

have a critical idea of the effort required to keep them together and break them apart.

The ontological thesis of their study emphasizes the intrinsically unstable properties of toxic waste materials. The breaking down of end-of-life ships reveal that things are assemblages that can always be dismantled. They conclude that every material has the capacity to be reassembled; nevertheless, some materials like asbestos should probably be stabilized and disposed of as wastes, regardless of how much maintenance effort it takes to do so in low-income contexts.

Waste is a dynamic and unpredictable material. Its transformative properties cultivate growth and development through its movement and formation. The unforeseeable identity of waste materials depends on their temporariness and capacity to create unexpected and unpleasant consequences. Such repercussions of waste appear in the case of the decomposition and production history of asbestos (Gregson, Watkins, and Calestani 2010; Mazzeo 2018). For example, building demolitions before the asbestos ban endangered waste workers and neighborhood dwellers' health in Turkey, which draws attention to the differences in waste management politics between the Global North and South. Waste regimes in the Global South allow divergent practices to emerge but ignore the environmental and health risks.

In a different debate, Gregson and others use a performance-based reading in regard to the disposal of asbestos (Gregson, Watkins, and Calestani 2010). They suggest broadening the concept of vital materialism from an ethical understanding of "generosity and enchantment" to "principles founded on respect, humility, responsibility, and astonishment towards those materials that most threaten human life" (ibid, 1165). The performativity of materials changes depending on human actions. For instance, asbestos is inactive in a building's wall or a ship's engine room, but after a disposal or salvage process alters its material state, it becomes active and agentic and endangers human health. It is primarily harmful within the zone of disposal and salvaging activities. Furthermore, the unregulated disassembling of large-scale commodities—by dismantling, carving, splitting, or pulling apart—is a transformative practice that includes a dissolution of form that animates other constituent materials. This concept of waste calls for seeing the material's life and capability as dynamic, association-forming, and dispersed across the material world.

Secondary lives of discarded commodities enable the achievement of new livelihoods through entrepreneurial activities. The presence of such materialities and active aspects of waste can lead to the creation of government manage-

ment and planning mechanisms for controlling urban growth. Such growth is shaped through governmental policies and infrastructures relating to repair and maintenance:

> The city is able to reproduce itself because of never-ending activities of repair and maintenance, which are not just incidental but provide a good part of its dynamic, as they continually rinse away breakdowns. (Graham and Thrift 2007, 7)

Waste and its accompanying salvage businesses take place in peripheral spaces although they are needed for rinsing away breakdowns in the center. These locations are yet again examples of the 'distancing from waste' rhetoric. They are commonly deprived of the proper regulations that control and manage the process of material transformation and reuse. Often these salvage processes activate dangerous aspects of the materials that, in turn, damage human health and the environment. However, these clandestine places also provide somewhere that materials can be creatively reused.

### 2.2.2 Assemblage Urbanization and Incremental Construction

> The materials themselves are multiple and of differential lifespans, from the relative obduracy of red brick through to the throw-away character of stop-gap materials like sackcloth or polyester… Different materials within the assemblage are more or less stable, while some parts can have multiple uses and spend large periods of time unused, such as small storage tanks for times of water shortage, sandbags stored in anticipation of the monsoon or stored bricks for post-monsoon housing repairs. (McFarlane 2011a, 216)

Spatialization of the everyday depends on a variety of materials in constructions that have multiple functions. 'Assemblage urbanization' is a term that refers to how salvaged materials are gathered to create informal architecture. Here, it is essential to highlight the 'hippie modernism' of the 1970s. It was based on the idea that self-help and ad-hoc construction were integral parts of architecture and design (Jencks and Silver 1972). In critical urban theory, assemblage thinking is used to identify the socio-materiality of urban life and the relationships that construct it empirically (McFarlane 2011a; 2011b; Acuto 2011; Farias and Bender 2011; Simone 2011; Dovey 2012; 2014; Blok and Farias 2016). Coming from Bruno Latour and Isabelle Stengers, the concept of *cosmopolitics*

plays a very supporting role for assemblage urbanism (Blok and Farias 2016). It reveals new ethical methods for co-constructing a shared environment with objects, infrastructures, and collectivities that coexist with humans. First, I look at the basic definition and properties of an assemblage to explain the social and material complexity of material salvage.

