Published as _*Article* in *On_Culture: The Open Journal for the Study of Culture*
(ISSN 2366-4142)

THE DOMESTIC REUSE AND REPURPOSING OF PACKAGING: THE MATERIALITY OF SUSTAINABLE PRACTICE

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KEYWORDS

waste, packaging, reuse, repurpose, sustainable consumption, material culture

PUBLICATION DATE

Issue 17, October 31, 2024

HOW TO CITE

Tenno Teidearu. "The Domestic Reuse and Repurposing of Packaging: The Materiality of Sustainable Practices." *On_Culture: The Open Journal for the Study of Culture* 17 (2024). <https://doi.org/10.22029/oc.2024.1445>.

DOI: <https://doi.org/10.22029/oc.2024.1445>

On_Culture: The Open Journal for the Study of Culture
Issue 17 (2024): Trash
www.on-culture.org
https://doi.org/10.22029/oc.2024.1445

The Domestic Reuse and Repurposing of Packaging: The Materiality of Sustainable Practices

_Abstract

This _*Article* concentrates on the domestic reuse and repurposing of packaging as a form of material life in Estonian households, and on the material and historical background of reuse and repurposing. The Estonian case reflects the country's Soviet past, when reuse, repurpose and DIY mentality were an essential part of consumer culture. Reuse and repurposing are creative forms of human engagement with the materiality of packaging, that contribute to the process of becoming new things. Reuse follows the shape and useful functionalities of packaging, and repurposing, which alters the original shape through material transformations, follows the useful potential of the material and its physical properties. People have often thought of packaging not as object, but as potentially useful material, something that is evident in some traditional and vernacular reuse and repurposing methods in which materials and their physical properties have cultural value. From the New Materialist perspective, packaging is mutable material that supports some culturally persistent reuse and repurposing traditions.

1_Introduction

The climate crisis, along with waste as a global ecological problem, have encouraged policymakers at various levels to establish regulations, initiatives, and agreements. For example, the European Parliament aims to adapt and promote a circular economy,[1] which, in contrast to the linear economy model, aims to minimize the use of new raw materials and the production of waste in industrial production through reuse, repurposing and recycling of existing materials, including commodities and packaging.[2] However, this strategy and action plan target agents mainly on the industrial and institutional levels, as well as recycling of source materials; but industrial recycling is not the 'ultimate' green solution, and a longer life of commodities through repair or reuse is ecologically more sustainable.[3] Domestic sustainable practices, such as reuse and repurposing, through which consumers can provide commodities or packaging with a new life and novel functions are less emphasized in these policies. The Estonian Government strategy also reflects this dynamic, although government websites and documents do mention reuse, if only briefly.[4] The circular economy model as a perspective on waste management tends to treat the consumer as a passive agent, assuming their agency ends at waste sorting.[5] This view is problematic as it neither recognizes nor supports sustainable domestic practices.[6] Yet, as ethnographic studies indicate, domestic reuse and repurposing are

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still viable practices in households in the Western world, and, moreover, in the global south.[7] Many anthropologists perceive them as having the ecological potential to promote more sustainable consumption habits or promote the development of products designed for reuse and repurposing.[8]

This *_Article* analyses DIY (do it yourself) reuse, repurposing and upcycling of packaging waste in Estonia. There is a need for a geographically and culturally diverse investigation and theorizing of trash, as it has different social and symbolic meanings dependent on variations in local developments and cultural traditions.[9] Because of its membership of the group of Eastern European post-Soviet states, contemporary Estonian domestic waste management practices are influenced by its Soviet past. During the Soviet occupation of Estonia from 1944 to 1991, following World War Two, the Soviet waste management system and consumer culture, which were different from those in Western Europe, was part of Soviet Estonia too. Ekaterina Gerasimova and Sof'ia Chuikina propose that domestic reuse and repurposing of commodities and materials, and the DIY mentality and associated skills were common parts of consumer culture in the Soviet Union.[10] However, after the Estonian restoration of independence in 1991, implementing European waste sorting and recycling system was slow, and some of the habits common in Soviet Estonia persisted, as Francisco Martínez and Kaia Beilmann indicate.[11] This continuity of old and traditional consumption practices applies to packaging too. Instead of disposability of packaging as a modern invention that emerged in the early twentieth century in Western Europe and the US, packaging was often reused, repurposed or recycled in households in the Soviet Union, including Soviet Estonia.[12] Some methods have persisted, especially among the generation that lived most of its adult life in Soviet Estonia.

This study focuses on material aspects of domestic reuse and repurposing practices, and their relationship with cultural traditions and persistent consumption habits. In this *_Article*, reuse is defined as the practice of using discarded or obsolete products or their components for the original purpose and functionality, with few or no material modifications.[13] Repurposing is, similarly, understood as the practice of reusing discarded or obsolete products or their components, but for an alternative purpose, with the object or its components possibly undergoing extensive material alteration.[14] The shape and aesthetics of packaging and the material they are made of

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afford their original functionality as an object, with product design having an intended outcome. However, for domestic use, Janet Shipton and Tom Fisher indicate that "packaging items are very often reused for functions that are different from those intended by their designers," and have analyzed both symbolic values and material aspects of reuse and repurposing in UK households.[15] Tomás Errázuriz and Ricardo Greene have documented and studied many domestic repurposing methods for newspaper in Chile, and propose that in order to understand the mutability of newspaper as a material object, it should be understood as paper, a material that has a specific physical shape and material properties.[16] Similarly, domestic repurposing of packaging can be seen as its material transformation. This research aims to show how material aspects of packaging affect their reusability and repurposability, and the continuity of these practices. Here, the shape of packaging, material and its material properties are considered units of analysis. Various methods of reuse, repurposing and repair were essential parts of Soviet consumer culture.[17] I will discuss further persistent traditions of reusing glass jars and bottles for canning, and making rugs out of plastic milk bags, as key examples. I propose that these methods of reusing and repurposing packaging, as practiced in Estonian homes, are afforded by its shape, material and physical properties, and that these practices are also supported by tradition and the influence of the consumer culture of the Soviet past.

