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Value dynamics in Ordinary Object Disposal

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Declaration of Interest: None.

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Abstract:

This study elucidates that values in disposal unfold dynamically out of interactions between consumers (skills, practices, knowledge) and objects (properties, interlocking mechanisms, functional interdependencies) that are embedded in a specific disposal context (social networks, discourses, spaces, infrastructure). Using in-depth interviews, the authors demonstrate that the context in which disposal is situated is not simply a background against which disposal decisions are made, but actively plays out in the emergence of values in disposal. Ordinary objects are made of matter and their material properties, interlocking mechanisms, and functional interdependencies are revealed when disposal is being contemplated and guide consumers' value perceptions, exposing them to different material constraints and potentially enhancing the object's agency in shaping its disposal. Revealing the full value dynamics surrounding the disposal of ordinary objects could help businesses and policy-makers enhance consumer values when designing sustainable products, waste-management interventions, and disposal infrastructures.

Keywords: Disposal, Materials, Value, Ordinary objects, Waste

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1. Introduction

Disposal entails various courses of action including repurposing, throwing away, recycling, circulating, or keeping; each with different emotional, environmental, economic, and social consequences (Gregson, Metcalfe & Crewe, 2007; Jacoby, Berning, & Dietvorst, 1977; Majid & Russell, 2019). Current research is increasingly emphasizing the different value domains underlying disposal courses of actions (Cruz-Cárdenas, Guadalupe-Lanas, & Velín-Fárez, 2018; Hetherington, 2004; Jacoby et al, 1977; Türe, 2014). The disposal of cherished possessions and family heirlooms involves the stressful, sometimes painful, process of finding the right new owners in order to protect identity and kinship connections (Curasi, Price, & Arnould, 2004). Values associated to disposal also materialize in the routines of sorting, rinsing, crushing, and putting ordinary items into recycling bins as consumers reflect on recycling guidelines, sustainability discourses, moralities, and what it means to be a good citizen (Hawkins, 2006; Zou & Chan, 2019). The circulation of ordinary objects among friends, family, and people in need also highlights different values that underlie disposal (Cruz-Cárdenas & del Val Núñez, 2016; Majid & Russell, 2019; Türe, 2014). Although these studies are insightful, they shed limited light on how the material composition of objects may interfere with or enhance values in disposal. Therefore, this study explores how materials might influence the way in which consumers act on their values when disposing of their unwanted objects.

Ordinary items that are palpably divorced from identity work, such as an old toothbrush, a broken fridge, or unused pencils, have a physicality or a material composition (Ingold, 2007) that is unfolded during their disposal. Without reifying a symbolic/material duality, the authors argue that ordinary objects are made of matter and that their emergent material properties, interlocking

mechanisms, and functional interdependency guide consumers' value perceptions, which potentially enhances the object's agency in its disposal.

Revealing the full value dynamics, including material interplays, that surround the disposal of ordinary objects could help policy-makers to account for consumer values when designing waste-management interventions. Current policies develop waste-prevention initiatives and set ambitious zero-waste goals to prioritize reuse, repurposing, and circulating over recycling and landfill (Van Ewijk & Stegemann 2016). In spite of this, however, waste prevention has not yet become an implicit principle among consumers (Cherrier, Türe, & Özçağlar-Toulouse, 2018). This work reveals that the values associated to reuse, repurposing, and circulating are implicated in the physicality or material composition of ordinary objects. This finding challenges the waste-prevention initiatives that have been built on mass-mediating environmental awareness campaigns and information provision as solutions to undesirable disposal. Alongside the discourses of sustainability, morality, and citizenship, implicating the materials in waste-prevention initiatives by facilitating interactions among consumers, materials, and their context enhances the emergence of values in disposal.

Understanding value in the disposal of ordinary objects has implications for businesses wishing to support sustainable production and consumption. Improving the material durability of consumer goods is not sufficient to extend product longevity (Türe, 2014). This work shows that businesses should acknowledge consumer–object–context interactions that enable or hinder the valuation of durability in the circular economy. Understanding value dynamics in disposal can also help businesses to establish long-term contracts with their customers and establish shared material responsibility throughout all the stages of consumption, including disposal.

Finally, studying the disposal of ordinary objects has important implications for current theorizations of disposal, most of which focus on meaningful objects and consumer identity

work. Considering how ordinary objects are disposed of in everyday life can reveal the relational aspects of disposal as a process of interaction between the self, the object, and the environment. This makes it possible to consider disposal not as the sole responsibility of consumers, but as a shared responsibility among stakeholders.

2. Disposal Research

Most of the research on disposal adopts the idea that our possessions are an extension of ourselves (Belk, 1988), highlighting the emotional and cognitive aspects of disposing of them. Consumers, who are concerned with protecting, transforming, or getting rid of certain aspects of their identity, dispose of their possessions in specific ways or pass them on to specific people (Cherrier & Murray, 2007; Curasi et al., 2004). This literature provides important insights on disposal (such as divestment rituals), but focuses on the symbolic meanings of objects and their links to consumer identity. For ordinary objects, which are less pertinent to one's life or self, and whose disposal might be part of the household routine, we still lack a theoretical understanding of how values influence disposal.

