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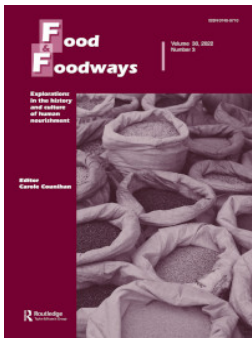
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Ordinary overflow: Food waste and the ethics of the refrigerator

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ABSTRACT

This article analyzes the role of the refrigerator in how food becomes waste in socio-material and ethico-cultural practices. The modern food refrigeration technologies and practices have extended food's useability time. They have transformed ordinary life by allowing households to store ample amounts of fresh food. However, this study suggests that fridges merit more attention not only in terms of reducing food waste, but in efforts to understand how food waste comes into being. This article draws from an analysis of qualitative interviews with ordinary people in Canada and Finland to show that refrigerators are important agents in the moral narrative of food waste: They provide a concrete space where food becomes waste, a justification for food becoming waste, and a material reference point through which people can talk about wider cultural patterns, moral norms, and ordinary ethical dilemmas tied to food waste. Technical devices such as refrigerators do not alone create or solve the problem of food waste, but they are relevant to the ethics of wasting food. Focusing on the fridge helps to show how human and non-human material worlds are entangled and how an overflowing fridge can structure, illustrate, facilitate, and contribute to human ethical conduct related to food waste in a significant way.

KEYWORDS

Food; waste; refrigerator; abundance; ethics

Prologue: An overflowing fridge

In the spring of 2019, I schedule an interview with Aaron, a university educated man in his late thirties. Aaron's income level is higher than average, and he lives in Ottawa, Canada, with his partner and two small children. The purpose of the interview is to discuss Aaron's everyday food consumption practices and views of food and eating. A day before the interview, I send Aaron a message and ask him to take a photo of the inside of his refrigerator and bring it with him to the interview. My aim is to use this photo to facilitate our discussion and get familiar with Aaron's eating habits. Aaron replies to my request with laughing emojis

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and comments that their fridge is usually overflowing. On the day of the interview, just before we are supposed to meet up, Aaron contacts me and notes that he will probably arrive at the agreed meeting place few minutes late, because ironically, he is having a breakfast with his partner in a nearby café, even though they have plenty of food in their house.

A little later in the interview, we start our discussion by looking at the photo that Aaron has taken of his refrigerator. Aaron goes through the food items one by one:

Butter, oils, dressings, some of the other sauces that are larger, little bit of wine, drinks, kids' juice, and that's a glass of milk because kids put stuff like that [in the fridge], jams, sauces, oils, marinades, yogurt, breakfast stuff, leftovers is here, cheese, eggs, cheese, cheese, cheese, milk bags down there, fruits and vegetables, fruits and vegetables and a little bit of the leftovers.

Aaron describes the overflowing state of his refrigerator as unfortunate. He says that the fridge is "not always quite that extreme," yet it is "not unusual either." The overflowing refrigerator poses Aaron a familiar problem.

In the course of the interview, the troubles with the overflowing refrigerator resurface. I ask Aaron if there is something in their fridge right now that they most likely will not eat and which will probably end up being wasted. He mentions some tinned foods and condiments and says how he keeps "getting tempted to pull them out and chuck them." He then remembers one particular food item:

Oh yes, we have some Danish herring that is very tasty but it's just not part of our eating habits and we have it from our Danish friend who bought it so that we would have it for Christmas lunch. And it's sort of leftovers of Christmas lunch almost two years ago now.

Aaron notes that the herring is still, in principle, edible. "It's still there. It's fine. It's pickled herring. It's totally fine. It'll be fine seven years from now," he says. But as they do not normally eat herring and the time when they were supposed to eat it has already passed a long time ago, it is probable that it will eventually have to go.

The Danish herring is but one example of the tendency for food to silently stay and slowly decay in Aaron's refrigerator. Aaron notices that there are certain items, especially "the things that are in the lower half of my fridge," that would merit more attention. For example, "the lettuce wilts or the cucumber is juicy," because, in his words, "somehow" Aaron or his other family members "haven't gotten there." The food items tend to be forgotten and get lost in the overflowing fridge.