An assemblage is generated through its constituent components. A sociomaterial constellation of interrelationships between human and nonhuman parts equally participates in the whole without any hierarchy. Its philosophical meaning stems from a translation of the French word, *agencement*, which means 'layout, arrangement or alignment'. The term mainly stems from the philosophy of Deleuze and Guattari (Deleuze and Guattari 1987). According to Gilles Deleuze, an assemblage is a multiplicity made up of several heterogeneous forms; it creates ties and relationships between systems across different realms and is continuously subject to transformation (Parnet and Deleuze 2002, 132). As a tool for explaining social complexity, assemblage thinking is used as an anti-structural term that refers to emergence, heterogeneity, peripherality, and ephemerality (Marcus and Saka 2006; Farias and Bender 2011). The cartography of the *çıkmacıs*' assemblage is very complex but it can be seen as the convergence of the following actors: reclaimers (scrap collectors and demolishers), demolition discards (waste), urban transformation projects, laws, regulations, second-hand markets, supply yards, refugees, migration networks, cooperativism, communication, earthquake, transportation infrastructure and many others.

Through transformation, the dynamics of assemblages change in different phases at any point in time. The concept of territorialization and deterritorialization designate the transformation and the dimension of the assemblage (DeLanda 2006). Any procedure which breaks down or changes the boundaries of space or "increases internal heterogeneity is considered deterritorialization" (ibid, 13). As an example of such deterritorialization, demolition activity is a pertinent process in that it decomposes the materiality of a building assembly, downgrades the worth of building components, and supplies a surplus of discarded materials.

To differentiate between different assemblages and their transforming phases, De Landa introduces two parameters to analyze social structures: territorialization and coding (ibid, 13). By adding two adjustable variables, he parametrizes the assemblage concept to eliminate binary oppositions and dualities that polarize conceptual approaches for explaining social ontology.

Territorialization, that is, stratification, describes how well the identity and border of a social body are defined:

> The conflict between communities, in short, tends to sharpen their boundaries and to force them to become less tolerant of internal differences. This causes the assemblage to rigidify and homogenize; that is, to increase its degree of territorialization. (Ibid, 126)

A particular assemblage can be a deterritorialized system with loose borders. First, the relationships between its components blend with each other. Second, code is an indicator of how much a syntax or algorithm influences a social entity (ibid). The syntax in social bodies emerges as rules, regulations, and laws that lead to dichotomies like formal and informal. One way that assemblages work as wholes through "relations of exteriority" is that they have individual capacities to interact with each other (ibid, 10). Exteriority means that components may be disconnected and inserted into a new assembly. Their properties are emergent. For example, reuse practices enable discarded materials to be reassembled into another body in a geographically, socially, and economically different setting. Dwelling, as a verb, can make new arrangements that displace and replace construction materials. Dwellings and other assemblies coexist to form the urban, which is a multiplicity:

> This process of socio-material engineering involves the translation of various materials into new uses over time, including roofs that become, first, floors for sleeping then, later, spaces for renting out and ladders that shift from being access points to the roof to stairs for a new family living in a newly built shack on the roof… materials, such as the ladder or the corrugated metal sheets, operate as functional systems that coordinate different domains, from the spaces of the shack to the aspirations and desires of the inhabitants and the availability of money and materials. (McFarlane 2011b, 658)

The incremental construction process of a favela dwelling in Paraisópolis (a neighborhood in São Paulo, Brazil) is interpreted in terms of assemblage urbanism (ibid). Their dwellings are made from a colorful assemblage of cement and found objects like children's toys and discarded pieces of plastic and metal. He suggests that just such a socio-material assembly of discarded things begs the questions of what additional knowledge of the city it may provide, of how these activities of gathering, composing, aligning, and reusing could add to

our understanding of urbanization. That is why McFarlane's study of a dwelling created by informal activities may indicate that urbanization is a gathering and assemblage process, an alignment of social and material activities.

In particular, he contends that the idea of assemblage is crucial for comprehending the spatially associated, productive, and processual character of the city. Generativity is defined as the momentum of capital accumulation within the unpredictable juxtapositions that define urban space. For instance, informal and formal urbanization's juxtapositions bring together the urban life in the Global South. The spatiality of an assemblage is formed by arbitrary proximities, disruptive occurrences, and regular everyday cycles of work, ambiance, and communality in addition to past and present capitalist dynamics. Therefore, the city could be conceptualized as multiple assemblages of everyday and imagined urbanisms supported by emergent infrastructural practices that deal with materials. This idea is based on the hypothesis that certain powerful agendas or groups can disperse and realign the elements of individual urban assemblages, but not with any pre-given spatial or temporal templates (planned urbanism) (McFarlane 2011a, 224). As an example, he points out that the favela as an urban setting is territorialized, deterritorialized, and reterritorialized by the municipality and international NGOs or other aid institutions as well as its residents. Such transformation is materialized within the dwelling level through the agency of discarded or affordable materials.