Ordinary objects are commonly considered as unwanted items with no value when they are deemed obsolete, broken, or no longer useful; they are considered to have a negative value when they are deemed "matter out of place" or threatening to the taste structures of the home (Douglas, 1984, p. 36). The literature, although scarce, has shown the importance of values in the disposal of ordinary objects and has highlighted personal, social, and sustainability values that guide recycling, circulating, and repurposing (Gregson, Metcalfe, & Crewe, 2009; Hibbert, Horne, & Tagg, 2005; Türe, 2014). In early studies, disposal is presented as a waste-management problem that is shaped by various factors, including situational differences, objects' attributes, consumer characteristics, and personal values (DeBell & Dardis, 1979; Hanson, 1980; McCarty

& Shrum, 1994). Current waste-prevention initiatives categorize household disposal practices in terms of their impact on the environment. From this perspective, repurposing, circulating, and (to a lesser degree) recycling extend the life of unwanted objects (Cruz-Cárdenas et al., 2018; Goworek, Oxborrow, Claxton, McLaren, Cooper, & Hill, 2018; Gregson, Crang, Laws, Fleetwood, & Holmes, 2013), while throwing away and keeping are detrimental to the environment and can result in value loss (Birau & Faure, 2018; Gille, 2010; Gregson et al., 2013).

Specifically, by circulating (i.e., giving away, selling, or donating) their objects, consumers express the values of care, thrift, convenience, order, and sustainability, and they nurture communal and personal connections (Ozanne & Ballantine, 2010; Türe, 2014). Repurposing prolongs the life of an object because the consumer reuses it at home, with or without a physical transformation. By repurposing unwanted objects, consumers reduce the demand for new ones (Cherrier et al., 2017) and improve their competence in transforming different materials (Gregson et al., 2009). Keeping unwanted objects at home may lead to their reuse, but it may also lead to their degradation and loss of value if consumers forget about them (Gille, 2010). Keeping these objects means that consumers can avoid making decisions about disposal that might "haunt" them (Hetherington, 2004), but it usually hinders object utilization, stimulates demand for new objects, and negatively affects the environment (Gille, 2010). Throwing away is often a convenient disposal path, as it saves time (Joung & Park-Poaps, 2013) and quickly frees up household space (Gregson & Beale, 2004). Yet, with its far-reaching environmental consequences, throwing away is regarded as being in conflict with consumers' moral duty towards society (Birau & Faure, 2018; Gregson et al., 2013). Recycling allows consumers to reflect on the material remnants of their consumption as they sort through, prepare, and store objects (Gille, 2010).

Thus, each disposal route carries value connotations that can guide the disposal of ordinary objects, with outcomes that affect personal, social, and environmental wellbeing. Businesses anticipate this in their product innovations: for example, they recognize the values of convenience and hygiene in the disposal of menstruation products when they develop disposable pads, but they enhance the values of sustainability in disposal when designing reusable menstrual cups and cloth pads (Cherrier, Goswami, & Ray, 2018) and when extending the product life cycle through sustainable design (Goworek et al., 2018). Policy-makers try to enhance the value of waste avoidance by making consumers responsible for disposal and by developing waste-avoidance campaigns (Birau & Faure, 2018). Hence, understanding how values unfold during the disposal of seemingly insignificant objects provides insights that can be useful for creating innovative products and sustainable business models. It could also have implications for policy-makers who wish to encourage consumers to dispose of unwanted objects responsibly.

3. Value Dynamics in the Disposal of Ordinary Objects

The relationship between values and the disposal of ordinary objects plays out in the context of production and consumption, which makes some disposal paths more accessible and legitimate than others. The values in disposal are inherently dynamic, and they emerge relationally in a system of interactions between people and objects as participants embedded in a (social, political, and material) context. Section 3.1 clarifies these contextual forces, which influence the emergence of values in disposal. In section 3.2, Ingold's (2007, 2011) perspective on the physicality of ordinary objects is introduced in order to strengthen the study's theoretical lens.

3.1. Contextualizing Values in the Disposal of Ordinary Objects

The contextual factors at play in disposal include space, disposal discourses, social networks, and disposal infrastructures.

Space, in households, can promote or discourage disposal. A relationship has been found between the availability of physical space and the reuse of clothing (Cruz-Cárdenas et al., 2018). The literature also discusses transient or transitional spaces, such as attics and basements, where objects can be left before being permanently disposed of (Hetherington, 2004; Thompson, 1979), or hidden from sight until they are rediscovered or start spilling out of these spaces. Space, however, does not always directly explain why some objects might be put into circulation while others in the same category are kept or reused at home.

Disposal discourses are the normative structures that surround and shape disposal by attaching it to values. For instance, while health and hygiene discourses can normalize throwing away as a legitimate way of getting rid of smelly, dirty, or disorderly objects, discourses of thrift and sustainability usually condemn throwing away and favour reuse, circulation, or keeping (Hawkins, 2006). Disposal discourses include information and news, which is disseminated and promoted by policy-makers and regulatory bodies. For instance, to increase reuse, recycling and repurposing, Brisbane City Council addressed the impact of electrical waste and invested considerable resources in promoting the recycling of batteries, phones, and computers. In Turkey, various stakeholders (i.e., the government, local authorities, scientific institutions, and civil organizations) worked together in a nationwide recycling campaign to transform how Turkish people dispose of waste cooking oil.