Detecting, clearing out and "chucking" the lost and forgotten food items is troubling for Aaron. He explains his unease:

We don't need to stockpile three different kinds of Asian pork marinades in order for that day that we want to use that one. At the same time I find it very annoying. I don't want to throw out that jar of that sauce because I don't want to have to buy a new one and waste what's there every time that we want to eat it. We do have a fairly wide variety of things that we eat, so we do have a fairly wide variety of sauces and stuff.

Some easily perishable food items are the trickiest to keep. "Lettuce is the worst in my mind," Aaron says. He finds it "odd" and "super frustrating" that they might overbuy and then eventually end up wasting many food items. Aaron gives an example of how they can overbuy by oversight, for instance when he and his partner both buy a box of arugula. "We now have two boxes of arugula. Go for the fresher one because it's tastier and then that [other] one is definitely going to rot and then we junk that. I find it odd," Aaron laments.

The problem of the overflowing refrigerator is reflective of a controversy between Aaron and his partner. It has been hard for Aaron to convince his partner to avoid "all of these overbuys on this, that, and the other thing." According to Aaron, his partner "will definitely demonstrate her preference for food just disappearing," implying that she does not participate in clearing out their fridge and keeping track of food that needs to be consumed. "If she didn't enjoy it, it just ends up being in there," Aaron notes. The task of clearing out the fridge, then, falls to Aaron. "I'm generally the one who clears it out, puts it in the compost, and cleans," he explains about the division of labor in his household. This also applies to the Danish herring. Aaron says that he does not have a plan for the herring, and that he most probably will "eventually clean out the fridge and throw it in the compost if it is not eaten."

Aaron does not think that his family is exceptional in their habit of wasting food. Quite the contrary, he connects his troubles to a wider cultural pattern:

We stockpile. We're not exceptional in that we stockpile a huge amount of food for the winter and another thing, I don't think we're exceptional either that we don't necessarily eat all of that food. However, that is a huge structural feature of this habit of stockpiling and dumping.

The tendency to stockpile and dump food is not just their individual bad habit, but a part of the wider lifestyle that Aaron observes in society where he lives.

Introduction: What about the fridge?

Food waste is one of the most pivotal social, ecological, and ethical challenges in the contemporary world. Never before in human history has so

much food been produced or wasted. In affluent societies, most food is wasted on the household level (Lang and Heasman 2015). Public debates tend to blame individual consumers for the food waste problem (Evans 2011). However, even at the household level, food waste is not only a matter of individual human action. The lengthy description of my discussion with Aaron highlights that his overflowing refrigerator has a central role in how food becomes waste in his household. In this article, I use it as a starting point to analyze the role of the refrigerator in how food becomes waste in socio-material and ethico-cultural practices.

With food becoming waste, I refer to “the recognition that matter becomes waste, or becomes food, within situations of doing” (Watson and Meah 2012, 104). This notion highlights the material, processual, temporal, and situational character of food waste. In recent decade or so, food waste has started to draw increasing research attention. Scholars have applied theoretical insights from STS studies, new materialism, actor-network theory, and feminist care ethics (e.g. Puig de la Bellacasa 2017; Hawkins 2006; Latour 2005) to explore what happens in the moments when food matter becomes waste and pay attention to the manifold objects, materials, and features that take part in this process.

So far, refrigerators have not been given a central role in food waste research. However, previous research points to several other issues that underline their significance. For example, some studies have highlighted that one important aspect of the process by which food turns to waste is food’s own material properties. Even though food matter is at the heart of the mundane, routinized practice of eating that humans do every day, its materiality escapes foregone conclusions. Mattila and others note that “food is an active agent existing in constant flux with no predefined rigid properties.” (Mattila et al. 2019, 1623; Roe 2006; Bennett 2010). Yet as researchers on food waste have also described, food has fluid properties that affect how it becomes waste. Food, like Aaron’s lettuce, tends to wilt, decay, and go bad, and has “an ‘unforgiving’ timeframe” (Mattila et al. 2019, 1620). With its tendency to spoil, food is an intriguing example of vibrant matter (Bennett 2010).

Further, studies have shown that food waste happens in the social organization and routine patterns of daily life (Evans 2014). Date labels and use-by dates serve as mediators between consumers, the food industry, and food governance; they reveal social concerns over food’s safety and goodness (Milne 2012; Watson and Meah 2012). Bins and composts are central liminal agents that tie domestic food waste to wider infrastructures of waste management (Metcalf et al. 2012) and sometimes to earthworms, mold, and dirt (Abrahamsson and Bertoni 2014). Furthermore, researchers have noted that issues as varied as temporality (Mattila et al. 2019), retail (Alhonnoro and Norrgrann 2018), valuation (Lehtonen and Pyyhtinen

2020), and care (Koskinen et al. 2018) play a significant role in how food becomes waste.

