



Food, excess, wastage and waste: An ethnography of the practices of framing food products in the Finnish retail sector

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ABSTRACT

The reduction of consumer and retail food waste is crucial for the transition towards a circular economy to take place. Based on an ethnography conducted in a supermarket in Finland, the article examines the hands-on practices of producing and preventing food waste in the retail sector, with a focus on the practices of framing and valuing products. We pay special attention to the process of ridding, which our analysis shows to be integral to selling food products and thus creating value. The findings shed light on how different modes of valuation, both monetary and non-monetary, related to the food products sometimes clash with each other in the everyday operations of the retail business, creating challenges for circular practices. Moreover, the analysis also brings to light how the supermarket practices do not only produce food or waste, but the categories of surplus food are much more varied and subtle. We claim that understanding the multiplicity of these categories, their enactment and mutual relations, and the different modes of valuation related to them is crucial for understanding how and why food waste is generated in the retail sector. Our analysis shows that rather than being only a managerial problem in the context of the circular economy, food waste is always enacted and unmade situationally, through constant hands-on work that also entails leakage and spillover.

1. Introduction

As part of the circular economy (CE) strategy of the European Union, the EU countries are committed to the Sustainable Development Goal, which aims to halve the per capita food waste at the retail and consumer level by 2030 (European Commission n.d.). At the same time, however, the production of food waste has become somewhat normalised on a large scale in industrial countries; business operators and consumers alike consider it regrettable yet more or less normal and unavoidable (Devin and Richards 2018; FAO, 2011). There is research done, for example, on the main causes of retail food waste (Alhonnoro et al. 2019; Goodman-Smith et al. 2020; De Moraes et al. 2020) and on the managerial practices that aim to prevent it (Moser, 2019). However, less is known about the mundane situated rationalities and valuations folded into the practices of producing and preventing food waste in retail stores. In this article, we will examine food waste reduction and production practices in a Finnish retail store from a sociological perspective by focusing on the ways of framing products as waste or not-waste and on what kind of realities the supermarket practices enact to the items themselves.

The research is based on a fieldwork conducted for one month in a Finnish supermarket in September 2019 and on ethnographic interviews done during the fieldwork. Finland provides an interesting context for this research since the country is striving to be a pioneer in the implementation of the CE (Finnish Ministry of The Environment n.d.), and the Finnish retail industry participates widely in voluntary actions to enhance material efficiency and reduce waste (Finnish Commerce Federation n.d.). In this article, by focusing on the everyday practices related to food waste in the retail sector, we aim to contribute to the growing body of research exploring the transition towards the CE as a matter of everyday actions (Hobson, 2016; Lehtokunnas et al., 2020; Mylan et al., 2016; Schulz et al., 2019). Informed and inspired by social scientific waste studies (e. g. Douglas 1966; Thompson 1979; O'Brien 1999; Gregson et al. 2007; Lucas 2002), we pay special attention to ridding as a gradual process (Lucas 2002; Evans 2012) in which the products are framed (Goffman 1974; Callon 1998) in and move between four different categories: *food*, *excess*, *wastage*, and *waste*. We examine what kind of modes of valuation (Çalışkan and Callon 2009) these different framings entail, and how the modes sometimes compete or clash with each other. Our analysis draws from the pragmatist idea of

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value as valuation (Dewey 1939; Muniesa 2012; Helgesson & Muniesa 2013), according to which value does not lie inherently in the objects, but it is enacted and produced in hands-on practices.

Research concerning food waste in general and retail food waste in particular has mainly, but not exclusively,¹ been rather separate from the scholarly discussions concerning the CE. However, as consumer and retail food waste reduction is perceived as part of the transition towards the CE in the food system (Luke, n.d.), it is important to establish a connection between these two discussions. The CE is often defined as an alternative to the unsustainable linear economic model of take-make-use-dispose. There is a lack of a clear and commonly accepted definition for the CE (Merli et al., 2018). In this article, we use the definition provided by Geissdoerfer and others, who define it as ‘a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops’ (Geissdoerfer et al., 2017, p. 759). Thus, in our analysis, we focus especially on practices that aim to minimise waste by, for example, optimising purchases and tinkering the products to make them more desirable to avoid discarding them. At the same time, we also bring out situations where these practices fail. Waste prevention is far from perfect, but it is constantly subject to spills, leakages, and disruptions.

The management of food waste is a crucial part of the retail sector and the business operations of supermarkets (Filimonau and Gherbin 2017). Food waste is often defined as food that is intended for human consumption but discarded instead (Parfitt et al. 2010). However, in the retail sector, the understanding of food waste is slightly different, as it usually refers especially to products that are unsellable from the shelves (Teller et al. 2018). Thus, not all food waste emerging from retail operations refers to food that is discarded, since retail food waste can be donated or otherwise utilised in the store. Given this slight ambiguity of the definition of waste in the retail sector, it is interesting to make visible the different framings and values that may be enacted to the products in the everyday practices of producing and preventing waste, and this is exactly what this article does.

The article is organised as follows: first, we will present our theoretical framework and the research gap we aim to fill with this article. After that, we will describe our data and analysis. Then we will move on to our analysis, which provides an ethnographic account of the daily routines of the supermarket, focusing especially on how products are moved between the categories of food, excess, wastage, and waste in these practices. The analysis also describes the ways in which food waste is managed and brings out how different modes of valuation occasionally compete with each other in the practices. Finally, we will present some concluding thoughts.