Social networks can include friends, family, neighbours, and household help, who can facilitate the circulation of objects. Consumers pass their unwanted objects to people in their close circle in order to maintain or enhance their relationships (Cruz-Cárdenas & del Val Núñez, 2016; Türe, 2014). People who do not have a social network might refrain from disposing of their potentially reusable unwanted objects for fear of wasting them (Hetherington, 2004; Türe, 2014). The existence and make-up of a disposal network, however, is culturally specific. In Turkey,

caretakers of apartments, neighbours, or extended family members with limited resources are usually the convenient and popular recipients of unwanted objects. In comparison, Australian consumers have less access to personal networks; instead, they use formal infrastructures, such as charities and other institutions that receive donations, to circulate their objects.

The *disposal infrastructure* includes the specific conduits that are available for consumers to move their objects (Gregson et al., 2007) and relevant technologies (such as recycling technologies). Unwanted ordinary objects move through charity shops, recycling bins, rubbish bins, and other available waste-management services. For disposal to be smooth and easy, a consumer needs to have knowledge of and access to an appropriate disposal infrastructure.

While acknowledging the importance of values in disposal, the literature falls short of explaining how these values dynamically unfold as consumers and ordinary objects interact when embedded in these contextual factors. There is also a troubling absence of discussion on the material composition of objects and how this influences values in disposal. One exception is the work by Gregson et al. (2009) on maintenance and repair. They show how accumulated stains, marks, and indentations on objects cause anger and frustration, mobilizing care and attention and creating the need for restoration and maintenance. While their work hints at consumers' emotional responses to material deterioration, existing research does not directly account for the role of matter in the emergence of values in disposal.

3.2. Materials Matter

Research shows that materials play a fundamental role in object–consumer relations. Ferreira and Scaraboto's (2016) work on the success of Melissa shoes, for example, demonstrates that a plastic material, Melflex – whose properties enable it to melt in extreme heat, retain a bubble-gum scent, and be moulded easily – allowed marketers and designers to create an object with the

capacity to evoke emotions and express one's self. From this perspective, objects are comprised of heterogeneous materials whose properties that unfold or dissipate relationally allow for the emergence of value outcomes for personal and social wellbeing.

For Ingold (2007, p. 12) things are made of substances: "things are alive and active not because they are possessed of spirit – whether in or of matter – but because the substances which they comprise". These substances are the physical foundations for life, such as rock, sand, soil, wood, or concrete. They continually unfold in relation to other beings, and as the environment evolves, so do the materials as they flow, mix, and mutate. "The properties of materials, regarded as constituents of an environment, cannot be identified as fixed, essential attributes of things, but occur" (Ingold 2007, p. 14). Ordinary objects are thus embedded in a set of relations, including all the material that has been used to create them.

Accounting for an object's material properties as not fixed but emergent and relational (Ingold, 2007) is insightful when analysing values in disposal. First, consumers often contemplate disposal as a result of material *unbecoming*, such as when their objects break, deteriorate, or stop functioning. In addition, disposal propels unwanted objects as *materials-in-becoming* in relation to space, discourses, social networks, and infrastructure. Hence, disposal might reveal or obstruct the emergence of material properties, depending on the relations it establishes. Furthermore, Ingold's (2007) insistence on the importance of materials mixing and mutating highlights the role of matter in transforming the environmental and the social. This view regards unwanted objects as materials within value dynamics, and considers values in disposal as dynamically unfolding and transforming as consumers interact with material substances in a particular context.

4. The Study

To explore the value dynamics of disposal, more particularly how the materials interconnect and play out, interviews were conducted to interrogate interactions among consumers, objects, and the context of the disposal. Disposing of ordinary objects mobilizes socially transmitted routines and social norms that often guide actions (De Certeau, 1984) and requires consideration of the various disposal networks and infrastructures that influence the trajectory of ordinary objects (Lane, Horne, & Bicknell, 2009). Disposal also intersects with social and environmental aspirations and accommodates legislation, rules, and regulations (Hibbert et al., 2005). To capture the variety of these interactions, the data collection was performed in urban and peri-urban environments in Brisbane (Australia) and Ankara (Turkey). The data-collection sites were chosen strategically rather than randomly, in order to ensure access to distinct socio-material environments that exhibit different contextual factors – space, disposal discourses, social networks, and disposal infrastructure. The data collection also covered a variety of participants and objects.

4.1. Field Settings

In Turkey, there are 551 licensed recycling facilities (Turkish Statistical Institute, 2014), but there is still no official system for disposal and recycling. It is estimated that only 0.1% of waste is recycled (Altunok & Çakır, 2012). Turkish consumers have access to a limited number of recycling bins, mostly concentrated in school grounds or administration buildings. There are, for example, over 330 glass-collection bins in Çankaya (a large municipality in Ankara), but they are located separately from other bins and in less visible areas. Although the municipalities encourage consumers to separate their waste by distributing recycling bags, such interventions usually fail because consumers have neither the space to store waste until it is collected nor the means (e.g., a car or time) to take it to the recycling bins themselves.