But what about the pickled herring that has been sitting in Aaron's fridge for more than a year and is still edible? The herring itself does not have the capacity to avoid going bad in a moderate timeframe. Instead, preservation and storage methods enable the herring to taste "fine seven years from now." Jars, pots, containers, and wrappings extend food's useability for humans. According to Hawkins, talking about food and waste necessitates talk about "the brute materiality of packaging" (Hawkins 2012, 66). In her words, the active role of food packaging "as both a market device and major waste problem" (Hawkins 2012, 66) is often left unnoticed in food waste discussions. However, its role is pivotal, as packing enables food storage, transportation, and preservation, extends food's biological life, and facilitates its exchange.¹

Like packaging, refrigerators, too, protect food from spoiling. The modern food refrigeration technologies and practices have extended food's useability time and allowed a greater distance between field and fork (Finstad 2013; Watkins 2008; Garnett and Jackson 2007). But might these devices also contribute to wasting food? This potential has been briefly noted in some recent new materialist analyses of food waste (e.g. Mattila et al. 2019; Koskinen et al. 2018; Evans 2014; see also Garnett and Jackson 2007). However, fridges have not occupied a central role in analyses of how food becomes waste. This might be because they are seen unequivocally as means of streamlining household economy and reducing food waste (Scheire 2015). According to Rees, a common perception is that refrigerator "ultimately serves one purpose: It is a container that keeps food fresh. [...] A refrigerator that does not keep food fresh is completely worthless" (Rees 2015, 3). It often escapes remark that refrigerators can themselves contribute to the process of food becoming waste (Rees 2015, 69). In the analysis that follows, I suggest that fridges merit more attention not only in terms of reducing food waste, but in efforts to understand how food waste comes into being.

Methodology: Studying the fridge

In this article, I draw from an analysis of qualitative interviews with ordinary people in Canada and Finland in order to understand the role of the refrigerator in the ethics of food waste.² I approach ethics as a situational and socially produced conduct that is inherent in human speech and action. People tend to justify what they think and do on a scale of right and wrong, or good and bad, but often in inconsistent or disparate ways that follow situational rather than abstract, universal logics (Ezzy 2016; Sayer 2011; Lambek 2010). Ethical perspective-taking is mostly

implicit but can become explicit in the situations that require explanation of routines and practices. Qualitative interviews provide a way to generate such situations.

By ordinary people, I mean people who are not necessarily invested in food-related social action or do not primarily identify as “ethical consumers”. The participants were recruited via local social media sites and community events, snowball sampling and purposive sampling to gain informants from various gender and age groups. In spring 2019, I interviewed Aaron and 23 other people living in one neighborhood in Ottawa, Canada, about their everyday food choices and practices, including questions concerning food waste. At the time, the interviewees were between 25 and 79 years old. The majority (15 interviewees) were women and had European origins (15 interviewees). Most of them had a mid- or higher-level income. As with Aaron, I asked these interviewees to bring a photo of their refrigerator to the interview situation. My aim was to utilize these photos as probes to get the conversation started. However, as my discussion with Aaron above already hints, these photos turned out to be highly insightful.

In addition, in late 2019 and early 2020, I conducted five group interviews with eighteen people in Helsinki, Finland. The purpose of these interviews was to discuss the same general themes as in the Canadian sample in a group context and another national setting. These interviewees were between 25 and 84 years old at the time of interview. The majority (12 interviewees) were women and most of them had mid-level income. Due to the character of group interviews, these interviewees focused more on outlining and developing general views and discourses in dialogue with others, and less on their personal lives as individuals (Hennink 2014). These interviewees were not asked to bring a photo of their refrigerator to the interview. However, their fridges, too, occasionally popped up when they talked about food and eating.³

Due to the differences between the two data sets, I utilize these group interviews as a secondary material that supports and supplements the findings from the Canadian interviews. Analysis of both data sets did not justify comparison between the two countries.⁴ It showed that while in different parts of the world there are differences in fridges and consumer cultures surrounding them (Rees 2015, 2–3), many issues resonate in both contexts. Both Canada and Finland are affluent societies, where most food waste occurs on a household level, and where the abundance of food poses ethical questions for people in various income groups (Salonen 2021).