Patently, packaging is part of material culture and the material reality of waste. My focus on the materiality of packaging and its meaning-making qualities in the practices of reuse and repurposing is inspired by the study of material culture, practice theory, and New Materialism. The meaning and significance of material culture emerges out of the human relationship with objects, and materiality in general. This relationship is dialectical, as Christopher Tilley et al. put it, "persons make and use things and [that] the things make persons."[18] Things are not passive, they too have agency in affecting human identities and practices.[19] According to Pierre Bourdieu's classical approach to practice theory, practices are embedded in the material and social environment and learned in this context.[20] Reuse and repurposing are specific material practices built upon engagement with things and their materiality. Elizabeth Shove, Mika Pantzar and Matt Watson propose a practice theory model that consists of three interrelated categories: materials (i.e., materiality), competences (i.e., skills and knowledge) and meanings (i.e., social and symbolic significance).[21] 'Materials,'

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in this model, encompass objects, tools, hardware, infrastructure and the body. Shove, Pantzar and Watson's model considers how the materiality of things affect competences and meanings in material practices. However, it is crucial to rethink what things or materialities are, and what packaging is, if they are treated as analytical units. Tim Ingold argues that in anthropological and sociological discussions on material culture and materiality, things are commonly perceived as inert and ready-made solid objects, while the materials they are made of and their material properties are often neglected.[22]

Alternatively, New Materialism seeks to understand things as matter that itself is agentive beyond human agency and anthropocentric meaning-making. For example, Jane Bennett explains 'vitality' as the capacity of things and matter to affect human will, and to act as quasi agents or forces with their own trajectories or tendencies.[23] Trash, as Bennett writes, can never truly be thrown away, as it continues its activity as vital matter through its chemical life even if discarded by man.[24] However, methodologically, I find Ingold's anthropological approach to human interaction with materiality and to the agency of matter more ethnographic and better suited to my research aims and empirical data. Ingold proposes that we should take raw materials as substances and their properties seriously because materials are always in transformation and alteration, and that flux gives materials and things their material activity or liveliness.[25] Similarly to Bennett's 'vital materialism,' Ingold perceives the liveliness of materiality intrinsic to matter and its material life. Thus, reuse and repurposing can be seen as interaction with the materiality of packaging and its material forces. As a practice, reuse and repurposing involves intimate engagement with making or remaking objects. Making, as Ingold discusses, is an engagement with (raw) materials that follows material properties and forces in the process of the becoming or 'growing' of things.[26] Materials are significant not because of what they are, but what they afford or can do. James J. Gibson proposes in his theory of affordances that material properties and characteristics of objects, or their surfaces and substances, afford specific uses for particular subjects; this implies that one object can have various affordances for different subjects.[27] Packaging too, as an object or material, can afford alternative uses to its initial function. My empirical data shows how people investigate and detect properties of the material and follow them in repurposing the packaging. For example, plastic milk bags have useful and unique

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properties that make them good material for making bathroom or outdoor rugs. These cases show that people take seriously the material of packaging, similarly to what Ingold and Gibson suggest.[28] As I demonstrate using survey data, packaging in domestic reuse and repurposing practices are often perceived as useful materials or as material forms of specific shape allowing its functional transformation. This perspective aims to demonstrate that materials too have, or acquire, cultural significance and maintain or affect traditions of culturally persistent sustainable practices.

This *_Article* is based on a collection of reuse and repurposing stories collected by scholars and museum specialists at the Estonian National Museum in 2022 and 2023. In 2022, the questionnaire topic was *Things, Reuse and Rubbish* (compiled by the author and Kristjan Raba), and in 2023, *Repair and Reuse* (compiled by the author).[29] This empirical material consists of responses to the museum's questionnaires from 160 Estonian correspondents. The museum received about 600 pages of memories and experience narratives and nearly 800 digital photos by e-mail or mail. All this material is stored in the museum`s collection. The majority of the respondents were female, between 50 and 91 years old, which is usual for the respondents to the museum's annual questionnaires on various topics. However, these particular questionnaires attracted more contributions from persons in their twenties and thirties. The youngest respondents were school children. Male respondents were mainly in their seventies or older. This study only focuses on responses from adults. In referring to the respondents in the *_Article*, only their first names and years of birth are provided. As a general guideline for writing, the questionnaires included 19 key questions divided into topical sections. Regarding trash, the questionnaires included the questions: "Is everything that your household throws away trash?" and "Do you sort household waste?" Regarding reusing and repurposing, respondents were asked to write about their own, their parents' or grandparents' habits, for example: "Have your parents or grandparents reused things, given them new functions, or converted them at home?" Most of the contributors did not follow the questions strictly, and often concentrated on the topics and questions that they could relate to personally. Significantly, questions about packaging and its management were not included, although this was the dominant topic the respondents reflected upon regarding household waste. Some examples of responses are presented in this *_Article*. The data

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was analyzed using the grounded theory method and coding, revealing clear links between different categories and topics in the analysis.[30] For example, the connection between on the one hand narratives about the reuse and repurposing practices of different shapes and materials of packaging, and the Soviet past on the other, emerged in the personal stories. The outcome of this analysis treats the shape of packaging, its material and properties as an analytical unit. The personal narratives and the results of the analysis are discussed in this *_Article* within the broader cultural context of the history and materiality of trash and packaging.

2_The Culture and Materiality of Trash

Gay Hawkins and Stephen Muecke discuss how measuring the economic and moral value of waste and recycling in different sciences is often based on either cost benefit or ethical value.[31] Trash as a cultural category is inherently linked to the cleanliness and dirtiness or purity and pollution duality, bearing in mind how Mary Douglas famously defined dirt as "matter out of place."[32] In this structuralist approach, the category of dirt is dependent on ordered relations in a specific cultural system, and waste is an outcome of classification and relations. Trash as a category is also linked to the question of value and alterations in value. Michael Thompson proposes that trash itself has no value, rather, it is a temporary category or state of objects between two main categories of value: 'transient,' decreasing in value over time and having a finite lifespan, and 'durable,' increasing of value and having a long or effectively infinite lifespan.[33] The cultural economy of waste or trash, Hawkins and Muecke propose, addresses different aspects of value: historical, symbolic, linguistic and affective.[34]

The history of waste management as part of the cultural economy reflects cultural, political and economic meanings and changes. In nineteenth-century European cities, increasing amount of trash was perceived as a necessary source for soaring industrial production.[35] Recycling was based on a flow of materials between households and manufacturers that followed existent and common cultures of domestic reuse of goods and materials.[36] In the early twentieth century, due to a lack of this direct circularity of waste and increasing amounts of new types of trash, landfills were perceived as the most cost-effective solution.[37] The economic rupture of World War Two and the subsequent recovery increased consumption and production of trash that