This rather ineffective official waste-management structure is complemented by unofficial yet socially accepted and well-organized agents, who collect recyclables, such as paper, glass, plastic, metal and bulky items, from rubbish in homes or at the kerbside. Turkish households commonly use well-established personal (usually familial or kinship) or convenient (cleaners and building attendants) conduits for circulating clothes, accessories, baby items, electronics, furniture, and other objects that are in good condition. Not-for-profit organizations, such as LÖSEV (Foundation for Children with Leukemia) and ÇYDD (Association for Supporting Contemporary Life), and local charity associations also facilitate the circulation of second-hand objects. In Ankara, consumers have access to free crafts courses on sewing, knitting, glass and fabric painting, jewellery design, and even some repair work, which benefits the transformation and maintenance of objects. There are no garage sales in Turkey, and while electronics and cars are commonly resold through second-hand shops and websites (e.g., gittigidiyor.com, sahibinden.com, and ikincielim.com), reselling clothes and accessories is still considered to be unacceptable by Turkish consumers.

Australia, on the other hand, provides well-established waste-prevention and efficient circulation systems for various waste streams. Queensland's waste-management policy, in particular, is committed to the "waste hierarchy" as a guiding principle; reduction comes first, followed by reuse, recycling, recovery, and treatment, with disposal as the last resort. Brisbane benefits from a well-developed recycling infrastructure, with four transfer stations (rubbish tips) and two Tip Shops within the Brisbane city limits. Consumers usually own large cars and can easily take large unwanted items to transfer stations, which are open from 9am until 5pm on weekdays. The fees for waste and recycling disposal at Brisbane City Council's transfer stations are established by the council, and in 2018 they were around $10 per car carrying general or uncontaminated green waste. The city council also offers a once-a-year free kerbside collection

across all suburbs to assist consumers to dispose of bulky items. Government-accredited organizations, such as MobileMuster and Planet Ark, offer numerous e-waste collections points throughout Brisbane. Queenslanders are aware of and knowledgeable about separating recyclables and in 2004/2005 they recycled 14.6% of their total household waste (Queensland EPA, 2006).

Charities in Brisbane include two Oxfam shops and three Salvation Army shops, which will pick up unwanted objects free of charge. Brisbane also offers numerous small second-hand shops. The use of second-hand markets and garage sales is common (Lane et al., 2009). Brisbane also provides arts and crafts markets, where upcycled items, such as handbags made with vinyl or necklaces made from old computer keyboards, are for sale.

4.2. Data Collection

A total of 29 participants (14 in Australia and 15 in Turkey), varied in age, gender, occupation, housing, and family composition, were interviewed. In Australia, the selection process started by placing an advert in the local newspaper to ask individuals to voluntarily participate in a study on disposal. A snowballing technique was used to broaden the sample. In Turkey, personal networks were used to recruit the initial participants, who then helped the authors to find new others. Most of the Turkish participants lived in apartment buildings, while the Australian ones predominantly lived in houses. The semi-structured interviews lasted for approximately 85 minutes on average. All the participants were given a pseudonym and assured of anonymity.

The interviews were conducted in the local language (English in Australia, Turkish in Turkey). The authors' multi-cultural backgrounds, and the repeated discussions between them, provided them with an extensive knowledge of both sites. The same interview guide was used in both countries. All the interview data was recorded and transcribed. The questions focused on a

variety of ordinary objects, such as household appliances, electronics, furniture, and clothes. This focus enabled the authors to distance from disposal research that unpacks the transfer of meaningful objects and identity work so that it would be possible to shed light on objects' material signification for disposal.

For each disposal mentioned, the participants were probed for the perceived material aspects of the object (e.g., size, weight, form, material composition), its history in the household (e.g., functionality, placement, length of time in the household, links to other objects), and the process of its disposal. The participants were encouraged to discuss recurrent and effortless disposal episodes, in addition to problematic ones that might disrupt the emergence of values related to disposal. The semi-structured interviews also enquired about other factors that influence the destinations of objects during disposal – such as household space, social relations, infrastructure, technologies, norms and conventions, marketing campaigns and public policy interventions, and discourses and knowledge. Collecting data in both Turkey and Australia helped to map out cultural boundaries that affect values in disposal.

4.3. Data Analysis

The data was analysed using open and focused coding techniques, consistent with grounded theory development (Charmaz, 2006). The multi-sited research approach involved "studying each site both intratextually (i.e., from within) and intertextually (i.e., across sites)" (Minowa, Visconti, and Maclaran 2012, p. 485) and through an iterative process, where the two authors first analysed the data from their country of residence, and then compared and contrasted their interpretations. This approach helped to gradually combine the numerous themes that emerged during the independent analyses into mutually constructed themes with contested meanings. In each data set, the authors first read and analysed each transcript, and then compared each one with the other texts in the same

data set. This analysis brought about the initial themes to be debated, challenged, and contested during discussions between the authors. Skype, phone, and face-to-face discussions allowed the authors to identify similarities and differences across the sites and to move from initial coding to focused codes in order to build an account of value dynamics that was not specific to the sites investigated. The intertextual iterations of the data analyses continued until a cohesive story of values in disposal emerged. As the analysis focused on the relationship between consumers, objects, and the context in which they interact to understand value dynamics in disposal, further data was collected to complement this understanding. This included reports, journals, and websites from policy-makers, marketing intermediaries, and the mainstream media on waste-management practices and infrastructure, second-hand outlets, and norms around wasting, giving, donating, selling, and repurposing. The analysis highlighted the material aspects of unwanted objects and identified the (consumer- or context-related) factors that hindered or facilitated the actualization of values in ordinary object disposal.