In the analysis, I treated the interviews as efforts to articulate ethical dilemmas related to food waste. I started the analysis with inductive coding, a bottom-up approach where codes derive from the data, not from preconceived theory. Following recent social scientific and new materialist research on food waste and adhering to the notion that material objects

can facilitate and empower human ethical conduct (Pyyhtinen 2014; Coole and Frost 2010), I then focused particularly on the nonhuman agents that my interviewees talked about in relation to food waste. At this point, the refrigerator started to repeatedly appear in my code list in relation to various food waste related situations. Importantly, refrigerators turned out to be important agents in the moral narrative of food waste: They provide a concrete space where food becomes waste, a justification for food becoming waste, and a material reference point through which the interviewees talked about wider cultural patterns, moral norms, and ordinary ethical dilemmas tied to food consumption.

In the following sections, I bring the accounts given by Aaron and my other interviewees into dialogue with previous social scientific and new materialist research on food waste in order to provide a more comprehensive account of the manifold role of the refrigerator in the process by which food becomes waste and in my interviewees' situational ethical accounts of this process. First, I consider refrigerators as central nonhuman agents that contribute to how food waste comes into being. I then turn to consider them in relation to humans, food environment, and consumer culture within this process. Toward the end, I examine the manifold and ambivalent norms and moral concerns that surround the question of the overflowing fridge.⁵

Lost in the fridge

Time is a crucial factor in the process by which food becomes waste (Mattila et al. 2019). Refrigerators have an active role in slowing down this process (Rees 2015). By altering food's material properties, cold storing food slows down its inevitable decay, giving human consumers more time to deal with the food. According to Mattila and others "domestic technologies enable consumers to save and shift time, thus transforming self-prepared frozen leftover food into convenience food and allowing the temporal coordination of daily lives" (Mattila et al. 2019, 1638).

However, at the same time, refrigerator also contributes to the process by which food turns into waste. To use Evans' words, they serve as "the coffins of decay" that carry "disregarded food towards the bin" (Evans 2014, 69). As my interview with Aaron illustrates, food is often lost in the overflowing fridge, where it moves toward being wasted. This makes fridges crucial temporospatial features in how food becomes waste. Evans uses the term "gap" to describe the phase where food is placed in the fridge and is not used, but not yet wasted, either (Evans 2014, 51–61). Food enters the gap when it becomes surplus to the household requirements. Being placed in the gap does not necessitate food turning into waste, but it opens up the potential for food to become waste.

Even though the decay process can be slowed down in the fridge, it does not stop altogether. Koskinen and others note that food items live an active life inside the fridge and, following their nature, move toward a stage where they are no longer edible (Koskinen et al. 2018, 18). But in as much as fridges can slow down decaying, they can also foster the process of food becoming waste by bringing a single food item in relation to other food items. The arugula in Aaron's fridge becomes excess as he or his partner buy more of the same kind. Following Evans, this is the slip from "surplus" to "excess" that marks the point at which food is no longer food, and it is sent in the direction of the waste stream (Evans 2014, 65).

One of the key features by which fridges contribute to food waste is that in them, food tends to get lost. My interviewees gave vivid descriptions of how and why foodstuffs disappear in the fridge. One explains that he buys sour cream for certain dishes that only require half the pack. The other half "just sits there after. Two weeks later you realize it's turned bad or it's past its due date." Another interviewee faces similar issues:

If we remember exactly everything that's in the fridge, "Okay well because we didn't cook tonight, we have to freeze this now." Sometimes you don't, right? Sometimes you get to the back of the fridge and you're like, "Oh, I forgot this. It's gross. It's soggy. It's growing feet." You know?

Fridges are both temporally and spatially relevant for food waste. There are certain spots, especially in the back or at the bottom of the fridge, where food likely disappears. The vegetable drawer is a particularly tricky place. An interviewee has noticed that "sometimes we do let a lot of food go to waste where it's at the bottom of the drawer and I just forgot that it's there and I just never get around to cooking it." Another interviewee describes vegetable drawers as "dangerous." Similarly, a third one curses:

The vegetable drawer sucks because it's too hard to see everything in it and little baggies of things get in the back. Lemons and limes sometimes you need a lot of and sometimes you don't need and it's hard to pay attention to those kinds of things. Little bags of small vegetables are usually things because they end up in the bottom and then you don't realize that they're there.