2. Theoretical framework

2.1. The circular economy and situated practices

In this article, we look at how the transformation towards the CE is both helped forward and contested in routine everyday practices in the retail sector. We aim to contribute to the literature which focuses on the everyday making of circularity as well as to the scholarship on the ‘socio-political implications and possibilities for shifting current production-consumption-use-waste practices’ (Hobson 2016, p. 89). A growing body of research on different stages of the consumption-production system has problematised the straightforwardness of the practices of preventing waste, circulating objects (here, circulation refers especially to the different trajectories of the objects; whether they end up, for example, as sold, donated, or discarded), and turning waste into a resource through recycling practices and industrial solutions. For example, in her research on ordinary practices of circulating and sharing, Helen Holmes (2018) has pointed out how certain material

properties of objects, such as different qualities of food, can unsettle practices of circularity. It has also been argued that it is unclear how potentially conflicting CE demands affect the everyday life of consumers (Hobson et al. 2021), and with regard to consumption practices and the CE’s goal to ‘design waste out of the system’, researchers have noted that everyday consumption at homes is much more complex than ‘securing the “right” flow of goods and disposing of the waste in the “right” way’ (Mylan et al. 2016, pp. 10). Scholars have also criticised the CE’s idea of waste as a resource by focusing on mundane maintenance and repair practices in biogas plants, stressing that transforming food waste into energy and fertiliser is not a closed loop but rather a messy process full of leakages and side streams (Holmberg and Ideland 2021).

In this article, instead of only focusing on the linear transition of food into waste or value, we aim to make visible the sometimes messy ‘grey space’ (Holmes 2018) between the categories of food and waste (for similar discussions concerning household food waste, see Evans 2012 and for household objects, see Hetherington 2004). We argue that understanding the everyday circularity in the retail sector would, among other things, require sensitivity and attentiveness to different categorisations of the products, the relations between these categories, and the constant work done by the employees to frame the items in certain categories. By this we mean that besides the fact that the products have to be actively kept in or removed from the category of food through, for example, ongoing maintenance of the shelves and discarding spoiling products, the products are also actively framed in the other categories, such as wastage or excess. Making these categorisations visible is useful especially to get a sense of how the products are valued in different stages, and how this valuation contributes to the making or disrupting of circularity.

While there exist ethnographic studies of household food waste and how people make sense of how food ends up as waste (e.g. Evans 2011), an insider’s view on the everyday practices related to food waste in the retail sector has so far been largely lacking. In this article, we wish to fill that gap in research. We focus on the practices between the stages of ordering products to the supermarket and selling them out or ridding them. Drawing from Annemarie Mol’s (2002) conception of ethnography as *praxiography*, we adhere to the idea that food, waste, and value are enacted in varying situated practices.² For example, a leek with shrivelled leaves is waste, but the same leek may also be a valuable product if the shrivelled leaves are removed by the supermarket employees. Thus, the value of the products is not simply attached to them in some cognitive evaluation, but their value is enacted in hands-on practices.

2.2. Frames, ridding and valuation

In the paper, we commence from the nowadays fairly commonly shared idea in the social scientific waste scholarship (see Moore 2012) that nothing is waste inherently and by its essence, but waste is enacted, brought into existence in situated practices, processes, and relations. We are particularly interested in the practices and processes through which things were established as being either waste or not-waste in the context of the supermarket where the fieldwork took place. This perspective shifts focus from starting from a fixed concept of waste to how food items move in and out of the category of waste. In *Frame Analysis* (1974), Erving Goffman (1974) suggests that actors perceive and organise reality with the help of various cognitive frames. A situation or an object may appear very differently depending on the frames used. A football

² According to Andreas Reckwitz, a ‘practice’ (Praktik) is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge.’ (Reckwitz 2002, p. 249). In this article, we draw from this much-cited definition.

¹ For exceptions, see e.g. Mylan et al. 2016.

game, for example, may be perceived quite differently by the fans of the rivaling clubs. Depending on which of the clubs they support, the fans may for instance experience referee calls as either just or unjust and have opposite views of whether a goal was offside or onside. According to Goffman, frames are mainly composed of culture, certain social features, belief systems, and history. Furthermore, an actor may be subject to several cognitive frames that guide their experience and actions (p. 27). The frames are also subject to change, as they are created in and through the continuous interaction of actors and the frame.

When examining different framings of products in the supermarket, we are interested not only in how the members of the staff apprehend them, but we also wish to inquire into how those frames, together with socio-material practices, enact different categories and realities to the products, depending on the situation. We draw from Michel Callon (1998) the idea that frames are formed physically by using different material means. For example, framing a product as waste is constituted spatially by taking it away from the store shelves and finally moving it into the waste container located in the loading bay. In other words, rather than focusing only on the various perspectives that the informants may have on food/waste, we aspire to attend to how the different realities or ontologies of the objects come to be. This approach comes with the overtones of situatedness and performativity: we examine the realities of the items as co-extensive with the frames and practices that construct or enact them (on situated ontology, see e.g. Mol 2002; Woolgar & Lezaun 2013; on enacting different ontologies of food waste, see Mattila et al. 2019). Thus, we insist that to grasp how the products move between different frames necessitates attentiveness not only to language, meanings, and culture, but also to the activity and dynamism of matter and our entanglement with it. The changing material characteristics of the products are taken into account by employees for example when performing calculations about whether a certain item should be removed from the shelves because of having gone bad or whether it can still be sold.

To take a closer look at the practices of framing the products, we focus on especially on the process of ridding. In her article on the valuation of used clothing and books, Emma Greeson (2020, pp. 169) points out that ‘to understand how value is created, we must understand how goods are iteratively produced and reproduced through pragmatic, concrete processes of processing, sorting, categorizing, and/or (most crucially) ridding via various channels’. We argue that ridding is a central process for the main purpose of the store, that is, creating value by selling food products. In our analysis, we approach ridding as a gradual process (Lucas 2002; Evans 2012); before turning into waste or being donated, for example, the products that cannot be kept on the shelves go through a process of removal and alienation, which entails different placings and procedures (e.g. recording products removed from the shelves and storing products to be donated in a cold storage). To analyse the process of ridding and alienation, we focus on how the products are framed as food, excess, wastage, and waste. All of these categories were not explicitly verbalised as such in the field (the employees mainly used the concept of ‘food waste’ about all products that were not sold from the shelves), and thus they can be considered as interpretative concepts created by the researchers as a result of the analysis. They nevertheless also affected how the practices were socially and materially organised. By *food* we mean, simply, products that are sold from the shelves and not circulated through any other route. *Excess* refers to products that are somehow superfluous – usually, this means the potential surplus products that are ordered to keep the shelves constantly stacked. Moreover, excess is a liminal category through which products can move either back to the category of food, or to the categories of wastage or waste. By *wastage* we mean products that are removed from the shelves and thus there is a need to get rid of them one way or another - for example, they may be donated or sold through alternative routes. Finally, *waste* refers to products that are simply thrown away.