5. Findings

Four predominant value domains were identified in the data: maintaining hygiene, health, and order; preserving the natural environment; reducing social inequality; and saving for tomorrow. These value domains dynamically emerged during disposal through the interaction between consumers, objects, and the context. Ordinary objects in the process of disposal were revealed to be amalgams of materials with emergent properties, interlocking mechanisms, and functional interdependencies. These objects further interacted with consumers, who mobilized (or did not) a variety of relevant skills, knowledge, and practices when disposing of their objects, thus unlocking (or not) values in disposal.

5.1. The Material of Ordinary Objects

The participants' narratives across the research sites revealed three prominent material properties emerging for ordinary objects during disposal: durability, plasticity, and moveability. The emergence of the object's material configurations and interdependencies guided the disposal.

5.1.1. Properties of Materials

In the data, an unwanted object's material durability (resilience, strength, and resistance to deterioration), plasticity (malleability, changeability, pliability, and flexibility) and moveability (physical contours, layout, size, and weight) played a key role in its disposal. These properties emerged or receded in interaction with consumers and the circumstances surrounding the disposal.

One emergent property is *durability*. Research notes that transitional goods, once perceived as redundant or obsolete, transit to waste (Thompson, 1979) or circulation (Gregson et al., 2007) as a whole object. However, the data analysis revealed a more complex story: durable properties of an object's material components emerge through interactions with consumers' skills and practices. Consider Mualla's sweater:

> *Sometimes, its [a sweater's] shape is deformed or its model becomes unfashionable. If the yarn is not spoilt, I just de-knit it. Get the yarn, cut off the bad parts and use it to knit something else. So, it becomes like new. […] It might be that the sweater has a deformity. Or maybe I feel that its model is old. I might think about revaluating it. I use the yarn if I can, or give it to my mother. She turns it into a blanket. By knitting it in squares, she turns it into a blanket. Or I re-knit it into a new sweater. Or into a doormat. […] I ask my mother for ideas or seek advice from the teacher in my handicraft course. (Mualla, F, 45, Turkey)*

Mualla does not consider the sweater as something solid with fixed properties of durability. Rather, it is a corpus of different materials, whose durability is highlighted given her skills in sewing and knitting, her mother's aptitudes and ideas, and her household projects, shifting the sweater (or parts of it) towards repurposing.

The property of *plasticity* invites possibilities for moulding, shaping, transforming, or attaching materials to new materials, similar to Mualla's sweater being transformed into a blanket. Mualla described how her friend transformed her non-absorbent bathrobe into a toilet seat cover. Because its materials failed to absorb water in a way that would be expected of a towel, the bathrobe was detached from its intended use in the household, creating the opportunity for Mualla's friend to repurpose it as an object she needed, for which non-absorbency was acceptable:

> *The bathrobe was not absorbent, did not absorb the water, you know. So yeah, it was never used. She brought it to our sewing class and consulted with our instructor to find ways to use it. They cut it, put ribbons on it, and it became a toilet seat cover. The bathrobe was not wasted... (Mualla, F, 45, Turkey)*

The fact that the bathrobe's materials did not provide absorbency highlighted their emerging properties of plasticity. These properties emerged in relation to the normative milieu and through interactions with consumer skills acquired during sewing classes, the other objects in the network (the toilet, the scissors, the ribbons), and other people, including the sewing teacher and friends.

The third property, *moveability,* is influenced by the form, size, and weight of an object's material components. The properties of moveability for lightweight objects, such as kitchen utensils or clothes, often emerge in routine disposal. In contrast, heavy and large materials and

objects, such as appliances and furniture, are mostly perceived as less mobile and their properties of moveability may (or may not) emerge during disposal. Arthur, a 27-year-old male participant from Australia, talked about an air-conditioner that he had "bought around two years back. It's not working and it is just too heavy to move, so it stays in my garage". Despite the change in the object's functionality, the interaction between the spacious garage and Arthur's lack of skill to disassemble the air-conditioner prevents the properties of moveability from emerging and renders the air-conditioner immoveable, so it cannot be disposed of. Many of the Turkish participants, however, lived in apartment buildings and could not keep such immoveable objects. These consumers used their social networks or informal disposal agents to remove unwanted objects from their households.

5.1.2. Configurations of Materials

The analysis reveals two aspects of the configuration of objects' materials having an impact on values in disposal: the strength of the object's interlocking mechanisms (rigid versus flexible), and the object's functional interdependencies (rigid versus flexible).

The term *interlocking mechanisms* refers to the coupling of the diverse elements that form an object. Burcu's boots, for instance, consisted of toes, buckles, and leather, which she could not decouple:

> *I had this pair of boots with pointed toes. But the toes started going up, honestly, that toe style became unfashionable, ugly…. I liked the buckle on the side and the leather was still good. I said, "I am going to wear them today for the last time". I wore them and gave them to someone. (Burcu, F, 35, Turkey)*

Some of the material elements of Burcu's boots had deteriorated in diverse ways: the toes started pointing up, but the leather was preserved, and the buckle remained appealing and trendy. The rigidly interlocked elements of the boots would not decouple easily for Burcu and problematized the value dynamics in their disposal.