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led to the 1960s waste crisis, giving rise in turn to legislation on waste and in particular, packaging.[38] In the West, the contemporary domestic sorting of trash as a recycling practice was (re)introduced to citizens through campaigns that began in the late 1960s. These campaigns, crucially, addressed individual environmental responsibility and ethics.[39]

After the war, scarcity of commodities and everyday goods was harsh in the Soviet Union too, including in Soviet Estonia. However, the economic situation did not change or improve that much, compared to Western Europe. Several factors contributed to the deficit of consumer goods, mainly insufficient and low-quality commodities and state regulation of consumption. This perpetuated the need to reuse, repurpose and repair goods, giving rise to a DIY mentality that was an inherent part of Soviet consumer culture.[40] On a municipal level, wastepaper, rags, metal and glass were collected in return for money or coupons for certain deficit goods, which provided strong motivation. Wastepaper was also collected in schools, an activity that was carried out as social work.[41] However, trash sorting and collecting was not associated with ecological considerations, as it was in Western Europe. Instead, rationalities for individual waste management practices resembled the reuse and recycling culture of the nineteenth century.[42] Many traditional consumption practices, characteristic of the nineteenth century and of rural areas, persisted as part of Soviet consumer culture and society.[43]

Sorting or recycling trash are practices that demand the classification of waste into different types.[44] Managing rubbish on the household and individual levels consists of material practices that establish embodied relationships and engagements with this materiality. The ethics of waste, as Hawkins proposes, is open to sensuous experiences and affects that are part of the cultural evaluation of waste.[45] In my empirical data, respondents describe trash according to three main ethical characteristics: sensuous indicators, disorder and uselessness or obsolescence (including brokenness). However, examination of reuse and repurposing practices expands the understanding of packaging as mere object, allowing its sorting and cultural evaluation, highlighting its material characteristics.

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3_Disposability of Packaging

Disposability, which is a modern invention, is part of the story and history of packaging. Galvin Lucas discusses how in the nineteenth century, frugality and economic household management that produced no waste was seen as a moral ideal, although in contrast, new, early twentieth-century understandings and standards of hygiene encouraged the disposal of some types of refuse.[46] This period can be seen as the emergence of disposable material culture, specifically through packaging. While most packaging—glass or ceramic containers, tin cans and boxes, paper or cardboard boxes—in the nineteenth century was intended for reuse, increasingly in the early twentieth century, commodities began to be sold in packaging intended for disposal.[47] Disposability and replaceability entered Western culture through various novel disposable paper products at the turn of the twentieth century: paper shirt collars, toilet paper and single use paper cups.[48] The use of disposable packaging in the Western world created ever-increasing amounts of new household trash, which became the object of the recycling campaigns and regulations in the 1960s.[49]

However, in Eastern Europe under Soviet rule, the situation was different. Instead of capitalism and mass consumption, the Soviet economy was a planned socialist economy where access to goods was regulated by the state and there was insufficient supply of various goods. Disposable plastic packaging was not so common in Soviet Estonia, especially in the first decades after World War Two and more generally in rural areas. Respondent Mare, born in 1947, recalls that her personal struggle with packaging is a rather novel problem.

> Life has changed a lot regarding packaging. In the first half of my life, and a little more, I didn't have to deal with food packaging much. We didn't need to buy milk, curd, eggs, potatoes and vegetables in our home. We only bought sour cream, which was packed in a reusable can, as well as curd and minced meat, which were in paper packaging that could be thrown away with peace of mind, and bread was sold in bulk. Many food products, for example butter, sausage, cheese, flour, grain, was on sale by weight and packed in paper or in a paper bag. For sweets, the clerk made a paper cone. On the other hand, in my youth, I had problems with packaging. […] Today, used packaging, especially plastic, has become quite a scourge both at home and at the level of society as a whole. And there are still more and more of it than the mind has ideas for reuse.[50]

As Mare explains, wrapping paper or paper bags, which were common, were used more than once or burned in the family stove. Therefore, paper packaging was part of domestic management and the circulation of trash.[51] The current problem of

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packaging, as Mare indicates, is caused by their abundance, which exceeds the opportunities and ways of reuse. This aligns with Hawkins' suggestion that for the generation that remembers life before mass consumption, "recycling and reuse were, and still are, unremarkable practices—part of the way in which scarcity is managed and the life of things extended."[52] For the older generation, recycling and reuse are part of the ethics of waste, and the cultural economy of waste more broadly.[53] Even if various plastic packaging as a good were produced and designed to be disposable in Soviet society, and therefore were meant to be 'transient,' in the cultural economy it would still be considered reusable and valuable.[54] This cultural evaluation, however, is also based on the materiality of packaging, for example, plastic bags, because their material characteristics afford continuous use. The packaging itself is neither 'transient' nor disposable as material.

4_The Practice of Reusing

One of the most common ways to extend the life of commodities and packaging is reuse. This often follows a normative functionality, or 'proper function,' that encourages consumers to use objects and to relate to them in a certain way.[55] Functionality and use are inherently linked to the shape, design and material of packaging, which are perceived as analytical units in my study. In the case of this 'conventional reuse,' which is the most common method of reuse in domestic setting, objects or materials are used for their original purpose and none or minimal material modifications are made.[56]

A ubiquitous example of reuse is the plastic bag, internationally the most frequently reused packaging item and one that often has a complex social life.[57] In Soviet Estonia, too, it was an iconic example of reuse. Plastic carrier bags were initially seen as modern commodities, and bags with the logo of a Western brand were highly valued as status symbols. Respondent Mare, born in 1947, explains that thin plastic bags for food packaging were initially washed and reused, and customers at markets or shops were often expected to have their own packaging.

> Initially, the emergence of plastic bags and boxes was nice. They were washed for reuse, even if they had contained raw meat or curd. There were times when curd was sold at the market and you took your own plastic bag along with you.[58]

Instead of contemporary environmental concerns, reusing was linked to deficit goods, a constant feature of the Soviet economy that applied to packaging too, and

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practical use value of trash.[59] Various reuse methods are remembered clearly, with some continued by the generation that lived most of their adult lives in Soviet Estonia. Respondent Anne, born in 1953, describes that reusing packaging has continued in her family.