To demonstrate the significance of assemblage discourse in his research, McFarlane notes how particular materialities play an essential part in the configuration of urban inequality within the poor's everyday lives (ibid). For a subaltern cosmopolitanism that provides the new basis for new urban commons, such material networks may be seen as essential resources that construct the domesticity of informal settlements:

> The materialities of the home—whether in the form of housing objects ranging from sackcloth and corrugated iron to brick, breezeblock, and hydroform, or infrastructures of drainage, sanitation, water, or electricity—play a central role in the everyday lives and hardships faced by the poor. Housing within informal settlements is typically—though not exclusively—constructed individually and incrementally, using locally available materials, and often clustered in ways that depend on closely shared roofs, walls, and infrastructures. Infrastructures and the housing materials themselves often change, are added to or discarded over time, revealing

> a complex rhythm of assembling and reassembling that is central to the form and nature of domestic life. (Ibid, 216)

Assembling and reassembling processes of materials in incremental urbanism is closely associated with the agentic roles of reused and recycled materials. These construction processes consider materials a resource separate from industrial recycling, that is, not as a raw material but as a necessary object that reflects the urban inequalities and uneven distribution of urban resources. Squatters build their homes by collecting materials from "local construction debris, riverbeds, manufacturing waste, or patches of tree cover" (ibid, 216). It is crucial to underline the role of materiality in how urban informality is made, unmade, and remade by these apparatuses. Simultaneously, relational practices are the embodiment of foresight that senses how to make the next maneuver with the incremental accumulation of potentials and possibilities:

> The surface… is a de-signed built environment, an act of fabrication in both senses of the word – i.e., something that is put together from available materials and something that need not tell the "truth" of a given situation, whether that situation refers to the process through which the built environment was constructed, what it was intended to be used for, or what use can be made of it. (Simone 2015, 26)

The harmony of the surface with its patchwork combination depends on the complexity of its social layers. The surface renders explicit not just harmony in terms of an economic or spatial evaluation but also the way that particular socioeconomic classes can improve their surroundings (ibid). For example, building practices in Turkey rely on collage, composition, and gathering methods. Inhabitants of post-colonial areas have had to rely on their incrementalist and relational practices of survival. They have the ability to salvage the components of the urban surface, which is a hybridization of their physical surroundings, livelihoods, social connections, and socioeconomic status. Such gradual and interim development, which relies on small investments and the cheapest available materials, characterizes construction and repair activities in the Global South (Greene and Rojas 2008; McFarlane 2011b; Silver 2014; Dovey 2014).

McFarlane adopts the notion of assemblage thinking by offering three conceptual categories: descriptive orientation, rethinking agency, and critical imaginary (McFarlane 2011a, 2). First, he claims that ethnography is a

descriptive orientation and methodological tool that investigates dynamic processes and everyday practices in-depth and with thick description. In paying comprehensive and empirical attention to relational conditions of actants in which socio-material assemblages are formed, urban researchers can better grasp how current urban inequalities are shaped in everyday life. A significant contribution that assemblage thinking could bring to critical urbanism is the revealing of ethnographies of specific urban resources. For instance, to redefine waste as an urban common would reveal the emerging uses and possibilities of materials. Furthermore, it would provide a new viewpoint that could bring together the complexities of daily life and issues of broader economic change.

Secondly, he discusses that agency is distributed to all actants within the assemblage, not only to an overarching system or structure. Such a framework goes beyond conventional interpretations of human influence by acknowledging the significance of things such as infrastructure, waste, dwelling, etc. For McFarlane (ibid), urban socio-materiality is not a passive backdrop to urbanity but actively shapes cities. This everyday socio-materiality also reflects urban inequalities and possibilities that arise from such conditions. Through deploying a multitude of coexisting actants, assemblage thinking facilitates the discovery of new findings by expanding the socio-technical horizon to include "policy documents, housing and infrastructure materials, placards, banners, and picket lines, new and old technologies, software codes, credit instruments, money, commodities, or material conditions of urban poverty, dispossession and inequality" (ibid, 215). With this distributed agency perspective, heterogeneous demolition waste management can emerge as a resource for constructions peripheral to the development of urban areas.

Lastly, McFarlane argues that assemblage thinking has the potential to revitalize the urban imaginary through the adoption of a progressive cosmopolitanism. It suggests a more inclusive urban commons built on mutuality, solidarity, and opposition. Encouraging new methods of linking criticism with political activism, a form of a right-to-the-city, he sees assemblage as "collage, composition, and gathering" that "implicates a privileged us with an exploited they and uses that as a basis for collective recognition, forging solidarities and resistance" (ibid, 221–222).