Conversely, *flexible interlocking mechanisms* make it possible to decouple the elements that make up an object. The participants could dispose of unwanted objects easily when they were able to decouple their elements, discarding some and giving away or keeping others that they deemed to be reusable or valuable. Sofas and chairs often consisted of elements with different characteristics, histories, and materials, and, hence, disposability. The wooden frames were "original and durable" (Suna, F, 41, Turkey), and the possibility emerged of decoupling the frames from the furniture and reusing them in relation to consumer, space, and other objects. The upholstery (fabric) degraded easily and was constantly on the move, ripped from sofas and replaced with new fabric. Similarly, Lelise (F, 29, Australia) said that she disposed of parts of her mobile phones, keeping the phone chargers and contemplating "how you could use something that you may throw out… like a bit of a second, alternate, different use".

In addition to the ways in which the material elements are held together, the participants discussed the *functional interdependency* of the object's elements. Laptops were often mentioned in relation to a charger, a docking station, or a computer case. Although easily de-coupled, these components were functionally interdependent and their disposal routes were similar. Similarly, one Australian participant mentioned discarding the casing of a ballpoint pen whose cartridge was no longer produced, and others described disposing of running shoes along with the (still functional) laces. Technological advances and the obsolescence of certain elements tended to stimulate the effect of functional interdependency on disposal, while the normative milieu helped participants to negotiate the interdependence of an object's elements. For example, both

Australian and Turkish women mixed and matched bikini pieces, and some reused their bikini tops or bottoms while discarding the matching piece that had been damaged.

5.2. Consumers

5.2.1. Skills

Consumer skills are crucial for repurposing unwanted objects as new items with similar or different functionalities. Skills in sewing, knitting, or crafts came up in many of the Turkish participants' narratives about disposing of items of clothing, glass containers, and plastic packaging. Parts of unused objects (such as buttons from an old shirt, screws, and parts of fabrics) with emergent moveability, plasticity or durability, and flexible interlocking mechanisms were kept for reuse in small and convenient spaces, such as a box or a drawer. However, the ability to reuse these objects emerged only if they interacted with other objects (e.g., a dress without a button) and consumers with adequate skills. Otherwise, such objects were kept with the hope of reusing them, as Natalie (F, 28, Australia) explains: "in the basement, I have full bags where I keep things; I mainly keep what's made of iron or scrap iron, I think it can be used for something".

5.2.2. Practices

Consumer practices, in conjunction with skills, other objects, and space, have an evident influence on values in disposal. Consider Lelise's jars and plastic containers, which she repurposes for her plants:

> *These jars were once used for jam and pasta sauces and then I filled them with dirt and planted these [herbs]. Yes, plastic containers. I will keep them and reuse them when I can.*

Sometimes I do throw them out if I'm in a situation where you kind of have to or it's hard to keep them but yes… I would keep them. (Lelise, F, 29, Australia)

Lelise's practice of gardening and her knowledge of which containers can best connect with the soil and flowers lead some jars to be repurposed as flower pots and others to be disposed of. Objects that interfere with important household practices and values of order can end up in the bin. For Simge (F, 29, Turkey), the visibility of recyclable materials kept "under the sink" for a week interfered with her daily cooking practices and created disorder. Despite having the space, Simge rejected keeping "rubbish" at home and did without recycling so as to maintain order at home.

5.2.3. Knowledge

Consumers' knowledge, accumulated through experiences and observations, often shaped their disposal practices. The Turkish participants without direct access to recycling bins were apprehensive about sorting their rubbish. Most of them, such as Cansu (F, 33, Turkey) believed that there was no specific avenue for recycling and the bin lorries would mix recyclables and non-recyclable objects. Similarly, Janine (F, 23, Australia) knew the limitations and capacities of the recycling infrastructure: "Is it really getting recycled? Like, electronic waste… that has to go in certain places." Thus, committed to preserving the environment, Janine repurposed her old clothes to make new pyjamas and her empty plastic containers as iPad protectors. Even when the material affords consumers to actualize a value domain through multiple disposal paths, consumers' knowledge and beliefs predominantly guided the final disposal.

6. Discussion and Implications

This study has elucidated values in disposal as dynamically unfolding from interactions between consumers (skills, practices, and knowledge) and objects (properties, interlocking mechanisms, and functional interdependencies) embedded in a disposal context (social networks, discourses, spaces, and infrastructure). The disposal context is not simply a background, but actively contributes to the interactions between consumers and objects, and, hence, to the emergence of values in disposal (as illustrated in Figure 1).

<Insert Figure 1>

6.1. Implications for Disposal Research

Research suggests that disposal conduits should be viewed as doors through which consumers distribute value (Hetherington 2004) and argues that the disposal of ordinary objects unfolds four prominent value domains: maintaining hygiene, health and order; preserving the natural environment; reducing social inequality; and saving for tomorrow (Cherrier et al., 2018). This study expands these arguments by pointing to specific value domains as means of value distribution and by revealing the circumstances manifested in disposal through these four corresponding value domains.