> My mother kept buttons, hooks and seasonings in sweet jars or tin cans, and father kept bolts, fishing hooks and small gadgets in them. I have also done this. […] The next wave of reuse of packaging arrived with the popularity of instant coffee. The glass jars of instant coffee began to be used to store herbal teas and herbs. I have seen long rows, consisting of 10 to 15 jars, displayed on shelves at my friends' homes. The length of the row was a matter of pride and status, because the number of the jars showed access to deficit and expensive goods. The cans were even exchanged to acquire identical jars. Those jars are now long gone, too, and there are long rows of small jars of Santa Maria seasoning on the shelves.[60]

Respondent Anne recalls the various types of packaging that she and her parents have reused. Some of these uses are still present today in her home, some have faded. Some particular uses have clear links with material and social conditions in the Soviet society. For example, the acquiring, collecting, reusing and displaying of glass jars of instant coffee, which was a scarce commodity, was perceived as high social capital. Sometimes, packaging is valued and reused because of its design and aesthetics. For example, Anne reuses two tin boxes that have beautiful colorful designs as storage (see Fig. 1). Shipton and Fisher propose, based on their research in the UK, that the aesthetic and symbolic characteristics of packaging, such as beautiful design and indication of a high-status brand, are the most frequent motivators for reuse.[61]

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https://doi.org/10.22029/oc.2024.1445

Fig. 1: Anne's tin boxes for storing tea bags and buttons.[62]

Apart from the symbolic or personal significance linked to the design, the material properties of packaging are significant. 'Conventional reuse' commonly follows the original shape and design of packaging, affording some specific functionalities. Similarly to making, reuse as a material practice follows the material of object and its properties.[63] Materials and their affordances affect the possibility or likelihood of reuse.[64] Quality and durability are common material characteristics that predispose packaging to reuse in its 'proper function.'[65] For example, glass and tin, specifically tinplated steel or aluminum, are clearly reusable because of the durability of these materials, in addition to which, the reuse of glass and tin has a long history, making it culturally familiar.[66]

One example of historically persistent reuse practice in Estonia is the reuse of glass jars and bottles for canning. Canning was widespread before the Soviet occupation, but its significance increased during the Soviet period, with this practice even supported by the Soviet regime. When there was a deficit of food products in the Soviet economy, growing vegetables and fruit for the household became important, and therefore canning was very common. In addition, abundant canning reflected the household's—and the housewife's—skill, bringing increased prestige. Canning as a

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practice in Estonia incorporates profound cultural knowledge and competences, and carries social and symbolic significance.[67] In contemporary Estonia, canning is still common, although at a reduced level. For the older generation, it is still casual practice, while for younger persons it has become part of family tradition or an alternative lifestyle and DIY culture.

Fig. 2: Vilja's collection of empty glass jars and bottles for canning.[68]

In the Soviet era, households accumulated and stored glass jars and bottles for canning, often more than they actually used. Glass packaging also had economic value, as people received a significant amount of money or coupons for deficit goods for returning it.[69] Empty bottles and jars were kept in pantries, basements or other storage rooms. Jars and bottles are often still kept today, especially by the older generation for whom they have value and high reuse potential (see Fig. 2). Although new jars and bottles are available for purchase, reuse is culturally normative, being part of the cultural economy of waste and of the ethics of waste.[70] Instead of industrial recycling in the contemporary waste management system, where glass containers are often reproduced, this reuse is similar to common industrial practices of the nineteenth and early twentieth centuries, when glass packaging was cleaned and

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refilled.[71] Moreover, due to the persistence of canning, used packaging can also have social value.

> We use bottles that we have collected over the years for canning juice. A number of jars and bottles, which we constantly reuse in our family today, come from my mother's and father's collection. They have already passed away. However, the glass does not wear out.[72]

As Ingrid, born in 1976, indicates, canning is still common for her and is part of her family tradition. Many of the jars and bottles in continuous reuse belonged to her deceased parents, who kept and reused them. Some of this packaging connects generations by being passed down, and is still reused for the same purpose. Materials and material culture, including glass packaging, have their own temporalities and material lives that are different to those of humans, as Ian Hodder proposes.[73] In addition, materials have properties that are significant in the use or making of things.[74] According to the practice theory model discussed by Shove and others, competences, meanings and materials are essential parts of any practice.[75] My empirical data demonstrates that the competences and meanings of packaging reuse traditions influenced by Soviet consumer culture are afforded by the materiality of packaging, and more specifically its functional material shape and design, as well as the material and its material properties, such as durability, waterproof or hydrophobic, flexibility and lightweight. Reuse as a practice follows the material shape and functionality, and the material and its useful physical properties. This shows that as in the New Materialist perspective, material has intrinsic forces that affect human practices.[76] More persistent reuse practices, however, are enforced and preserved by cultural knowledge and have social and symbolic significance.

5_Repurposing as Material Transformation

The extended life of packaging in a domestic setting also goes beyond reuse. Repurposing means that the functionality of an object is often extended in ways that was intended neither by the design nor production of these objects. In the practice of repurposing, some or extensive material alteration is often done to the object or its components.[77] As this section shows, the material of packaging is in some cases repurposed as a source material for remaking.[78]

Domestic repurposing is still present, at least to some degree, on a global scale and in capitalist and mass consumption societies, and it often has a historical dimension,

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for example, linked with former rural lifestyles.[79] Repurposing in Estonia has close, and quite recent, connections with the Soviet past. As Gerasimova and Chuikina put it, "[m]any examples of how people in the Soviet Union adapted old objects have become proverbial: rugs made of old tights and scraps, sweat pants cut up into dusters, seedlings planted in cardboard milk containers, and the like."[80] These exact examples are part of the perception of the Soviet era in Estonia too. Helina indicates in her response, that extending the life of things was perceived as part of the common-sense DIY mentality of Soviet Estonia.

> I've always thought that Estonians have an engineering gene in them from birth —they invent many additional uses for existing thing. Because commodities were not available in the Soviet era, and we had three children in our family, everything in our family had two or three lives.[81]

Some of these methods of domestic repurposing are still known and practiced today. Repurposing often requires material alteration of the material shape and design, as Errázuriz and Greene show for newspapers, and Shipton and Fisher for packaging.[82] For Mare, the repurposing of milk and kefir gable-top cartons for storing jam in the freezer is a common domestic consumption practice.