In our analysis, we suggest that the process of ridding the products is

intertwined with valuation. Along the process, an object can change status from a saleable commodity to, say, wastage to be donated to charity depending on how it is valued; each framing of the items is connected to and guided by a particular mode of valuation. Drawing on the pragmatist idea of value as valuation (Dewey 1939; Helgesson and Muniesa 2013; Muniesa 2012), we do not approach value as an objective quality residing inherently in the objects that are sold or as a product of subjective judgment (e.g. pricing), but as an outcome of practices and actions (Muniesa, 2012; Lehtonen and Pyyhtinen, 2020) carried out by, for example, the supermarket employees, customers, and marketing devices. The evaluation, sorting, and management of the products potentially going to waste is intertwined with ‘valorisation’, that is, with the creation of value (Vatin 2013). The different situated modes of valuation (Çalışkan and Callon 2009; 2010; see also Geysmans et al. 2017) may occasionally also compete and clash with each other in the everyday operations of the store, for example when one mode of valuation stresses the monetary value of the items and another their non-monetary value. Above all, by paying attention to the different modes of valuation, we aim to make visible how the products are valued in different stages of the process of ridding, and how these modes play a part in the practices of keeping products in a certain category or moving them from one category to another.

3. Materials and method

3.1. The fieldwork and research method

The research materials of this article consist of 120 h of participant observation conducted by the first author. The fieldwork included ethnographic interviews with the supermarket staff, especially section managers. The store observed during the fieldwork is a big supermarket with an extensive selection located in the centre of one of the largest cities in Finland. The supermarket is part of one of the two store chains dominating the Finnish retail sector. Certain store specific features affect the amount and type of food waste generated, such as the shop’s large size, the wide selection of products available, and the existence of a meat and fish counter as well as a salad buffet. Access to the field was gained by contacting the shopkeeper by using the online contact form of the store. After this, the first author planned and discussed the conduction and other practicalities of the fieldwork with the shopkeeper, and together they agreed that the work will be carried out by participating in the daily tasks of the store. The shopkeeper informed the supermarket staff about the research before the fieldwork took place, and the purpose of the research was explained to the employees who participated in the research and they signed a research agreement.

The first author worked at the supermarket with the section managers for one month. Not all foodstuff sections were included in this research. The reason for excluding some sections, such as that for canned food, from the research was the low quantity of food waste produced in these sections. The following table presents the observed sections, the main product categories in each observed section, and the time spent in each section. The sections in the table are divided based on how the responsibilities were divided between the section managers (e.g. the same section manager was responsible for both milk and bread sections) (Table 1):

As she took part in the daily work of the supermarket, the first author became very familiar with the tasks (excluding more demanding tasks, such as placing orders) the employees perform every day, such as shelving the products, checking the date labels, removing expired products from the shelves, placing new products on the shelves, and ordering the shelves. Since these tasks remained quite similar from day to day, the ethnographer was able to perform them independently and routinely.

Hands-on participation in the daily tasks affected the ethnographer’s position in the field; the employees, managers, and customers of the supermarket mainly saw the ethnographer as one employee among

Table 1

The observed sections and the time spent in each section.

	Milk & bread sections	Convenience food and cheese sections & 'To go' shelf	Fruit and vegetable section	Fish counter	Meat counter	Salad buffet and fresh bakery product shelf
Product categories in the sections	Milk section: milk products (e. g. yogurt, milk) and juices, spreads and eggs. Bread section: breads and related products (e. g. bread and sweet baked products)	Convenience food, cold cut, sausages, cheese, vegetarian products and 'To go' shelf (located near to the entrance of the store, offering for example convenience food for 'a quick lunch')	Fruit and vegetables	e. g. Fish, clam	Different meat products (e. g. steak, marinated meat)	A salad buffet where customers can collect a lunch salad from the buffet, a shelf offering bakery products (e. g. croissants and Danish pastry) baked in the store
Time spent in the section	1,5 weeks	1 week	1 week and 1 day	1 day (the day included observing the salad buffet, bakery product section, fish counter and meat counter)	1 day (the day included observing the salad buffet, bakery product section, fish counter and meat counter)	1 day (the day included observing the salad buffet, bakery product section, fish counter and meat counter)

many. On the one hand, this was fruitful for gaining the trust of the people in the field but, on the other hand, it hindered the ethnographer's ability to document in detail the events and discussions immediately there on the spot. Thus, short jottings were written during breaks and more extensive field diary entries were crafted after each day. Due to the nature of the data, all the details presented in the analysis, such as the numbers regarding the percentage of food waste, should not be taken as exact facts. The reason for this is that the information was collected mostly during informal conversations with the staff, not from accurate documents and thus they are approximate estimations that might vary between different seasons. Presenting accurate food waste numbers here could also risk the anonymity of the store. However, the estimates presented in the manuscript are not of course just any random approximations since the section managers are always well informed about the sales.

The analysis of the data proceeded from a systematic reading to the coding of the data. The coding was conducted by identifying different practices of preventing and producing food waste as well as ways of framing the products by using different highlight colours in a word processor. After identifying the key practices and understandings related to food waste in the field, we decided to focus on the different framings concerning food products. In this, our methodological approach draws from Goffman's (1974) classical work on frame analysis that was introduced above, with the addition, however, that we pay attention not only to the meanings that food/waste is given, but also to the hands-on socio-material practices of dealing with food items and how they enact certain categories to the products (Callon 1998).

While the fieldwork was place-based insofar as it was conducted at the supermarket mentioned, it nevertheless amounts to a kind of 'relational ethnography' (Desmond 2014); we are interested not so much in the place itself or in the supermarket staff as a group as in the processes of generating value and waste – processes which involve configurations or assemblages of relations between various actors or entities (e.g. store management, employees, shelves, food products, decay, business calculations, and waste bins).