Major criticisms of assemblage urbanism and its ontological assumptions are made by authors who believe that assemblage thinking is decontextualized in explaining the critical urban concepts without utilizing critical urbanism

based on political economy (Brenner, Madden, and Wachsmuth 2011; Rankin 2011; Tonkiss 2011). It doesn't pay attention to the "context of contexts" and doesn't fully understand how capitalism shapes modern cities:

> In particular, the descriptive focus associated with ontological variants of assemblage urbanism leaves unaddressed important explanatory questions regarding the broader (global, national, and regional) structural contexts within which actants are situated and operate—including formations of capital accumulation and investment/disinvestment; historically entrenched, large-scale configurations of uneven spatial development, territorial polarization and geopolitical hegemony; multi-scalar frameworks of state power, territorial alliance formation and urban governance; and the politico-institutional legacies of sociopolitical contestation around diverse forms of dispossession, deprivation and discontent. (Brenner, Madden, and Wachsmuth 2011, 233)

Brenner et al. challenge three critiques of assemblage urbanism (ibid). The first criticism is directed toward the micro-focus on socio-materiality from an ontological perspective; they claim that this neglects the influence of the global economic power relations that structure and influence urban life. Second, regarding these urban topics, they find that the ontological perspective of assemblage thinking is abstract and indefinite; it is disconnected from the critical issues that urban political economy problematizes. Third, instead of focusing on certain institutions and social dynamics, their assemblage thinking highlights the importance of nonhuman actors (ibid). It proposes ambiguous forms of material and human relations and anonymous political powers as a way to understand the constitution of urban inequality, precarious living conditions, and uneven development. They conclude that it's vital to use assemblage thinking's methodological experimentation and intellectual risk-taking to build a critical urban theory that is still based on the geopolitical economy. However, for McFarlane, assemblage thinking is not about setting up a new ontology for critical urbanism. Rather, he prefers a strategy that combines assemblage thinking with other critical, activist, and underrepresented practices through highlighting urban life, thick description, and politicized radical commons (McFarlane, 2011c, 738). Rather than replacing political economy, assemblage thinking calls for a new understanding of capitalism as the result of socio-material processes. Simone finds the socio-material in the "surfaces of urban life" (Simone 2011, 357).

Simone's remark aims to lead the assemblage debate away from abstract issues and toward notions that attempt to understand urban living empirically (ibid). He is concerned with the reductionist methods that approach the topic only in terms of capitalist accumulation and exploitation. However, his point is not that political economy approaches are irrelevant, but rather that analysis of capitalism does not lead to a complete description of urban sites, in particular to what he refers to as surfaces and urbanization customs (ibid, 362). Simone interprets assemblage thinking as an observation method focusing on urban life in particular locations and comprehending how urban life is carried out. He does not interpret urban surfaces only through the perspective of control, commodification, and dispossession of capital. He observes them through more repetitive, complex, and obscure processes of adaptation and collaboration. To reinforce his point, he refers to the Tanah Abang textile market in Jakarta. He identifies the market as a multi-layered surface that, while being made up of a dominant controlling class, overarching politics, and commodification, also has, at the same time, the affiliations and collaborations of its people and trade practices that share common opportunities, experiences, memories, risks, and struggles within and beyond the surface level of the market surface:

> There are surfaces of compliance, orderly distributions of space, opportunity, and costs, of obeisance to formal authority and surfaces of continuous rehearsal. Here, the market becomes an occasion to reiterate memories of association and to provisionally explore new ones; where the buying and selling is the mechanism and incentive to chart out transactions and affiliations that 'shift things around'—materials, opportunities, connections, information, affects—that provide a critical supplement to people's urban lives. (Ibid, 363)

In explaining relational practices that revolve around market spaces, Simone remarks on repair services and the trade of second-hand items (Simone 2015). His empirical studies often focus on markets where such informal practices accumulate. Below the surface of urban life in Tanah Abang's market dynamics, the interplay between the formal and informal is interpreted as a certain strategic mode: he describes the level of accessibility as contingent upon how one navigates the market's happenings and activities (Simone 2011).