Discourses on hygiene, health, and order underlie the disposal routes of most ordinary objects. Routine and thorough cleaning episodes, overflowing drawers or wardrobes, and broken or deteriorated objects threaten the order and health of the household. The value of protecting loved ones guides the classification of objects as dangerous, unhealthy, or dirty, as "matter out of place" (Douglas, 1984), and these objects are usually disposed of via rubbish or recycling bins to maintain safety and order (Joung & Park-Poaps, 2013). Thus, throwing away might lead to but the *loss* of value by potentially destroying an object's utility and reusability (Birau & Faure,

2018; Gille, 2010) and to the *emergence* of value by helping consumers maintain their household order and protect their loved ones.

The value of preserving the natural environment prevails for objects that are considered reusable or unsustainable, such as plastic bottles and items of clothing. Although this value domain might seem to relate mostly to recycling, it also unfolds as consumers circulate their objects. To decrease the environmental impact, knowledge of and access to an appropriate infrastructure for circulation are as important as knowledge of and access to the infrastructure for recycling. Consumers' routine practices of sorting, stacking, and storing their unwanted items are driven by not only reflecting on recycling guidelines (Hawkins, 2006; Zou & Chan, 2019) but also considering circulating and reusing objects.

Closely related to circulation pathways are the values relating to perceived social inequality. Unwanted ordinary objects, with their visible, material, and overbearing presence, invoke consumerist tendencies and wastefulness, and consumers often feel compelled to pass these objects to others in need. Although passing objects to people in their close circle helps consumers to maintain or enhance their relationships (Cruz-Cárdenas & del Val Núñez, 2016; Cruz-Cárdenas et al., 2018; Türe, 2014), this study also highlights the broader value of contributing to social justice and wellbeing as an underlying motivation for circulating objects. However, in the absence of a circulation network, the value of reducing social inequality will not mobilize objects but lead them to be kept.

The final value domain relates to consumers' reflections on the future reusability of their objects and highlights the importance of spatial constraints for disposal methods. Different from environmental preservation values, which focus on the disposed object's impact on the environment, the quest of saving for the future underlies the material potential of an object that

has lost its current functionality to be reintegrated into the household. This concern prominently guides consumers to keep ordinary objects (or some parts of them) for repurposing and reuse.

6.2. Implications for Policy-Makers

In societies facing an ecological crisis, excess production, overconsumption, and an overflow of waste, household disposal of unwanted objects has become a key feature of public policy initiatives and organizations aiming to reduce the volume of waste.

One approach to waste prevention has been to enforce a waste hierarchy that ranks the most appropriate responses to unwanted objects: prevent (reduce waste at the source), reuse (repair or repurpose objects, or circulate them to people who need or want them), recycle (so that waste becomes a resource for industry), and discard (send the waste to landfill) (Van Ewijk & Stegemann, 2016). Actors involved in implementing the waste hierarchy communicate positive values relating to waste prevention through legislation, political campaigns, and organizations that raise awareness of the environmental consequences of waste and develop education programmes (including codes, labels, and certifications) to improve knowledge of how and what to recycle, keep or circulate (Gregson et al., 2013; Thøgersen, Haugaard, & Olesen, 2010). Although policy-makers focus more on the context and consumers in order to establish or destroy values in disposal, this study highlights that value domains can unfold during disposal as objects and their material composition comes to the fore. Specifically, as ordinary objects emerge as amalgams of materials with properties, interlocking mechanisms, and functional interdependencies during their disposal, they highlight specific values for consumers by implicating different environmental, social, and economic consequences. The challenge for policy-makers and organizations wishing to reduce waste is to interrogate how such material interplays enhance or hinder values in disposal.

This study has also demonstrated that there are multiple values at play in disposal, and that the range of values is broader than commonly accounted for in public policy initiatives and sustainability discourses. Attending to values in disposal is at the very core of recycling companies, waste-management companies, and second-hand intermediaries (Hibbert et al., 2005). Yet, the policy focus has been directed at developing interventions that communicate values, rather than allowing values to unfold and emerge through interactions. Thus, policy-makers need to develop interventions that facilitate the unfolding of values. The development of public sites where repairs are done (e.g., repair cafés) is a good example. Repair cafés, as a part of a global network, bring together neighbours, skills, the passion for repair, knowledge, experience, public space, and objects. Such interventions are successful not just because they provide a free service and illuminate repair skills, but because they repeatedly engage people and objects in productive activities, and, by way of repeated interactions, can enhance or unfold unforeseen values in disposal.

Smart materials – materials that change in response to external conditions (Kretzer, Minuto, & Nijholt, 2013) – can also facilitate the emergence of values in disposal. Although smart objects that encourage the ongoing use of products in homes already exist (Hoffman & Novak, 2018), more should be done at the point of disposal. Waste-management systems may incorporate smart domestic bins that inform consumers of the destination of their objects after disposing of them in the bin, whether they will become a resource for industry or pile up in "electronic graveyards" in West Africa or China (Nnorom & Osibanjo, 2008). When consumers are uncertain about the values in disposal, as our participants occasionally were, smart bins equipped with radio frequency identification (RFID) tags could help. Smart bins could identify processes of sorting materials (Hannan, Arebey, Begum, & Basri, 2011), detect local networks of

individuals or charitable organizations in need of these objects, or give advice on possible reuse at home.