> I use Tetra Paks of milk or kefir in the freezer. I cut off the upper part of the liter package so that the height is suitable. Also, I put the jam in there with a plastic bag and tie the mouth of the bag tightly with a ribbon or thread. A new package made from a one-liter milk carton holds about three quarters of a liter of jam. Such packaging keeps its shape well and make it easy to store them efficiently in the fridge.[83]

As she explains in her response, the material shape of milk and kefir packaging, width and depth, is suitable for use in the freezer, although it requires specific material modifications, i.e., cutting off the top to reduce the height in order to fit into the freezer. She uses an extra plastic bag inside the carton, tying it at the top to ensure the contents remains inside. Other respondents describe using gable-top milk cartons to plant seeds in spring by cutting off the top, or making small holes in the cap so that it functions as a watering can, to give just some examples. As these instances with milk cartons show, repurposing considers and takes advantages of the original shape, as well as useful material properties such as being waterproof. However, repurposing entails the material transformation of the object, specifically altering either the whole or part of its shape.

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Through material transformation, new ways of use are explored and developed. Knowledge and skill are therefore applied to accommodate new functionalities.[84] Thus, repurposing requires consumer creativity and a DIY mentality. In that sense, material properties are an essential part of the various possibilities inherent in repurposing or remaking objects.[85] Making, or remaking, as Ingold emphasizes, is a process of the becoming of things that follows the material, its properties and the original shape.[86] Some ways of repurposing that the respondents have described can even be seen as domestic upcycling.

Fig. 3: Helina's carrier bags made out of coffee packaging.[87]

Respondent Helina, born in 1980, makes decorative carrier bags, giftbags and handbags out of aluminum foil coffee packaging (see Fig. 3).[88] For her, making these bags is a craft, or craftivism, and a hobby that is beneficial for both her mental health and the environment. Such bags clearly have aesthetic value, which some researchers emphasize as the key aspect in the domestic reuse and repurposing of packaging.[89] Paul Micklethwaite discusses how a carrier bag made out of packaging is a product of domestic upcycling, or more specifically, upcycling-as-reuse, an individual and creative repurposing of unwanted objects that is a contemporary trend in DIY and

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craft or craftivism.[90] Upcycling, in contrast to industrial recycling, is a domestic repurposing and (re)making of objects that enhances the value and utility of unwanted products or waste materials by giving them new functionality or quality.[91]

Some types of packaging are repurposed and upcycled specifically as material, greatly transforming their shape and material form. One example in my empirical data is making rugs out of plastic milk bags. As plastic, milk bags are upcycled because of the packaging material properties, i.e., because they are waterproof, and thin and flexible enough for crochet or weaving.[92] To make the rugs the bags have to be cut into thin ribbons to be crocheted or woven on looms. The material and its properties afford repurposing, which transforms the original shape entirely. As both Ellen, born in 1957, and Mare, born in 1953, recall from their childhood, their mothers used to crochet rugs out of milk bags to use them in the bathroom, sauna, kitchen or outside because the material was waterproof and the rugs did not absorb water.[93] Similarly, Helina started crocheting rug for the bathroom in the 2000s, her brother helping her collect plastic milk bags, but this project was left unfinished due to her studies and having children.[94] Making plastic rugs was a popular way to upcycle milk bags in late 1970s and 1980s Soviet Estonia, when plastic milk bags became pervasive.[95] This can be seen as part of the long tradition of making rugs in Estonia.[96]

> Kadri Kuusk discusses in her thesis, that on Hiiumaa, the second largest Estonian island, rugs are the oldest and most common type of floor covering in peasant homes, possibly reaching back to the end of the nineteenth century. Rugs made of old household textiles have been continuously used and are still used today. In addition to domestic textiles, various textile scraps and materials from local manufactures were used, especially during the Soviet era. Since 1975, when local milk production started using plastic milk bags on Hiiumaa island, the bags or even plastic manufacturing leftovers were repurposed to make rugs. The use of various thin packaging plastic to make rugs is still present to some degree today.[97]

https://doi.org/10.22029/oc.2024.1445

Fig. 4: Floor covering made of plastic packaging and fishing net. This rug was woven out of plastic packaging, transparent plastic film and used fishing net. It was made by Halje Mardi between 1970 and 1980 in Kärdla, Hiiumaa. Object: HKM 5765:2 Tst 1:24.[98]

Floor covering emerged in Estonia in the second half of the nineteenth century, when Estonian peasants started to build wooden floors and chimneys for their traditional farmhouses, and more strictly separating clean dwelling chambers from household or economic areas, such as the threshing floor and the kiln-room, that were part of the houses.[99] Floor covering was often woven on looms from various worn-out textiles and textile leftovers; they were typically rectangular and were often colorful. Craft courses, handbooks, printed pattern books and magazines that emerged and became widespread in the 1920s and 1930s promoted weaving techniques and gave advice regarding the aesthetics of floor covering, including rugs.[100] Making rugs persisted during the Soviet era and became even more popular in the 1990s and 2000s. Repurposing and upcycling are natural part of making rugs in Estonia that traditionally accommodated various sorts of 'trash', such as worn out household textiles and clothes, used woolen yarn and, especially during the Soviet era, leftovers from manufacturing (such pieces of frieze fabric, fishing net, synthetic hay baling twine and plastic packaging) (see Fig. 4). Rugs have always been made out of scraps, and as objects, they are an outcome of local craft traditions, creativity, aesthetics, and manufactures, reflecting cultural economy of waste.[101] Apart from the material aspects of this practice, cultural knowledge and skills are part of such repurposing and upcycling.[102]

https://doi.org/10.22029/oc.2024.1445

Domestic repurposing and upcycling establish a unique relationship between humans, or consumers, and packaging. This relationship extends consumer interaction with trash much more than sorting or reusing goods or packaging does, as explained by Hawkins in his discussion of the ethics of waste.[103] Repurposing or upcycling packaging establishes a material interaction with them. Similarly, repairing as a material practice also means getting to know the object better, its current function and how it works, as well as making an evaluation of its shape, design, material and physical properties.[104] Remaking packaging through repurposing and upcycling incorporates cultural knowledge and vernacular consumer creativity to serve novel functionalities or implement new materials.