3.2. The Case: Finnish Supermarket, the CE and food waste

Finland was the first country in the world to prepare a national road map to a CE in 2016, which includes, among other things, goals to improve the management of the material streams of retail businesses by developing digital applications (Sitra 2016). Thus, CE is a useful analytic lens for studying food waste reduction and production practices in the retail sector. Although the CE was not generally used as an explicit concept in the store by the employees or the shopkeeper, food waste reduction and management was nevertheless a central normative ideal and practice in almost all of the everyday operations in the store.

Finnish retailers have set numerical objectives to reducing food

waste and report produced food waste in their annual sustainability reports (Mesiranta et al. 2021). They have also made efforts to avoid discarding the unsold food, such as donating wastage food to food banks³ and optimising orders by developing information systems that predict the sales, and these actions have led to food waste reduction in the retail sector (FGT n. d.b). If waste cannot be prevented, then it should be used as a resource for, for example, biogas production.⁴ At the same time, Finland can be considered as an example of an abundant society; a large variety of items is available in Finnish retail stores, and this is also one of the root causes of retail food waste (Gruber et al. 2016). Moreover, the Finnish retail sector is strongly clustered with two dominating retail chains. Thus, the retail sector has much power over the producers, and this is manifest for example in quality standards concerning the products, which may lead to food waste also in other parts of the food chain (see also Devin and Richards 2018). These issues make the Finnish context is of particular interest for the research concerning food waste and the CE especially from the viewpoint of problematising the straightforwardness of the CE discourse (see also Holmberg and Ideland 2021) – regardless of the rather efficient managerial practices of preventing waste, on the level of everyday practices, waste prevention is still always situatedly negotiated with unavoidable leakage and wastage.

4. Analysis

4.1. Food

Framing products in the category of food is embedded in the everyday, routinised practices in all of the observed sections of the supermarket. The day begins with each section manager removing expiring products from the shelves before the store opens. The act of separating the unwanted and spoiled products from the still sellable ones is crucial for establishing certain items as food. This observation is in line with Greeson's (2020) argument that the concrete processes of sorting, categorising, and ridding are crucial for value creation: the products on the shelves cannot be made desirable without first ridding the unwanted products.

In some sections, such as in the convenience food section, products that will expire within the following three days are usually marked with a '30%' discount sticker. If there are several similar soon-expiring

³ In Finland, food banks are organisations operating mainly in the voluntary sector. They collect surplus food from supermarkets and hand it out to people with low income.

⁴ In Finland, 100 % of the biowaste from the retail sector is recycled and none of it ends up in landfills (FGT, n. d.b). However, as the data used in this article does not enable us to analyse this further, in our upcoming work we will examine the waste treatment practices in more detail.

products from the same brand, sometimes the section manager may also set a discount campaign on those products. Selling expiring products at a discount is a mode of valuation that aims to prevent the soon-expiring products from ending up as *wastage* or *waste* and retain them in the category of food. By contrast, in some sections, such as in the milk section, the ‘-30%’ discount stickers are not used at all, and the soon-to-expire products are donated to the food bank. However, in other sections, too, there were situations where the discount stickers were not used. The following observation is from the convenience food section:

Yesterday I checked the dates of the products on the ‘To go’ shelf. On it, all products that spoil on the same day are usually provided with a discount sticker. I had labelled the products of a certain brand that would go bad that very same day, but today the person in charge noted that the products of this particular brand should not be labelled, because the items that are not sold are reimbursed by the producer. *Field diary entry, 13 Sept 2019*

As the fieldnote suggests, removing products from the category of food does not always equal financial loss for the supermarket. The store has established contracts with some producers that entitle it to a refund from certain products if they are left unsold. This exemplifies the power that the strongly clustered retail sector has over the producers in Finland: to be able to get their products on the shelves, in these cases it is the producers who are forced to bear the financial risk related to wastage.⁵ It is crucial to note, however, that the particular situation described above concerned one specific product from one specific brand; the other products in the same section were provided with a discount sticker and thus they were kept in the category of food. The practice nevertheless reveals that here the mode of valuation primarily prioritises the possibility to get a refund from the product and thus save money rather than retaining it in the category of food. It is up to the section managers whether they use the discount stickers in their sections; the section managers’ own situated understandings, valuations, calculations, and knowledge significantly affect whether they consider the use of the discount stickers as reasonable or not.

Alongside checking the date labels and placing the discounts, the section managers have a daily routine of organising the sections, and these organising practices crucially contribute to the framing of the products as food. The following field diary entry describes the logic according to which the shelves are organised:

When we were checking the date labels the section manager advised me to arrange and sort the breads so that the oldest products are at the front and on the top, while the newest are at the back. According to the section manager, the front of the shelf is the best-selling place and, to avoid loss, soon-to-expire products must be sold as soon as possible. At the same time, the section manager pointed out that it is important that the shelves are organised to look ordered, clean, and full before the customers come in when the store opens. *Field diary entry, 3 Sept 2019*

To keep the products framed as food, the sections have to be constantly organised to prevent the products from spoiling before they are sold. Moreover, to make the shelves appear inviting for the customers, it is also important to keep them full. After organising the shelves, the section managers and other employees start shelving the daily shipment of items. The pictures below illustrate the difference that organising and stacking the shelves makes (Fig. 1).

In the fruit and vegetable section, the everyday routine is a bit different compared to the milk, convenience food and bread sections. In it, only expiring products with date labels are removed before the store

opens. The products that do not have date labels have to be evaluated by using one’s senses as judgment devices, based on the smell, texture, and appearance of the items (see also [Lehtonen and Pyyhtinen, 2020](#)). This is done during the work day while shelving the daily shipment of products. The section manager of the fruit and vegetable section said that she usually ‘repairs’ some products (for example leek and kale) and thus preserves them in the category of food whenever this is still possible by removing shrivelled leaves from them. She said that ‘she cannot accept them to end up as waste’, since the items can often be salvaged and kept on the shelves with a little effort. Thus, the different material properties of the products affect the possibilities of circulating them (see also [Holmes 2018](#)). The required ongoing valorisation described in this section shows how the products are in a constant state of potential change from food to excess, wastage, or waste, and how the store employees aim to constantly reframe and renegotiate their ontological status through using their skills and resources to make soon-to-expire products still desirable and sellable (in cases when this is still considered reasonable). Yet, at the same time, the store is able to operate efficiently only provided that the shelves are kept full and inviting, and this is bound to produce excess. The framing of the products as food is therefore to some extent dependent on excess. We will analyse this in more detail in the next section.