A comparable notion of such a dynamic setting resides in Rahul Mehrotra's concept of "kinetic city" as "ephemeral urbanism" versus the "static orderly

city" (Mehrotra, Vera, and Mayoral 2017, 17). In the cities of the Global South, as opposed to the two-dimensional modern ways of building cities, he states that the temporary quality of the kinetic city derives from incremental and informal urbanization. The environment is usually built with recycled and adjustable materials like "plastic sheets, scrap metal, canvas, and waste wood"; a typical example of this would be local marketplaces that accommodate street vending, festivals, and pop-up dwellings inhabited by marginalized people (ibid, 18). Unlike cities constructed with steel and glass using the futuristic designs of utopic urban planners, most emerging cities are built from clay bricks, straw, recycled plastic, pumice blocks, and scrap wood (Davis 2006, 19). Living with waste is a daily reality for people and communities in the Global South. Waste is linked to physical and social precarity, deteriorating living circumstances, and economic restrictions and support processes (Bell 2017). Waste is turned into useable resources via adaptive recycling methods in which people's networks, services, and infrastructure are expanded beyond the confines of the contemporary modern city: "In this way a kinetic city recycles the static city to create a new spectacle, new conditions, and unexplored possibilities" (Mehrotra, Vera, and Mayoral 2017, 19). The transience of the city is not only fixed to the materiality of the space but also to the movement of its people. The flux of the kinetic city relies on functioning infrastructures that connect urban and rural.

For instance, introducing circulatory urbanism, Echanove and Srivastava discuss a concept of acknowledging a commuter urbanity that rejects the static city and the perception of the duality between rural and urban that includes accessible movement and communication in-between (Echanove and Srivastava 2014). They defend the urban-rural continuum because of its historical economic and social dependency on seasonal labor. Their perspective is based on the fact that, no matter how far away, they keep their connection with where they come from, their village. To put it differently, various social dynamics are shaped over time, such as social networks; religious and familial relationships; and shared labor skills and knowledge bases (Simone 2015). To a great extent, the achievement of circular urbanity relies on these social systems and the prioritization of infrastructural needs that authorize the individual's mobility. Without the entrepreneurial initiative of the people and accessibility of urban infrastructure, it is questionable whether or not the villagers could continue to exist on the margins of the megacity.

Assemblage urbanism reads this heterogenous whole in a flat non-hierarchical perspective that possesses the value of being a distributed agency.

Second-hand markets could be analyzed using the concept of assemblage urbanism because they are made up of human and nonhuman actants and their connections. A network of things and practices forms a relational whole that functions heterogeneously. It works with the potential, emergent, generative and contingent characteristics of the assemblage. While second-hand markets are still attached to the historical accumulation of capital, they are also open to unpredictable outcomes. For instance, informal ship-breaking activities enable a second-hand furniture sector. This sector is an outcome of the global waste trade and everyday survival strategies of economically-excluded communities. Favelas or *gecekondus* are built as the result of the multiplication of social and material processes. In this context, discarded materials are in a transitional state in which waste is not a category but a sociomaterial construction of the environment. Furthermore, incremental construction processes of informal dwelling display practical (real) and imagined (ideal) urbanization juxtapositions. As Simone (Simone 2011) argued, assemblage urbanism is a heuristic tool to understand the urban surfaces containing reassembled materials, unexpected possibilities, experimental maneuvers and prospective experiences.

In my book, socio-materiality of waste and relational aspects around dwelling production are interpreted into the material, labor, and economic relationship (second-hand market) that shows how unrecognized forms of income generation are constituted around the waste. Generally, waste scholarship associates informality with infrastructural labor and its relationship with formal management systems. Next, I will discuss informality as a mode of relationality between the unrecognized actors of infrastructural assemblage.

## 2.3 Waste Labor

> As a concept, urban informality therefore cannot be understood in ontological or topological terms. Instead, it is a heuristic device that uncovers the ever-shifting urban relationship between the legal and illegal, legitimate and illegitimate, authorized and unauthorized… that serves to deconstruct the very basis of state legitimacy and its various instruments: maps, surveys, property, zoning and, most importantly, the law. (Roy 2011, 233)

The informality of building salvage is not an indicator of a unique economy or recycling market. It is a complex bundle of political, economic, institu-

tional, and material processes across time. It should not be regarded as a pregiven and stable category because it is ever-transforming and dynamic. The margins between the formal and informal are territorialized and deterritorialized by the trade routes of the unregulated second-hand market. Codes represent dominating political and economic power facilitated by regulations and laws. They include a set of principles or policies that determine the relationality between the informal labor and formal market dynamics. These margins constantly interplay with each other, forming divergent networks and relationships. Altering the informal and formal dualisms, assemblage thinking can explain the shifting lives of people dealing with poverty who are continuously going into and out of informality. Changing laws, government regulations and waste management systems often cause building-salvage practices to find heretofore unrecognized new valuation systems through the trade of CDW.