The drawers that are supposed to keep food from spoiling also obscure foods from human eyes.

Some of the interviewees tried to avoid losing food in the fridge, for example, by keeping the food that needs to be used immediately in the front part of the fridge. An interviewee emphasizes the art of organizing: "I try to be really aware of where the food is. It's all organized now. We've got special bins. This is the meat bin. This is the sauce bin. So I know exactly where to look. It won't get lost." However, not all the interviewees found it easy to keep their fridge in order. The lost items were sometimes revealed only once they started to clear and clean the fridge. An

interviewee had recently cleared her fridge to make space for other foods for a party she was having. In order to find room for more food she had to throw out a lot of food. In her words, “There was a lot of things in there that weren’t in good shape,” which she decided to “just purge and replace with some fresh stuff.” By keeping the food out of sight, the refrigerator participates in the process by which food turns into waste. The refrigerator provides a context and reason for food waste. The appliance itself, and its features, are narrated as a significant part of the situations where the ethically problematic process of food becoming waste occurs.

Clearing the fridge

The tendency of the refrigerator to hide food from human eye is entangled with human action. People sometimes actively “forget” food in the fridge in order to postpone the morally charged act of throwing food in the bin (Evans 2014, 53). One of my interviewees tells me about leftover soup that has been in his fridge “for too long.” The man assures me that he will throw the soup out later that day. “We just have to come across it in the refrigerator,” he explains. We then enter into a stumbling discussion of why it might be that he still has the soup even though he is sure it is no longer edible:

Interviewer: When did you realize that you’re not going to eat that soup, that it’s going to have to go?

Interviewee: Good question. A few days ago, or a week ago. I didn’t make it this weekend. I made it two weekends ago and we ate most of it and then there was maybe 500 milliliters left. (Laughs) Then I ate half of that and then the other half is in the fridge. So I guess it must’ve been a week and a half that it’s been there. Is that what you mean or do you want to know when we knew...?

Interviewer: When did you realize that it’s going to go...?

Interviewee: Yeah, a week and a half. I think psychologically for some reason we’re not putting it away or something. It’s true, why didn’t we just throw it away?

The example illustrates how fridges and other temporospatial devices help humans to postpone the morally suspect act of binning. Another interviewee articulates this extending feature more explicitly than the man above when she talks about her freezer. She calls her freezer “an eternity archive”: Once she tosses food there, it stays there almost endlessly. Soon she does not remember what she has put in her freezer, and the food might sit there for years. At some point she starts to consider those foods too risky to eat. At that point, this risk relieves her from the guilt of wasting food.

Both refrigerator and food waste are tied to human-human relations. Aaron’s account in the beginning of this article highlights how he and his

partner take different approaches to food waste. A conversation with a couple in their thirties illustrates similar negotiations between family members:

Interviewee 1: There's a bit of cream cheese in the back of the fridge that we're definitely not going to eat. Yeah, there's that skyr stuff that's probably ready to go. So those are in there but why keep them?

Interviewee 2: Lazy. I'm hoping you'll do it.

Interviewee 1: Well no, but there are also times...it's kind of like hoarding anything where there will be a moment. If we just needed a little bit of that something and we'd thrown it out, so you might as well keep it. It's like this deferred sort of, I don't know, optimism. I don't know. It might be useful. You want to avoid regretting throwing it out but then it gets to the point where it's clearly gross and needs to go. It's simple, it goes. [...] There could be some kind of a subconscious strategy there where you're like, "I know I'm going to throw that out but it's still good food so I'm not."

Interviewee 2: "Maybe [Interviewee 1] will eat it." (Laughs)

Interviewee 1: "I'll wait until it's rotten and then I'm morally clean." (Laughs)

Here, the interviewees talk in two registers: While the first interviewee speaks about the psychological factors and his internal navigation of the ethics of the inevitable act of throwing food away from the fridge, the second interviewee refers to the negotiation around social relations and responsibilities of taking care of the uncomfortable act of throwing away food. Both registers involve two aspects. First, there is the dimension of "deferred optimism," that is, a recourse to the possibility that the food is used for some purpose or that another member of the household might consume it. Second, both interviewees relocate the morally suspicious act of wasting food from their immediate area of responsibility; one by postponing it to another time, another by assigning it to another person. Further, the refrigerator is a space that ties these two arguments together in time: The "deferred optimism" of letting food stand in the fridge while waiting potential use for it eventually turns into the point where a person is "morally clean" to waste food. The refrigerator is an important facet in this ethically charged process.