Transformation of packaging often follows the original shape, as well as the properties and affordances of the material.[105] A novel repurposed or upcycled object is often not something given but emerges in the process of form-making by following the existing shape or material and its physical properties.[106] Similarly, Errázuriz and Geene have shown that newspaper, which is repurposed in domestic settings in many ways, should be understood as raw paper material, the mutability of which in domestic use is an outcome of its material properties and shape.[107] They have identified 124 different methods of repurposing newspaper, such as drying surfaces and shoes, wrapping fragile objects and food or as a flyswatter.[108] Packaging waste too, instead of being perceived as object, should be understood as material with specific properties that allows various methods of repurposing and upcycling. This creative and experimental DIY mentality and relation to things as materials was common for Soviet consumer culture, with its own particular ethics of trash.

6_Conclusion

The domestic reuse, repurposing and upcycling practices analyzed in this *_Article* are often overlooked by municipal waste management systems. Instead of being utilitarian habits, they are still quite common practices in many societies. Further, as many scholars of sustainable consumption indicate, these practices have ecological potential.[109] Regardless of the transition to the contemporary European waste management system that has taken place since the late 1990s, some of these practices are still present in contemporary Estonia, offering an alternative, and perhaps more sustainable relation to packaging than mere trash sorting.[110] By analyzing packaging

as material culture, this study has focused on the material aspects of packaging, that is, understanding its shape and material in the way they are considered in domestic practices.

Material practices of reusing, repurposing and upcycling are dependent on competences and meanings in practice theory model.[111] Furthermore, as this *_Article* proposes, such practices are based on the affordances of the material itself.[112] This stands in contrast to the cultural construct of disposability. My empirical data demonstrates that people often think of trash in domestic settings not as objects, but rather as potentially useful material. This utility is based on its shape and material properties, allowing for it to be remade into new things. My study shows that people take seriously the material properties of packaging, which they draw on for repurposing and upcycling as practices of (re)making.[113] Therefore, packaging in the domestic setting should be understood as material that has the potential for extended life through transformation.[114] From the New Materialist perspective, packaging trash in households is potentially vital matter—mutable material that is available for creative transformation through human engagement with its properties and forces.[115]

Bennett proposes that reconsidering trash as lively and potentially dangerous matter may change our patterns of consumption.[116] Similarly, I argue that understanding packaging as useful material may deconstruct its classification as trash. Considering Estonia's Soviet past, there are long-standing traditions of vernacular reuse, repurposing and upcycling dependent on the material properties and forces of the packaging. I propose that material and its physical properties have cultural value that predisposes it to some persistent reuse, repurposing and upcycling traditions. Understanding these culturally significant material properties in domestic (re)use and (re)making practices opens up the potential for a culturally informed perception of packaging as mutable material and supports existing cultural and sustainable practices.

_Endnotes

1 For example, the European Parliament adopted a new circular economy action plan in 2020. "A New Circular Economy Action Plan," EUR-Lex, accessed August 1, 2024, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>.

2 Tim Cooper, *Beyond Recycling: The Longer Life Option* (London: New Economics Foundation, 1994), 2.

[3] Cooper, *Beyond Recycling*, 4–11; William McDonough and Michael Braungart, *Cradle to Cradle: Remaking the Way We Make Things* (New York: North Point Press, 2002), 53–63.

[4] On their webpage, the Estonian Ministry of Climate proposes promoting the circular economy, that reuse is a way to prevent the generation of waste, and gives a simple example: "if you use plates purchased from reuse stores or use your friend's old phone, it is considered reuse." "Waste to Resources," Circular Economy, accessed April 8, 2024, <https://ringmajandus.envir.ee/en/waste-resources>. The Estonian Ministry of Climate and the Estonian Environment Agency has proposed, in a Circular Economy White Paper (*Ringmajanduse valge raamat*) steps towards a circular economy in Estonia, which briefly includes supporting citizens' ecological awareness and behaviour and affecting consumer behaviour. "Ringmajanduse valge raamat," accessed September 23, 2024, <https://ringmajandus.envir.ee/sites/default/files/2022-09/20220803_Valge%20raamat.pdf>. According to Estonian data, in 2021, 150 kilograms of packaging waste was produced per capita, 40% paper and carton, 25% plastic and 18% glass. However, only 42% of the plastic was recycled, while the figures for paper and glass were 80 to 90%. See "Pakend ja pakendijäätmed," Keskkonnaportaal, accessed March 14, 2024, <https://keskkonnaportaal.ee/et/teemad/jaatmed/pakend-ja-pakendijaatmed>.

[5] Gay Hawkins, *The Ethics of Waste: How We Relate to Rubbish* (Oxford: Rowman & Littlefield Publishers, 2006), 100; Janet Shipton and Tom Fisher, "There are Times and Places: Systems and Practices in the Domestic Processing and Reuse of Packaging," in *Longer Lasting Products: Alternatives to the Throwaway Society*, ed. Tim Cooper (London: Routledge, 2010), 367–392, here: 368.

[6] Cindy Isenhour and Joshua Reno, "On Materiality and Meaning: Ethnographic Engagements with Reuse, Repair & Care," *Worldwide Waste: Journal of Interdisciplinary Studies* 2, no. 1 (2019): 1–8, here: 1–2.

[7] See Michael B. Schiffer, Theodore E. Downing, and Michael McCarthy, "Waste Not, Want Not: An Ethnoarchaeological Study of Reuse in Tucson, Arizona," in *Modern Material Culture: The Archaeology of Us*, eds. Richard A. Gould and Michael B. Schiffer (New York: Academic Press, 1981), 67–86; see Tridibesh Dey, "Plastic Mut(e)ability: Limited Promises of Plasticity," *Worldwide Waste: Journal of Interdisciplinary Studies* 4, no. 1 (2021): 1–11.

[8] See Florencia Muñoz, Ricardo Greene, Tomás Errázuriz, and Jacob-Dazarola Ruben, "Caring, Repairing, and Reimagining: Experiences from the Rural World," *Diseña*, no. 23 (2023): 1–14; see Tomás Errázuriz and Ricardo Greene, "The Countless Lives of Newspapers and the Right to Repurpose," *Design and Culture* 13, no. 3 (2021): 277–303; see Shipton and Fisher, "There are Times and Places," 367–392.

[9] See Gavin Lucas, "Disposability and Dispossession in the Twentieth Century," *Journal of Material Culture* 7, no. 1 (2002): 5–22, here: 19; see also Tetiana Perga, "Waste for the Soviet Economy: Recycling of Rags in Ukraine in the 1920s," *Worldwide Waste: Journal of Interdisciplinary Studies* 6, no. 1 (2023): 1–15.