4.2. Excess

During the fieldwork, it turned out that it is a common principle for the operations of the supermarket to order slightly too many products to the shop to keep the shelves constantly stacked. For example, the section manager of the milk and bread sections brought out that food waste is part of the normal operations of the store, and a steady amount of food waste proves that the section is well managed. We call these products *excess* here. By excess, we refer to the fact of ‘having too much of something’, in contrast to scarcity (which is to ‘have too little of something’) and abundance (which equals ‘having an unproblematically sufficient amount of something’) ([Abbott 2014](#)). It is crucial to note that the store employees themselves mainly used the word ‘food waste’ for all products that were removed from the shelves, and thus the usage of the terms here is partly overlapping. The food products are framed as excess when they are removed from the shelves (but not yet discarded) or are considered as superfluous otherwise. They might, however, still change their status back to food, or alternatively they may turn to wastage or waste (see also [Evans 2012](#)). Thus, in the context of the supermarket, excess is in a sense a liminal category that creates a ‘gap’ between disposal (see also [Hetherington 2004](#)) and possible alternative circulations. The amount of excess varied between different sections, and in some sections its percentage was really low.

During the last twenty-five years, the selection of food products in grocery stores has tripled in Finland (FGT n.d.a). On the one hand, a large selection of items along with alluring novelties increases the competitiveness of the store. On the other hand, consumers are used to a wide selection of items and expect to find everything they want from the shelves. For example, in the beginning of the coronavirus pandemic, when people hoarded some products, the temporary lack of certain items raised serious concern in some consumers about food security. Thus, excess is a crucial category when the supermarket aims to maintain their competitiveness and keep the customers happy. However, while the production of excess and thus potential waste is something known and even planned in advance, this does not mean that the employees, managers, or the shopkeeper would be indifferent to the amounts of food waste generated. In fact, they work hard to minimise the amount of waste produced, and usually their goal is to generate less food waste than what is set as the goal percentage of each section.

One of the key devices in the management of the flow of food in and out of the supermarket is a digital device that is used by the staff to track the food waste produced. At the same time, this device is central for the practices of framing excess, as it creates concrete divisions between food

⁵ This practice in the Finnish retail sector is, however, potentially going to be banned in the near future due to the upcoming legislative actions in the EU and Finland ([Government proposal HE 199/2020 vp, 29.10.2020](#)).

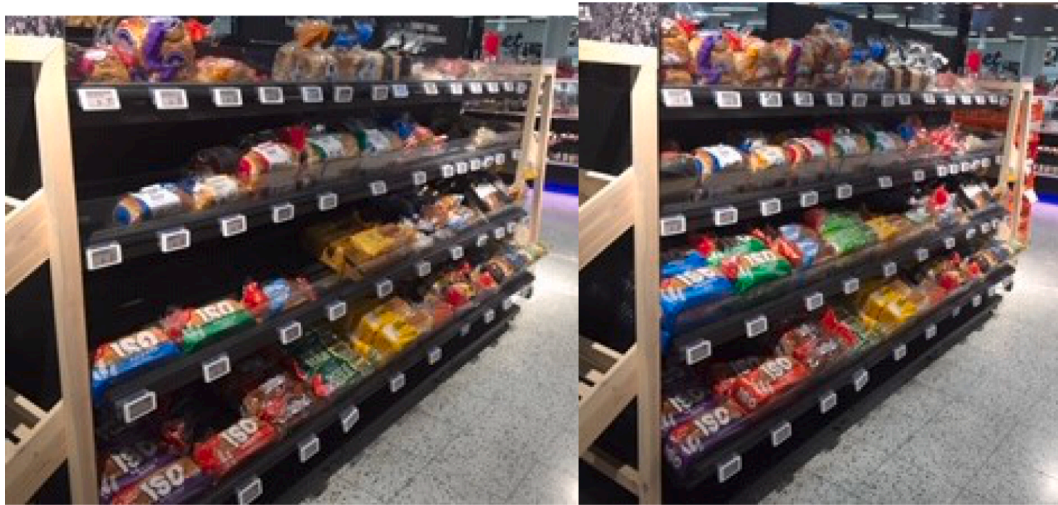


Fig. 1. Bread shelf before and after ordering and stacking.

and excess and is thus helpful in the alienation and removal of products (see also Lucas 2002). The device is connected to the data concerning the products available in the supermarket's selection. The following field note describes the usage of this device:

Using the device, the section manager recorded in the information system of the store all the breads that were removed from the shelves. The section manager always carries this device with her. The device looks a bit like a large vintage mobile phone. It is used, for example, for recording food waste and marking the prices of the products to the small digital screens that are attached to the shelves. The barcode of a product removed from the shelf can be read by using the device. Then the correct function has to be chosen from the device, in this case the function is 'food waste'. This procedure ensures that the store is always keeping track of what happens to the products. *Field diary entry, 3 Sept 2019*

It is crucial for the operations of the store to stay in control of the production of excess, and thus all waste has to be constantly tracked. All section managers and employees use this device for example for pricing the products and recording food waste or products that are reimbursed. It allows them to follow the sales accurately and keep records of every product that is removed from the shelves. When performing these recordings, the employees reframe the products from the category of food to excess. Thanks to this practice of tracking and keeping records the store can maintain the loss caused by each product at a reasonable level and remove from the selection products that have too little demand. Usually, the section managers are responsible for estimating whether products cause too much loss.