### 2.3.1 Infrastructural Maneuvers

Within modernizing processes of economic, social, and cultural systems, the people who are coping with urban poverty in the Global South already find it hard to adjust to market structure, contracts, exchange values, speed, and bureaucracy. In addition to these struggles, it is important to interpret informalization as a spatial, societal, and economic adaptation process. Informalization of urban life is influenced by global economic integration schemes, the deregulation of prices in the real estate market, the weakening of welfare resources (reduction of social programs, subsidies for common goods), and clientelist privatization (Bayat 1997, 20). To discuss the shift from socialist and populist regimes to liberal economic policies in the context of Middle Eastern cities, Bayat argues that the increasing number of marginalized urban poor are based on processes of financial restructuring, economic integration, informalization, and social exclusion (Bayat 2000). To tackle this, economically disadvantaged individuals slowly find their own strategies of survival. To acquire the basic necessities of their lives (land for shelter, urban collective consumption, informal jobs, business opportunities, and public space), individuals and families engage in modestly quiet and collaborative livelihood strategies that are informal and sometimes illegal (Bayat 2004, 257).

Bayat's assessment is informed by Michel de Certeau's (Certeau [1984] 2013) idea of the 'practice of everyday life' as a collection of methods that are capable of dismantling the authoritarian structure of power and disci-

pline. He is intrigued by the spontaneous and disorganized spatial outcomes of the marginalized. What Bayat means by "the quiet encroachment of the ordinary" is the urban poor's life-long and subtle search for social and economic security, a search that navigates the overarching dynamics such as globalization and financialization; the ultimate goal is to maintain or look for autonomy in unaffected circumstances and environments (Bayat 2000, 536). This encroachment by subaltern people results in the emergence of street politics that fundamentally change the city (Bayat 1997). While describing 'the habitus of the dispossessed', Bayat (2007, 580) argues that urban life is epitomized by adaptability, pragmatism, negotiation, and an endless battle for survival and self-development. These kinds of interventions are searching for an exit from the globalized economic order (ibid).

Comparable in some respects, Abdoumaliq Simone (2004; 2006; 2015) relates how residents in an African city establish habits and routines that help them become resourceful despite the lack of available infrastructure. The key to overcoming such a crisis is to "multiply" the functionality of "documents, technologies, houses, [and] infrastructure" regardless of what materials need to be appropriated for production; and this shows their capacity to mobilize people "with different skills, perspectives, linkages, identities and aspirations" (Simone 2006, 358). He refers to these practices in non-binary terms, defining them as 'relational infrastructures' produced by community associations as well as relationships that constitute the possible ways of inhabiting cities:

> These relationships are not just social events or descriptors of exchanges and transactions. They are not simply embodiments of sentiment or vehicles for organizing work, expenditure, attention, and recognition… Rather, they are materials themselves to be articulated in various forms in order to construct circulations of bodies, resources, affect and information. They are vehicles of movement and becoming, ways of mediating the constantly oscillating intersections of various times, spaces, economies, constraints and possibilities making up city life. (Simone 2015)

Thus, such infrastructure is not just the incarnation of particular materialities and operations but also a layer of exchanges and associations that exercise their own capacities in unexpected patterns. Infrastructure with its relational attributes acts as an assemblage. Infrastructure is a physical entity and a collection of social functions and relations. However, as has been well noted with respect to Southern cities, the locus of infrastructure continues to be fragmented

because it is characterized by intermittent processes, resources, and temporality (Amin 2014; Simone 2015).

These maneuvers for the organization, expenditure, and recognition of work facilitate the circulation of bodies, resources, affects, and information. Simone (2015) suggests that collaboration and commonality are the key identifiers of how relational ties are constructed to create ways of income generation. According to him, the adjoining businesses can be deployed as a cohesive organization, pooling resources like equipment, connections and manpower. The transactional entrepreneurs are recognized as co-residents connected to one another by ethnicity, diverse habitation histories, traditional kinship relations and various networks of work organizations or economic orientations.

Besides the aspects of relationality discussed by Bayat and Simone, there is a great deal of related theoretical work within the context of informal labor that will be addressed in the next section.

### 2.3.2 Informal Waste Labor in the Global South and Turkey

The critical approach to the political economy of informal waste labor denounces the dualist tendency to separate the informal and formal sectors; instead, it sees the two as deeply associated with each other (Portes, Castells, and Benton 1989). Informal waste collectors are an unenviable part of post-colonial economic development and the transition away from an agriculture-based economy in the Global South (Gidwani 2013; 2015). Some see them as constituting a secondary sector attached to the formal market like the reuse and repair economy in India (Corwin 2018). This economy depends on global commodity markets that regulate material prices (ibid). Others discuss the vulnerability of informal labor in the environment of 'accumulation by dispossession' that is a consequence of urbanization (Gidwani and Reddy 2011). Another study, from Kavya Michael and others, analyzes informal labor as an 'arrival occupation' for the refugee and migrant population in Bangalore, India (Michael, Deshpande, and Ziervogel 2019).