As mentioned above, organizing the fridge so that food does not get lost is one way to prevent food waste. However, this organization can cause tensions in a family setting. An interviewee says that she and her partner disagree on "how to organize the fridge." Her partner "likes everything to be in a certain section," while she follows the principle "the more perishable, the farther front." This discrepancy results in food waste in their household, because "whenever he organizes the fridge, stuff goes bad because I don't realize there's this perishable stuff that's in this category

in the back.” In addition to organizing the fridge, having many people consuming food items from same fridge also causes difficulties that can result in food waste. This same woman explains that in their family of two adults and one child, it is hard to keep track on the food flows: “It’s really hard to remember everything that you have because it changes all the time. You don’t know who ate what. [If] you don’t see something it’s not like, “Oh, it’s gone.” You just assume someone ate it but then you don’t realize it’s in the back of the fridge.” How food becomes waste is influenced by constant negotiations between people living in same household and using the same refrigerator.

Another interviewee explains how food used to spoil in his fridge when he was still living with his ex-girlfriend. This happened despite, or even due to, their efforts to engage in healthy and environmentally sustainable eating habits. They often used to have “a damn lot of” carrots, potatoes, kale, and other vegetables in their fridge. The man explains that they would buy those foods with “a good intention,” but then ended up cooking less: “Then you want something totally different the next day or in a couple of days and then they just stay there. And then, perhaps you already think that these are not so good anymore, and you buy more. And then they just stay there (laughs).” Here, food waste happens in the refrigerator as a consequence of trying and failing to meet the ideals of good consumption, including healthiness, environmental sustainability, proper organization of daily food routines, and taste preferences.

In food-related household tasks, gender makes a difference (e.g. Cairns and Johnston 2015). Koskinen et al. (2018, 25) note that in their study, the commitment to decrease food waste through care practices was strongly divided along traditional gender lines: Women were responsible for carrying out, maintaining, developing, and sharing food waste reduction practices, while in most cases, men did not participate in these efforts or even contributed to generating food waste, for example, by cooking disproportionate amounts of food. The practices related to food waste were gendered in this study, too, even if not as categorically. Some of the female interviewees noted that their male partners did not express interest in issues related to food waste. One example is the abovementioned incident where a female interviewee was cleaning the fridge to make room for more food. When I asked whether her male partner participates in this cleaning, the woman says laughingly that “He doesn’t notice. He doesn’t even venture into the fruit and vegetable basket that much.”

Some female interviewees lamented their male partner’s lack of initiative in maintaining proper food flow in the fridge. An interviewee complains about her partner:

He pisses me off because I'll put stuff in the fridge to be eaten later and then I travel unexpectedly and I come back and now the food's bad. "You didn't eat that?" "Oh I forgot it was there." Drives me nuts.

However, as the example given by Aaron already noted, some male interviewees take an active role in negotiating with their female partners about food and waste. A female interviewee tells me that both she and her male partner are "concerned about food waste" and "trying to figure out ways to not waste so much food." However, she says that her partner is "very particular about wasting food" and "gets very upset" if food is wasted, even to the degree where they have had arguments about the issue.

Further, men were sometimes called to do the dirty work of clearing the fridge and throwing away spoiled food. Above, Aaron described how his partner leaves him the job of clearing the fridge. Similarly, another male interviewee says that when it comes to cleaning and disposing of food, the division of labor between him and his female partner is "70 percent me, 30 percent her." He explains why this is so: "She tries to push the responsibility to me. Because it's moldy, right? It smells, slimy, sticky, whatever, right? So I'm used to it, so I would just do it." In these accounts, food is wasted in entangled relations between humans and their refrigerators; these relations are shaped by socialized and gendered divisions and navigations of responsibility between household members.

Filling the fridge

Food waste reflects the inability to fully control the overflow of food in the material and social entanglements around the fridge. But how does so much food end up in the fridge? In order to understand how food becomes waste it is important to pay attention to cultural and structural factors, or what Aaron described as "stockpiling" and "overbuys on this, that, and the other thing."

Households purchase more food than they consume. This is evident from the amounts they waste. However, studies show that more is at stake than just indifference or poor planning. Instead, "observable patterns of food consumption can be viewed as the outcome of the various demands that are placed on the practice of domestic food provisioning including the differing tastes of family members, household budgets, calorific intake, and the imperative to eat properly" (Evans 2014, 44–45). With these manifold moral and social entanglements, it is not enough to state that food waste is simply a result of irresponsible consumer behavior.