Since the production of excess has to be monitored and controlled, every section has its own individual goal percentage for food waste, and these are central for the efficient operation of the store. Through these goal percentages, the framing of excess starts in a sense already before the products actually enter the store, and thus the category of excess is spatially undetermined. In the sections observed, these percentages varied considerably: the smallest goal percentage was 0.5–1.5% (the milk section) and the highest 12–13% (the fish counter). The section manager of the fish counter said that the shopkeeper considers the high food waste percentage as acceptable, since the fish counter also brings big profits for the supermarket. The following fieldnote describes the discussion that the ethnographer had with the section manager:

The manager of the fish counter said that this store has an extensive selection of fish, much wider than many other stores have. Thus, the fish counter is one of the main attractions of the store. It offers specialties, such as fresh tuna and oysters. The food waste percentage

of the fish counter is rather high, even twelve to thirteen percent. This results from the wide selection. The manager said that this is part of the selling strategy of the store, and the high percentage of food waste has been calculated as being profitable. *Field diary entry, 30 Sept 2019*.

The goal percentage for food waste at the fish counter is calculated based on cost-effectiveness: the economic loss caused by the production and treatment of waste needs to be smaller than the profits gained by maintaining a wide selection. Thus, the mode of valuation here allows controlled leakage. However, according to the section manager, the employees also make a great effort to valorise the excess from the fish and meat counter, and thus there is also another mode of valuation at play that aims to categorise products back to the category of food and thus avoid leakage. Some of the surplus fish and meat from the counter can, for example, be used in ready-made meals that are sold in the meat and fish counter and cooked in the store. Moreover, fresh fish can be smoked and sold in the fish counter after the point when it is no longer good enough to be sold as fresh. Here, the utilised products are reframed from the category of food to the category of excess and again back to the category of food. However, this valorisation requires careful planning and concrete hands-on work from the supermarket employees. They take time, and according to the employees, there is not always time to do this. In other words, it is not always considered worthwhile to engage in this valorising process. Thus, perfectly edible excess food that could still be circulated ends up as waste. The valorisation has to emphasise the reasonable use of working time, and this requires that one sometimes accepts possible leakages in the circulation of the products. Next, we will analyse how the products circulate in cases when they cannot be reverted to the category of food but are framed as what we call 'wastage'.

4.3. Wastage

When the products cannot be reverted to the category of food from the liminal category of excess, they enter the category of wastage. By wastage, we mean products that are not sold by the supermarket from the shelves, but are ridded through alternative routes, for example by donating them to food banks or by selling them as leftovers in collaboration with business partners. While excess is a spatially undetermined category, and excess products can be reverted to the category of food, wastage food is separated from the products sold in the store by being moved to the 'back room'. Here, the 'back room' not only creates a certain conduit for ridding the wastage food (Evans 2012; see also Gregson et al. 2007) but also enacts a clear categorical separation

between wastage, on the one hand, and food and excess, on the other.

The ways of valorising wastage were different depending on the section and the varying qualities of different products. For example, in the convenience food section, the products that will expire sooner than within the following three days (or have already expired) are usually either discarded (expired products) and thus are framed as waste, or donated to the food bank (products that have not yet expired but are removed from the shelf) and enacted as wastage. In the milk section, the date labels are checked on alternate days, and soon-to-expire products are either discarded (products that are not edible/drinkable) or donated to the food bank. In the bread section, the date labels are checked every day, and the products that will expire on the same day are usually sold by using a particular Food Waste Application⁶ (usually bread and buns) or discarded (typically sweet baked products that have to be stored in cold temperature). Bread and bun bags to be sold through the app can be stored in the tables located in the store's large warm storage space until they are picked up by the customers. On the contrary, products that require cold storage are not usually (with few exceptions) sold through the Food Waste Application, since keeping them stored until they are picked up is not always considered reasonable due to limited cold storage space.

The store gets money and visibility from selling the wastage food through the Food Waste Application, while donating them to the food bank does not financially benefit the store (while of course it is beneficial to the store to be able to publicly announce that they donate their wastage food to food banks rather than discard them). Even if the store does not gain money from the donations, some employees saw donating the wastage food to the food bank as valuable in other terms:

The section manager of the convenience food section told me that she thinks it is nice that the food bank gets the products going to wastage from her section. She was especially impressed by how the organisation is largely run by volunteers. She said that it feels good that people in need get the edible wastage food and that especially during Christmas time it is nice that people with low income get something on the Christmas table. *Field diary entry, 9 Sept 2019*

All modes of valuation in the store are not driven just by the principle of economic efficiency: as the field note suggests, donating the wastage food to the food bank is based on the ideas of morality and gifting (see also Holmes 2018). However, at the same time, food banks have been criticised for depoliticizing the injustices of the food system (Williams et al. 2016), and the fact that poor people have to rely on 'the leftovers of the rich' can be stigmatising and humiliating for them (Fig. 2).

When products are sold on the Food Waste Application, the mode of valuation is quite different compared to donating: in the case of the Food Waste Application, the fact that the products are framed as wastage forms a significant part of their desirability, and explicitly marketed as such, thus turning the potentially stigmatising aspect into something positive: while saving money, the customer does good to the environment by buying the wastage food and not letting them go to waste. In addition, the store gets positive visibility through collaborating with the app: the contract highlights the store's efforts in minimising food waste, and the customers might also purchase something else when they come to pick up the wastage bags. Thus, here the mode of valuation is based on the idea that circulating the products can create economic benefit, and the customers can choose to be 'responsible consumers' who contribute to food waste reduction.

Selling the products through the app is not, however, always simple: the time and the resources the employees have for handling the wastage food affects whether the products end up as waste or not, and different qualities of the products themselves condition the possibilities for



Fig. 2. Products from the convenience food section waiting in the cold storage to be picked up by the volunteers of the food bank.

circulating them. For example, sometimes the still edible fruit and vegetables that are removed from the shelf are sold on the Food Waste Application and thus remain in the category wastage rather than turn to waste. However, according to the section manager, there is not always enough time to prepare them for the sale, since it takes a lot of time to evaluate the items one by one, whether a particular fruit or vegetable is still good enough to be sold for a reduced price or needs to be discarded:

Today, there were several boxes of waste from the fruit and vegetable section. They were collected in one trolley. I then took the trolley to the backroom, where I separated the spoiled items from the still usable ones, which I placed in the Food Waste Application bags. Some of it, however, ended up in the bin, as they could not even be used for the bags. If there has been a considerable amount of excess from a certain product, I have moved it to the cold room to wait for the next day, so that I can use the items for the Food Waste Application bags; one cannot stuff the bags with one kind of product only, but one should use a variety of products. It however takes a lot of time to prepare the bags (approx. 30–45 mins for myself), so one always simply does not have the time to make them. *Field diary entry, 20 Sept 2019.*