6.3. Implications for Businesses

In response to concerns about sustainability and waste prevention, businesses have developed strategies to extend the life cycle of their products. They can develop more durable household products that are fully recyclable at the end of their useful life (McDonough & Braungart, 2002). Doing this requires identifying the material elements that can biodegrade safely and those that cannot biodegrade but can be reclaimed, completely recycled, and reused in a closed cradle-to-cradle loop (McDonough and Braungart, 2002). Thus, if the durability of the whole is linked to the durability of its material elements (Mora, 2007), sustainability requires accounting for not only the parts but also the interaction between the parts and the whole. Expanding on such a view, this study has found that the emergent properties of an unwanted ordinary object's material elements and their specific material composition are crucial in shaping its remaining life. For example, given that a rigid interlocking mechanism can obstruct values that are attached to repurposing or circulation, businesses can design and promote processes for disassembling to facilitate (re)valuation. One example of this is the Liam Project designed by Apple for disassembling the iPhone 6 and recovering its materials (Rujanavech, Lessard, Chandler, Shannon, Dahmus, & Guzzo, 2016).

7. Conclusion

This study has attested that unwanted objects can be encoded with new values during disposal (Brosius et al., 2013; Cruz-Cárdenas & del Val Núñez, 2016; Cruz-Cárdenas et al., 2018). An unwanted object that has no value in one household may reveal value through an interaction with a friend who needs it, and may subsequently revert to being of no value if the friend does not

accept the item. That is, value in disposal becomes an interplay among people and objects as participants that are embedded in a particular context. Future research could focus on other domains of disposal in order to explore the perspective that unwanted objects are not necessarily devoid of value in the broader contexts of production and consumption.

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Figure

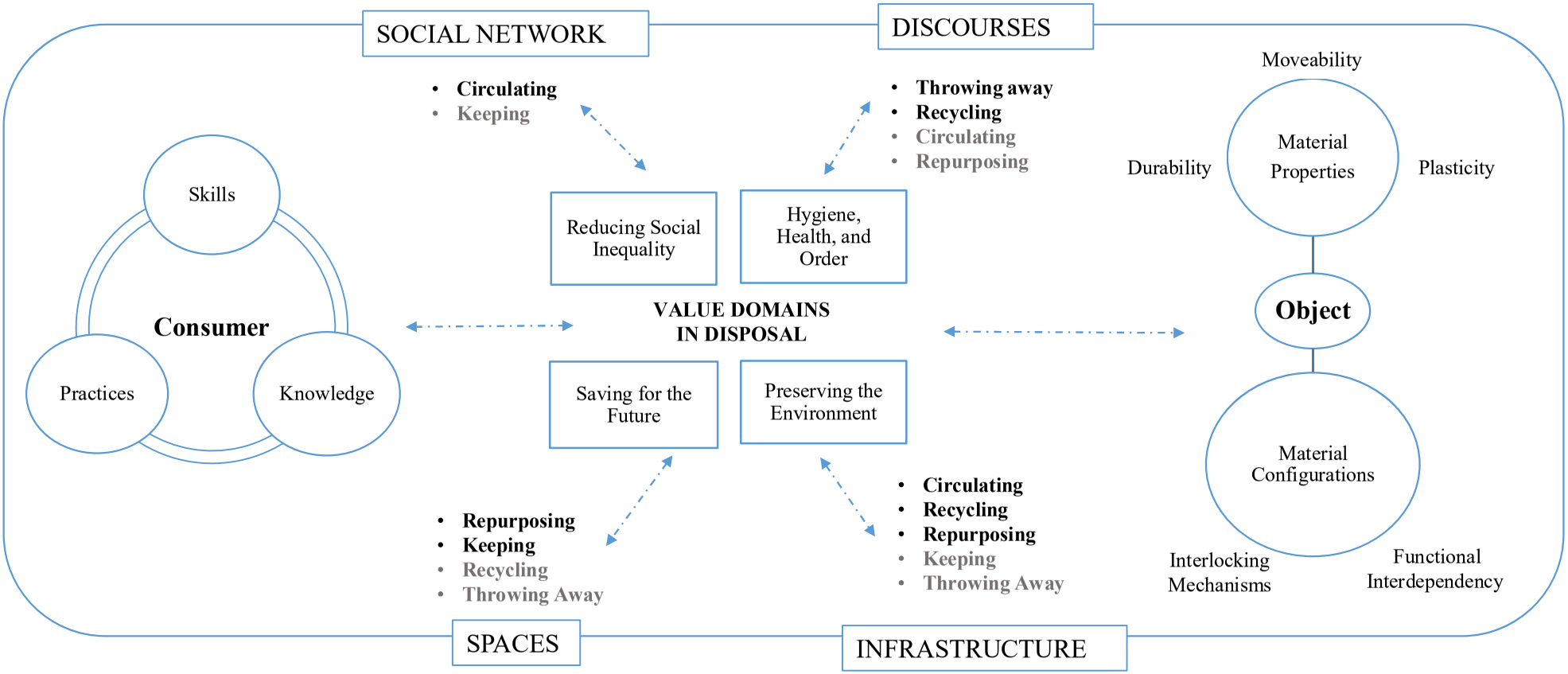

Figure 1: Consumer Values and the Disposal of Ordinary Objects

Note: The disposal paths strongly related to a value domain are presented in black and bold while gray color represents a weaker relation between a pathway and a value domain.