In order to broaden the discussion from individual responsibility, it is instructive to expand the discourse to consider the food environment in which consumers overbuy and stockpile their refrigerators. Alhonnoro and Norrgrann use explicitly moral vocabulary of gluttony when they analyze

the drivers of waste-producing, excessive consumption. Breaking away from the reading of gluttony as individual sin, they turn to the definition by Caywood and Langrehr, who “define gluttony as encouraging excessive or lavish eating, thus moving away from purely individual appetite to questions of outside influence” (Alhonnoro and Norrgrann 2018, 79–80; Caywood and Langrehr 1990). This definition allows them to analyze the role of retail in driving over consumption. In what they call retail gluttony, “a gluttonous grocery retailer contributes both to individual gluttony, by tempting customers into lavish eating, and to gluttony in itself, by building displays of enticing products in an amplitude that exceeds the amount consumed” (Alhonnoro and Norrgrann 2018, 80). According to Alhonnoro and Norrgrann, retail gluttony is a relational effect that arises from “abundance, allurements, and apposition” (Alhonnoro and Norrgrann 2018, 92), that is; from retail sites that are built to attract consumers to buy more food via abundant variety of choices, sales and other promoting strategies, and perfect-looking products. I use these perspectives to discuss how people navigate the cultural push to fill their fridges with food.

To start with abundance, the ways in which the interviewees describe their everyday food purchasing practices underlines the vast variety of options. One interviewee, for example, names five different stores that she regularly visits to do grocery shopping, depending on whether she wants to shop conveniently near her house, buy bulk items, or purchase specialty products. Another interviewee, in turn, gives an example of the wider selection of individual products: “Now you go to a grocery store and there’s like four different brands of plain, ordinary peanut butter.” There seems to be almost infinite variety of options of what to eat and where to buy food, which can lead to overstocking the refrigerator.

To continue with allurements, some interviewees paid close attention to how grocery stores appeal to their customers to make them buy more food. An interviewee laments that supermarkets are “pushing consumption.” Another one gives an example of how they do this. At some point, this interviewee started noticing that grocery store baskets were getting bigger. According to the interviewee, this is “Because they want you to put more stuff in them. You needed the one can of fruit cocktail, the next thing you know you’re buying six cans of fruit cocktail.” Some interviewees try to avoid these temptations, while some others enjoy following sales. An interviewee says that she has “almost a mental health issue of frugality. I don’t know why. If something is on sale, I have to buy it and if it’s not I never [will].” She has a second fridge in the basement of her house, which she uses when her kitchen refrigerator is “overstocked.” The woman says that this habit of following sales runs in her family and she associates it with pleasant memories. Thus, even though she acknowledges that there are problematic features in her habit, she also notices that it gives her

pleasure: “It’s fun to figure out what the best deal is,” she says and refers to this habit as “almost like it’s part of entertainment too.”

Another part of the culture that produces food waste is apposition, a concept that describes “relationalities between products that are seemingly the same” (Alhonnoro and Norrgrann 2018, 91). In order to avoid waste and foster food circulation on the retail level, fresh stock is often kept under the older products. However, some consumers know about this strategy, and search underneath for food items that would last longer in their households. An interviewee gives an example of this search. He describes himself as picky and choosy when doing his groceries:

When I go to the store to buy apples, some people will just pick apples up. I don’t just pick apples up. I got to look at the apples, make sure there’s no bruise, there’s none of those things on it.

He gives similar examples of choosing other products and then concludes:

So again, everything that I buy like meat, fruit, and vegetables I just don’t pick up and throw it in my basket. I pick up, I check, and if visually it’s not appealing to my eyes, it’s going back.

For the interviewee, this practice is a way to ensure that he does not end up wasting food in his own household. His behavior is not careless and indulgent but related to the context, where stores actively allure consumers to overbuy at the expense of food quality. The interviewee’s pickiness can be interpreted as resistance to the culture of hoarding that results in an overflowing fridge. Yet, this practice leads to food waste on the retail level (Alhonnoro and Norrgrann 2018, 92).