To be able to sell the wastage food through the Food Waste Application, they need to be made edible and valuable through concrete work. This means, for example, removing mouldy grapes from grape boxes or separating spoiled vegetables from the still edible ones. This concrete work of saving food from the waste stream often remains invisible (Abrahamsson 2019), but it has consequences for how food is moved from one category to another – in other words, whether it ends up as waste or not. Moreover, valorising the surplus products requires that they can be stored in the cold, sometimes for several days; the bags sold through the Food Waste Application must contain items from more than one product and they have to be full. Thus, if you have several boxes of surplus cucumbers, you can only sell a part of them in one day. It for example happened once during the fieldwork that almost a whole shipment of cucumbers was not sellable, since they were probably stored in too cold a temperature during shipment and thus, they had turned soft. The ethnographer stored these cucumbers in the cold and waited to get a larger variety of products at hand later for the cucumbers to be sold. As we argued above, while keeping the products framed as food requires ongoing work for the store employees, it also takes a lot of hands-on work to keeping them framed as wastage that can be circulated through alternative routes (Fig. 3).

The staff also has to pay attention to the quality of the bags. Related to customer satisfaction, the section manager of the fruit and vegetable

⁶ The Food Waste Application, anonymised here, is a mobile application that allows grocery stores and restaurants to sell their still edible leftover products that would otherwise be discarded.

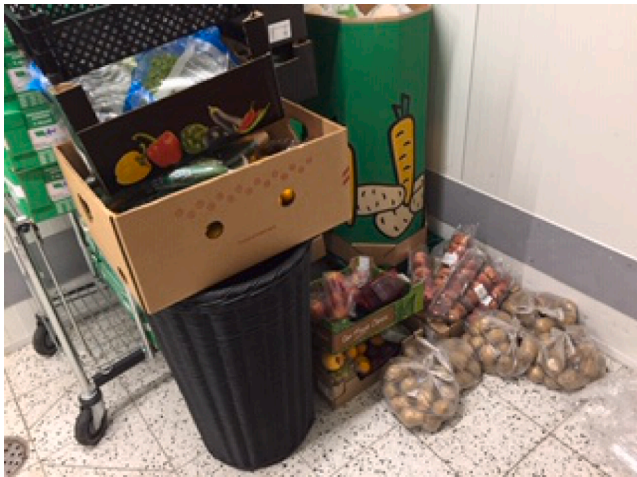


Fig. 3. Ethnographers' storage of wastage food.

section was sometimes worried about whether the consumers even realise that they buy wastage food that is not at its best anymore when they use the application. Thus, resulting from the extensive work and consideration that selling the wastage food requires, sometimes a more appealing or the only possible alternative for ridding them might be discarding them and thus frame them as waste. In the next and final section of our analysis, we will scrutinise how this framing happens.

4.4. Waste

If the products cannot be salvaged from the waste stream during the process of ridding, they are discarded and thus framed as waste. During the fieldwork, it became apparent that the generation of waste is considered more or less as a normal part of the everyday operations of the store by the employees. Nevertheless, occasionally they also felt bad for having to discard food:

When we were in the break room, the merchant trainee asked me whether I have been satisfied with my observation period and added jokingly whether I will write about how I have committed in food waste reduction practices by eating chocolate and bread in the break room (some excess bread from the bakery product section as well as some expired chocolate and candy are usually taken to the break room so that the employees can eat them during the breaks). Becoming more serious, the merchant trainee brought out that he is sometimes shocked by the amount of waste when he takes it to the waste container located at the loading bay *Field diary entry, 19 Sept 2019*

As the field note suggests, here the mode of valuation does not emphasise only issues related to economic efficiency of the store operations when discarding food. It was against the merchant trainees' own principles to discard food, since he felt concerned about the amount of food waste generated. Thus, the employees do not always straightforwardly and without moral reflection consider food waste as a normalised and taken for granted part of the store operations, but on some occasions the issue was clearly more controversial. What is more, the field note highlights how the process of framing products as waste happens, again, through socio-material and spatial relations: when the unsellable products are taken to the loading bay of the store and placed within waste containers, the biochemical properties of the items may not change the least bit, and yet their ontological status seems to be irreversibly altered from food to waste (see also [Lehtonen and Pyyhtinen, 2020](#)). The waste container consolidates and reinforces, as it were, the categorisation of the object as waste.

The loading bay is a central nodal point for the flow of products in

and out: products come in through it, but on the other hand, food waste (and other kinds of waste too, such as plastic and cardboard) as well as reusable storage boxes are also circulated through it out from the store. Framing products as waste through moving them to the loading bay and, eventually, to the waste container, separates them from wastage located in the back room of the store (as well as from the food products located on the store shelves). A process of sorting and categorising, as described in the previous sections, precedes this practice of removal of unwanted products (Fig. 4).

During the fieldwork, the ethnographer noticed how the main goal in preventing waste in the supermarket is not always related to exhausting the value of the object before discarding it, but first and foremost to ensure that no money is wasted when it is possible to avoid wasting it. Accordingly, when talking about waste prevention, the employees did not always refer to efforts to prevent the generation of food waste; occasionally, for them, 'wasting' also meant loss of economic resources. For example, the section manager of the milk and bread sections voiced that 'I have been taught that an empty shelf equals waste for the supermarket'. When the ethnographer asked the section manager what she exactly meant by this, she said that if the shelf is empty when a customer arrives to buy a certain product, the customer most probably goes to another store to buy the product they were looking for. In her description, 'waste' thus embodies the idea of wasted potential or opportunity; money is wasted if the shelves are not kept stocked. These two different wastes, loss of food and loss of money, do not always coincide. Rather, not surprisingly, sometimes preventing the store from losing money was valued as more important than the generation of food waste; as long as the store would avoid losing customers and money, food waste was often regarded acceptable, provided that its production was kept under control and within certain limits:

The section manager apparently unshelved almost an entire batch of certain products and said that if this happens even once again, they have to remove the product from the selection entirely. I mentioned that I feel like the particular product always causes a great deal of waste. The section manager responded that it is alright to have some waste, but there should not be this much of it. *Field diary entry, 26 Sept 2019*

Here, the mode of valuation employed strongly emphasises the economic efficiency of the store operations. In our view, this was an essential way for the supermarket staff to make sense of discarding food, even if at least some of them felt bad or morally controversial for doing so.