More significantly, informality is embedded in waste systems based on the coexistence of heterogeneous socio-technical forms (Gidwani 2015). In a heterogenous waste regime, some of the researchers highlight the function of co-operatives that need strong support from the government in order to continue their micro-entrepreneur status in the Global South (Dias 2016; Gutberlet et al. 2017). By emphasizing the social and human resources aspect and taking

into account various forms of collective organization, such as waste collector cooperatives, Dias and Gutberlet (2017) address livelihood commoning, security, social agencies (NGOs), social support, participatory policy-making, and decent working conditions. In other words, they address those socio-technical forms of waste collection that adapt to the governing system through the cooperation of dispersed actors (individual waste pickers). This resembles the concept of an assemblage, in that it "is a mode of ordering heterogeneous entities so that they [can] work together for a certain time" (Müller 2015, 28).

The existing research on waste pickers in Turkey is based on the conflicts between informal waste pickers and the state, recycling sector, and new regulations (Dinler 2016). A further study by Tuçaltan discusses the changing waste regime in Ankara and the coexistence of waste pickers with the formal waste management system (2018; 2019). In another study, the waste pickers' mobility in the city is examined by observing their territorial negotiations (Altay and Altay 2008). In yet another study, in Istanbul, the visual representation of waste pickers is politicized by using documentary video and photography (Şen and Artıkişler Kolektifi 2014).

The research on self-employed waste pickers in Turkey follows their confrontation with new state regulations and recycling market dynamics. In her dissertation combining ethnographic analysis and political economy, Dinler (2016) investigates how the waste pickers regulate the recycling market labor. In the context of Turkey's informal market, she reveals the local government's attempts to control the self-regulated structure by establishing formal legislation and interfering with the trade by forcibly decreasing recycling exchange rates. Going further, she argues that the solidarity organizations of the waste pickers are crucial for their access to social welfare. In her study, the role of social associations, such as those of kinship or tribe, are a significant aspect of wealth accumulation when it comes to questions like warehouse ownership or where waste is stored. Lastly, she reveals how, from within the global market, the London Metal Exchange also sets the prices in the local recycling market in Ankara (ibid). Her study shows that, by following the currency of metals, the local exchange value of recycling materials (as raw input for the recycling industry) is regulated by global markets. Importantly she suggests that although the recycling market appears independent because of its self-employed and informal nature, the financial institution's rules and policies regulate the dynamics of the market (ibid).

Although the arrival of formal actors and technology changed the labor structure in the early 2000s, informal players have remained an essential

feature of Tuçaltan's work on Ankara's waste systems (Tuçaltan 2019). She investigates the connections between urban waste governance and capitalist urbanization in regard to the urban regeneration of landfills. She links the urban transformation of a landfill area with the *gecekondu* squatters around it through their connections with the socio-technical advancement in waste management and municipal investment to create luxurious dwellings. She points out that the destruction of storage spaces belonging to waste pickers forces them to leave the area and sell their collection for low prices rather than ending the informal recycling. According to her findings, waste was transformed from being useless to being a resource. She claims that "urban planning serves as a tool to transform an open dumping site, and this socio-technical transformation became an instrument for the acquisition of land rent" (ibid,10).

The waste paper collectors named themselves the 'papermen' in Ankara (Altay and Altay 2008). Altay's artistic research on the papermen shows that the precious and the discardable can coexist and displace one another. Observing the movements of the papermen and logging them into a diary with his observations, he mapped their movements in Ankara's neighborhoods. His methodology covers the relationships and hierarchy between different types and groups of recycling workers. The hierarchy depends on their kinship and ethnicity (ibid). Another critical artistic research by a collective called *Leftoverworks* (Artıkişler) focuses on the papermen from a cinematic perspective that problematizes the representation of waste labor, focusing on their conflicts with the local government, which aims to ban collecting from the streets. Their surveys and interviews in video format reflect upon the oppressive urban politics of AK Party on the poor and refugee workers from Syria (Şen and Artıkişler Kolektifi 2014). Their work shows that documentation based on video and photography is a beneficial medium for ethnographic research. They use activism through media and exhibitions that problematize the rights of informal recycling workers.