[10] See Ekaterina Gerasimova and Sof'ia Chuikina, "The Repair Society," *Russian Studies in History* 48, no. 1 (2009): 58–74, here: 59–61.

[11] Francisco Martínez and Kaia Beilmann, "Waste and Postsocialism in Estonia: Becoming European Through the Management of Rubbish," *EPC: Politics and Space* 38, no. 7–8 (2020): 1348–1366, here: 1355–1359; Francisco Martínez, *Remains of the Soviet Past in Estonia: An Anthropology of Forgetting, Repair and Urban Traces* (London: UCL Press, 2018).

12 Lucas, "Disposability," 5–22; see Susan Strasser, *Waste and Want: A Social History of Trash* (New York: Metropolitan Books, 1999); in the Soviet society, these practices were not necessarily associated with ecological concerns.

13 Cooper, *Beyond Recycling*, 4; Shipton and Fisher, "There are Times and Places," 368.

14 Errázuriz and Greene, "The Countless Lives," 278–289.

15 Shipton and Fisher, "There are Times and Places," 376.

16 Errázuriz and Greene, "The Countless Lives," 298.

17 Gerasimova and Chuikina, "The Repair Society," 68.

18 Christopher Tilley et al., "Introduction," in *Handbook of Material Culture*, eds. Christopher Tilley et al. (London: Sage, 2006), 1–6, here: 4.

19 Sophie Woodward, *Material Methods: Researching and Thinking with Things* (London: Sage Publications, 2019), 20–22; Alfred Gell, *Art and Agency: An Anthropological Theory* (Oxford, New York: Oxford University Press, 1998).

20 Cf. Pierre Bourdieu, *Outline of a Theory of Practice* (Cambridge: Cambridge University Press, 1977).

21 Elizabeth Shove, Mika Pantzar, and Matt Watson, *The Dynamics of Social Practice: Everyday Life and How It Changes* (London: Sage Publications, 2012), 23–25.

22 Tim Ingold, "Materials Against Materiality," *Archaeological Dialogues* 14, no. 1 (2007): 1–16, here: 3.

23 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham/London: Duke University Press, 2009), viii–xiii.

24 Bennett, *Vibrant Matter*, 5–6.

25 Ingold, "Materials," 12.

26 Tim Ingold, *Making: Anthropology, Archaeology, Art and Architecture* (London: Routledge, 2013), 21–31.

27 James J. Gibson, *The Ecological Approach to Visual Perception* (New York: Psychology Press, 1986), 127–134.

28 Cf. Ingold, "Materials," 14; Gibson, *The Ecological Approach*, 133–134.

29 About the Estonian National Museum's network of correspondents and questionaries, see "Kirjasaatjate võrk ja küsimuslehed," accessed April 8, 2024, <https://www.erm.ee/et/content/kirjasaatjate-v%C3%B5rk-ja-k%C3%BCsimuslehed-0>.

30 See H. Russel Bernard, *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (Lanham: Altamira Press, 2006), 492–503.

31 In my *_Article*, I use the terms 'trash,' 'rubbish,' and 'waste' interchangeably. Similarly, Hawkins and Muecke discuss various waste categories in their discussion interchangeably. Gay Hawkins and Stephen Muecke, "Introduction: Cultural Economies of Waste," in *Culture and Waste: The Creation and Destruction of Value*, eds. Gay Hawkins and Stephen Muecke (Oxford: Rowman & Littlefield, 2003), ix–xvii, here: x–xvi.

32 Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge, 2002), 36–37.

33 Michael Thompson, *Rubbish Theory: The Creation and Destruction of Value* (London: Pluto Press, 2017), 24–27.

[34] Hawkins and Muecke, "Introduction: Cultural Economies of Waste," x.

[35] Sabine Barles, "Municipal Waste: From Reuse to Dumping, Late 18th Century to Early 21st Century," in *Throwaway: The History of a Modern Crisis*, eds. Emma Teworte, Christine Dupont, and Stéphanie Gonçalves (Luxembourg: Publication Office of the European Union, 2022), 76–89, here: 77–84.

[36] Strasser, *Waste and Want*, 57; Hawkins, *The Ethics of Waste*, 98–99.

[37] Barles, "Municipal Waste," 80–84; Strasser, *Waste and Want*, 109.

[38] Barles, "Municipal Waste," 84; Gerasimova and Chuikina, "The Repair Society," 65; Anneli Palmsköld, "Reusing Textiles: On Material and Cultural Wear and Tear," *Culture Unbound* 7, no. 1 (2015): 31–43, here: 36.

[39] Hawkins, *The Ethics of Waste*, 100.

[40] Gerasimova and Chuikina, "The Repair Society," 61.

[41] Martínez and Beilmann, "Waste and Postsocialism," 11–13.

[42] See Strasser, *Waste and Want*, 50.

[43] Gerasimova and Chuikina, "The Repair Society," 61.

[44] See Tim Edensor, "The Debris of Industrial Ruins and the Disordering of the Material World," *Journal of Material Culture* 10, no. 3 (2005): 311–332; Martínez and Beilmann, "Waste and Postsocialism," 4.

[45] Hawkins, *The Ethics of Waste*, 4.

[46] Lucas, "Disposability," 6–7.

[47] Lucas, "Disposability," 11–12.

[48] Strasser, *Waste and Want*, 174.

[49] Hawkins, *The Ethics of Waste*, 100.

[50] Respondent: Mare, b. 1947, ERM KV 2023:285.

[51] Practice of burning paper and cardboard trash was common in the Soviet era, see Martínez and Beilmann, "Waste and Postsocialism," 7–8.

[52] Hawkins, *The Ethics of Waste*, 98.

[53] Hawkins, *The Ethics of Waste*, 4; Hawkins and Muecke, "Introduction: Cultural Economies of Waste," x.

[54] See Thompson, *Rubbish Theory*, 24.

[55] See Beth Preston, "The Function of Things: A Philosophical Perspective on Material Culture," in *Matter, Materiality and Modern Culture*, ed. Paul Graves-Brown (London: Routledge, 2000), 22–49.

[56] Errázuriz and Greene, "The Countless Lives," 278.

[57] Shipton and Fisher, "There are Times and Places," 374; Hawkins, *The Ethics of Waste*, 23.

[58] Respondent: Mare, b. 1947, ERM KV 2023:285.