While the amount of food waste produced at the supermarket was to a great extent a result of efforts to secure product availability, there were



Fig. 4. Discarded sweet baked products.

other reasons, too, why food items went to waste. In some cases, food waste was generated simply due to the unpredictability and business of everyday life in the store. Occasionally, the difficulties in communication, lack of knowledge (this concerns especially employee replacements during weekends and holidays), and lack of time led to food waste. For example, sometimes when the ethnographer was shelving the products, the shelves of some sections were so full that there was not always time to organise them so that the oldest products would be placed in front. Because of this, some products were buried to the back of the shelf, and these products easily expire or even spoil. Further, the daily work in the supermarket is often hectic, and this causes disruptions in the communication between the employees: every day there are enormous masses of products arriving at the store that have to be placed, organised, and sometimes also priced. If more than one employee is responsible for shelving the products in a section, it is almost impossible to communicate to the section manager about all the issues related to the discounts and placing or pricing the products. Thus, the management of the sections is not always perfectly efficient and products may also end up as waste as a result of this.

5. Conclusion

In this article, we have analysed through ethnographic fieldwork the situated practices of producing and reducing food waste in the Finnish retail sector, paying particular attention to how the products were framed and valued in these practices. Instead of assuming a simple linear food-to-waste transformation, our analysis has focused on the ‘grey space’ (Holmes 2018) between these two categories in the store, with a special focus on ridding as a gradual process. This has been done to better appreciate the complexity of the careers of things in the process of ridding. With its praxiographic approach, the article has provided an insider’s view on the everyday practices and framings related to food waste in the retail store that served as the site of the fieldwork. Our analysis is in line with social scientific waste studies that have often pointed out that waste reduction and moving products between different categories requires concrete labour and hands-on work (Gregson et al., 2013; Lehtonen and Pyyhtinen, 2020; O’Brien, 1999; Reno, 2009). It is important to note that while the hands-on work was crucial for creating circular practices in the store, the practices themselves also entailed and led to leakages that disrupted circularity.

The leakages often occurred in the event of clashes between different modes of valuation, for example when saving money was valued above preventing waste. The employees did a lot of work to frame and retain the products in the category of *food* by for example constantly organising the shelves so that the products would not spoil before they are sold as well as providing discounts on expiring products. However, on some occasions, the products were framed as waste instead and discarded, if this was seen as more reasonable from the perspective of saving money. With regard to *excess*, which was the second category that we analysed, hands-on work was done in order to control and calculate the number of items that are framed into this category. Here, the mode of valuation allowed leakage provided that it was controlled and cost-efficient, but for example surplus fish and meat could still sometimes be salvaged from the waste stream and reverted to the category of food through utilising them in ready-made meals. This was not, however, always done in order to use the working time efficiently. When products were framed as *wastage*, which was the third category in our analysis, they were often salvaged by donating them to the food bank or by selling them as leftovers in collaboration with the Food Waste Application company. Especially when the products were donated, the mode of valuation emphasised the ethical aspect of the practice: donating was framed as a form of helping those in need. The practice of selling the products on the app, too, to some extent entailed a form of ethics besides the prospect of still getting some money out of them, but now the mode of valuation stressed ecological virtues instead of philanthropy and solidarity; the wastage food distributed by using the app was marketed to the

consumers with the idea that they can choose to save the products going to wastage. In other words, the consumers were lured into buying into a certain kind of ethics – of doing good to the environment – when buying the products. As maintaining the food products in the category of wastage by preventing them from going to waste in some cases required a lot of work and sometimes also cold storage space, occasionally some of the products were just discarded. *Waste* was the fourth category that we analysed. Some employees expressed in a straightforward manner how bad they felt about having to discard food, and yet to a certain extent food disposal made sense economically, since loss of money was considered as a more severe harm than producing food waste. In other words, here the mode of valuation stressed the economic efficiency of the store operations over successful waste prevention. So, while the store employees and the shopkeeper all worked hard to minimise waste whenever they considered it as reasonable to do so, creating circular practices was clearly a challenge when having to at the same time try to maintain efficient store operations.

Our article contributes to the research on the everyday making of circularity by making visible the multiple categorisations that products may undergo during the process of ridding, thus shedding light to the complex processes through which the products end up as waste or something else; not all the food items that were unsellable from the supermarket shelves ended up in the bin as waste, but they were also categorised as excess and wastage, and they could be circulated or sold as wastage food through optional routes. Our analysis also showed how the different framings of products were not only an outcome of some cognitive judgements but involved concrete hands-on practices that enact different realities to the products. These practices participated in moving the products from one category to another, but also in retaining them in a certain category (e.g. when selling the products in the Food Waste Application, it was particularly important to maintain the framing of wastage by preventing the items from spoiling). What is more, the category of food appeared to be constituted in relation to the other categories that we identified: the production of excess, wastage, and waste was central for keeping the shelves stacked and inviting. Thus, according to our interpretation, while striving to meet circular economy objectives, the store operations nevertheless did not seek to avoid leakage completely, but rather keep it under control; a certain level of food waste was deemed acceptable. Moreover, the practices of circulating wastage described in the analysis were crucial for making sense and justifying this leakage. Therefore, we suggest that understanding the relations between different categories of objects, their socio-material constitution, and spatial arrangements is crucial for understanding how circular practices as well as their potential leakage are, and can be, created not only in retail stores but other environments, too.

CRedit authorship contribution statement

Taru Lehtokunnas: Writing – original draft, Writing – review & editing, Investigation, Conceptualization, Methodology, Funding acquisition. **Olli Pyyhtinen:** Writing – original draft, Writing – review & editing, Conceptualization, Methodology, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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