The studies on waste collectors in the Global South are also important for comprehending informality as a continuum of the capitalist system in Turkey. Informal labor is an integral part of heterogeneous waste management. In these assemblages, *çıkmacıs* have a different relationship with waste when it comes to its potential to be counted as a common resource because they do not glean from the street, but instead deal in construction scrap. Additionally, they commodify materials in the second-hand market. However, they are vul-

nerable to dualist and legalist policies since they operate in recycling sectors by collecting and sorting waste.

## 2.4 Conclusion

This chapter maps different theorizations of waste for assembling a framework to comprehend production and revaluation of second-hand components and recycled materials. Waste is a social matter that originates from interactions with humans and nonhumans (Bell 2019; Bauman 2011). Some conceptualizations of waste ignore the unbreakable and existential relationship between modernity and waste in the Global South and they create distance between humans and waste. By tapping into new materialism and actant ontology, the agency of waste is highlighted to create a ground for focusing on empirical studies based on the global circulation of end-of-life objects revaluation through the secondary sectors. Additionally, the issue of disposability of plastic objects raises ethical considerations on the sustainability of the recycling industry (Hawkins 2009).

My encounter with reclaimed materials transcribes the 'dramatic and subtle' effects of trash piles (Bennett 2010, 6) that precedes practical and aesthetic processes in reclamation building elements. The term, actant, borrowed from Bruno Latour (2007) underlines the agency of discarded matter within a sociotechnical assemblage which interconnects demolition practices, second-hand trade, and building construction. Therefore, the political and social features of recycling are debated around ethical concerns through the concept of disposability that centers ethical behaviors and habits into environmentalism (Hawkins 2010). The conceptual framework of material reclamation apprehends the corporal relationship between waste labor and the materiality of waste.

The formalization of waste infrastructure is a capital venture for profit-driven systems like real estate that feed from the creation and speculation of urban land value. These dynamics further reflect the shifting waste regimes hinged on infrastructure, actors, power struggles, and valorization dichotomies. On the other hand, the notion of assemblage thinking is a ground for portraying an empirical sensitivity to the ways in which waste and people continuously interact, merge, and reconfigure one another to weave the urban fabric of everyday situations. Incremental means of informal dwellings is a gathering process that implies how urbanization is an assembly process and

how waste is reused creatively (Dovey 2014). The complexity and dynamics of urbanization as a process are illuminated through temporary and transient socio-material interventions.

The notion of the practice of the everyday is reviewed within studies that conceptualize and politicize livelihood activities and entrepreneurial maneuvers of dwellers (Bayat 2013; Simone 2015). The inner dynamics of urban life appear to depend on social and material relations beyond the political economy's concept of the urban. Informality is defined as the shifting mode of power relationships between institutions, regulations, codes, policies and the efforts of ordinary people. Such scholarship reveals an intricate micropolitics. A strategic provision of makeshift infrastructural systems and spatial practices permits individual dwellers and social communities on the outskirts of rapidly expanding megacities to develop a good affiliation with local and global institutions. The scholarship on informal forms of infrastructural waste labor in the Global South reviewed their emergence into the heterogenous whole (Gidwani 2015; Tuçaltan 2018). Additionally, waste picker cooperatives are seen as the conjoining continuum between the informal and formal processes. My main argument in bringing together such a review is to highlight the ways in which the materiality of waste and human interventions are strongly bound to each other through relational networks.

Nevertheless, I base my research on the *çıkmacıs* who are invisible mediators of such material agency. Their role is two-fold: as part of the secondary sector (Corwin 2018) and as off-the-record migrant workers for the recycling industry (Michael, Deshpande, and Ziervogel 2019). The agentic materiality of second-hand components is vital for places where incremental (Dovey 2014), ephemeral (Mehrotra, Vera, and Mayoral 2017), and assemblage urbanism (McFarlane 2011a) takes place in the Global South and late-modern countries like Turkey.

While the political economy may help to explain the elevated level of discontinuity between formal and informal forces, it is more likely that this seeming discontinuity conceals some type of distributed agency at play (Simone 2011). On the one hand, I utilize political economy to explain the neoliberal politics that instrumentalize urban demolitions for profit. On the other hand, I use assemblage thinking to micro-focus on material aspects of socio-material relations in building salvage and incremental dwelling construction. In the context of the study, the core concerns of the critical political economy remain fundamental for analyzing capitalism's influence on the commodification of land and urban transformation in an ontological sense. Still, by employing as-

semblage thinking as its central analysis and empirical concept, the study extends into a new inquiry of nonhuman agency and everyday urban life redefined around urban informality.