[59] Gerasimova and Chuikina, "The Repair Society," 65; Martínez and Beilmann, "Waste and Postsocialism," 11.

[60] Respondent: Anne, b. 1953, ERM KV 2023:307.

[61] Shipton and Fisher, "There are Times and Places," 381–383.

[62] Respondent: Anne, b. 1953, ERM KV 2023:307.

[63] Ingold, *Making*, 31.

[64] See Gibson, *The Ecological Approach*, 133.

[65] Errázuriz and Greene, "The Countless Lives," 288.

[66] Lucas, "Disposability," 11–13.

[67] Shove, Pantzar, and Watson, *The Dynamics of Social Practice*, 23.

[68] Respondent: Vilja, b. 1965, ERM KV 1367:6.

[69] Martínez and Beilmann, "Waste and Postsocialism," 11.

[70] Cf. Hawkins, *The Ethics of Waste*, 4.

[71] Cf. Lucas, "Disposability," 13.

[72] Respondent: Ingrid, b. 1976, ERM KV 2023:268.

[73] See Ian Hodder, *Entangled: An Archaeology of the Relationship between Humans and Things* (Chichester: Wiley-Blackwell, 2012), 98–101.

[74] Ingold, *Making*, 21–31.

[75] Shove, Pantzar, and Watson, *The Dynamics of Social Practice*, 23–25.

[76] Bennett, *Vibrant Matter*, viii–xiii.

[77] Shipton and Fisher, "There are Times and Places," 371–376; cf. Errázuriz and Greene, "The Countless Lives," 278–289.

[78] Paul Micklethwaite, *Beyond Recycling* (London: Routledge, 2021), 12.

[79] See Muñoz, Greene, Errázuriz, and Jacob-Dazarola, "Caring, Repairing, and Reimagining," 3–4.

[80] Gerasimova and Chuikina, "The Repair Society," 68.

[81] Respondent: Helina, b. 1980, ERM KV 1367:1.

[82] Errázuriz and Greene, "The Countless Lives," 281–291; Shipton and Fisher, "There are Times and Places," 372.

[83] Respondent: Mare, b. 1947, ERM KV 2023:285.

[84] Cf. Shove, Pantzar, and Watson, *The Dynamics of Social Practice*, 23.

[85] Shipton and Fisher, "There are Times and Places," 375.

[86] Ingold, *Making*, 21–31.

[87] Respondent: Helina, b. 1980, ERM KV 1367:1.

[88] Respondent: Helina, b. 1980, ERM KV 1367:1.

[89] Shipton and Fisher, "There are Times and Places," 389.

[90] Micklethwaite, *Beyond Recycling*, 12–14.

[91] Micklethwaite, *Beyond Recycling*, 8–13.

[92] Kadri Kuusk, *Hiiumaa Põrandakatted Kui Kohalike Sotsiaal-Majanduslike Protsesside Peegeldus. Magistritöö* (Viljandi: Tartu Ülikooli Viljandi Kultuuriakadeemia, 2023), 50.

[93] Respondent: Ellen, b. 1957, ERM KV 2023:267; respondent: Anne, b. 1953, ERM KV 2023:307.

94 Respondent: Helina, b. 1980, ERM KV 1367:1. In a follow-up conversation with Helina, she said that she was not satisfied with the outcome aesthetically due to her lack of craft skills, therefore she gave the newly made rug to a friend who uses it as a doormat for a shed at his cottage.

95 The production of plastic milk bags started in 1972.

96 See Ene Kõresaar, *Vaip – Tekki Muodi Asi* (Tartu: Triip Trükikoda, 1999), 26–27; see Kalju Konsin, "Hiiu Rahvavaibad," in *Etnograafiamuuseumi Aastaraamat XXXIII* (Tallinn: Valgus, 1983), 107–122, here: 115–117.

97 Kuusk, *Hiiumaa Põrandakatted*, 49–58; Kuusk*, Hiiumaa Põrandakatted*, 99, indicates, that old or worn-out plastic rugs are used in less clean areas (for example, in a shed) or outdoors (for example, as a doormat for a barbeque house), and if they are excluded from everyday use, they are stored in a storage room at home.

98 Museum object: HKM 5765:2 Tst 1:24. This object belongs to The Hiiumaa Muuseumid Foundation collection, and it is collected in 2008.

99 Kõresaar, *Vaip*, 26–33; Ants Viires, *Eesti Rahvakultuuri Leksikon* (Tallinn: Eesti Entsüklopeediakirjastus, 2007), 334.

100 Kõresaar, *Vaip*, 22–28.

101 Kuusk, *Hiiumaa Põrandakatted*, 4; Hawkins and Muecke, "Introduction: Cultural Economies of Waste," x–xvi.

102 Shove, Pantzar, and Watson, *The Dynamics of Social Practice*, 23; Gerasimova and Chuikina, "The Repair Society," 68.

103 Hawkins, *The Ethics of Waste*, 4.

104 Tim Dant, "Inside the Bicycle: Repair Knowledge for All," in *Repair Work Ethnographies*, eds. Ignaz Strebel, Alain Bovet, and Philippe Sormani (Singapore: Palgrave Macmillan, 2019), 283–312, here: 309.

105 Cf. Gibson, *The Ecological Approach*, 133.

106 Ingold, *Making*, 24.

107 Errázuriz and Greene, "The Countless Lives," 298.

108 Errázuriz and Greene, "The Countless Lives," 281–282.

109 See Cooper, *Beyond Recycling*, 4–11; see McDonough and Braungart, *Cradle to Cradle*, 53–63; see Isenhour and Reno, "On Materiality and Meaning," 1–2; see Shipton and Fisher, "There are Times and Places," 368; see Errázuriz and Greene, "The Countless Lives," 278–281.

110 Martínez and Beilmann, "Waste and Postsocialism," 11–13.

111 See Shove, Pantzar, and Watson, *The Dynamics of Social Practice*, 23–25.

112 Cf. Gibson, *The Ecological Approach*, 133.

113 Ingold, *Making*, 21–31.

114 Errázuriz and Greene, "The Countless Lives," 298, propose, that perceiving newspaper as a raw material can contribute to developing product design for repurposing.

115 Cf. Bennett, *Vibrant Matter*, viii–xiii; cf. Ingold, "Materials," 12.

116 Bennett, *Vibrant Matter*, viii.