While it is too simplistic to blame individual consumers for food waste, people’s accountability for waste should not be underestimated. Elements of moral concern in the interviews point to the role of consumers as representatives of a wider culture of overconsumption. As Aaron noted in the discussion that opened this article, the “habit of stockpiling and dumping” is “a huge structural feature” of many households. Similarly, another interviewee connects food waste to food culture: in his view, the cultural pattern of purchasing food means that “you go once a week to a big grocery,” where “you buy what you think you’re going to eat during the week.” Further, “then you have all that food in a giant fridge that we have in North America and then you forget about things. You forget that you have this, it’s past its due date, it’s rotting in the fridge.” While he says that he does feel guilty about this habit, he feels that “it’s partly just the structure of how we deal with food in North America and it’s conducive to wasting a lot of food.”⁶ It is important to avoid moralist blame that shifts the responsibility for food waste onto the shoulders of individual consumers. Equally, it is important not to underplay the moral dilemmas

that consumers face when navigating the “gluttonous” food environment that allures them to fill their fridges.

The norm of the full fridge

The discussion so far shows that for the people whom I interviewed abundance is the context of everyday food consumption and food waste. For ordinary people in affluent societies, moral evaluations of this abundant overflow contain both joys and troubles. On the one hand, the overflow is a source persistent anxiety. One of my interviewees uses the word “terrible” to describe his overpacked freezer. When I ask him whether he thinks this terribleness is due to lack of space, he replies: “Yeah but unfortunately I think if I had more space I would just fill it.” Here, the overflow is presented as ethically suspect. On the other hand, people also connect the overflowing fridge to ideals of good food consumption. Some of the interviewees introduced their fridges by emphasizing words that refer to great quantities and then associated these quantities to ideals such as the willingness, ability, and effort to cook “from scratch” or feed “tons of fruits and vegetables” to their children. Here, then, the overflow is associated with issues that are generally considered ethical and appreciated. But whether considered a trouble or a joy, the overflowing fridge is presented as an unescapable fact.

But does this mean that in contemporary, waste-producing consumer culture, all fridges are always overflowing? Not quite. There is a crack in the data that hints at the normativity of the overflowing fridge: While all fridges were not always full, only full fridges were considered worth presenting.

Some of the interviewees mentioned that their fridge went through temporal cycles of fullness and emptiness. As an example, an interviewee shows me a photo of a clean fridge with plenty of food that is placed in good order. When asked whether his fridge usually looks the same as in the photo, the man replies: “Maybe it’ll be like that for two weeks and then for the other two weeks it can be pretty empty.” The interviewee says that his fridge is occasionally empty because he wants to eat food fresh. However, as our discussion proceeds, it turns out that there is also another reason for occasional emptiness in his fridge. The interviewee has left “a regular job” and “normal life” to run a business that is not paying well. Thus, lately, he has been trying to save money by cutting down his food expenses.

The point to take from this example is that regardless of temporal changes in the course of everyday life, the full fridge represents an ideal of how a proper fridge should look. The temporal changes are due both to food’s materiality and tendency to decay and to other factors such as

income that influence people's ability to purchase food in large quantities. Refrigerators are themselves signs of the historically quite recent growth in prosperity, with its impact on diets and lifestyles (Scheire 2015; Rees 2015, 3–4). The full fridge marks a particular sign of prosperity, in contrast to an empty one or no fridge at all, which is “a sign of food insecurity for people who don't know from where their next meal will come” (Rees 2015, 6). While the overflowing fridge is a norm, it is not representative of all households or the fluctuation of everyday life.

The norm of the full fridge is evident from those cases where interviewees did not respond to the request to bring a photo of their fridge to the interview. An empty fridge is not considered worth showing. An interviewee explains that he did not bother taking a photo because his fridge was close to empty. “There was a quart of milk, some beets, apples and vegetables,” he summarizes its content. This example underlines that the moral function of the fridge is to illustrate an abundance of food.

The next citation further exemplifies the ambivalence of the norm of full fridge. An interviewee is puzzled by the size of her food preservation appliances. She says:

I need my big freezer. I have two of them in the basement but a smaller fridge. I have a smaller fridge now and I think even if I had one that was about 5 cm shorter on either side, it would almost be better for me. It's like the plate analogy. I eat on a small plate because it looks full and you feel fuller when you finish it. Whereas if you fill the same amount of food on a bigger plate, it looks like you're depriving yourself. I think if your fridge looks fuller, you feel like you've got enough food.

Currently the interviewee's food stocks are abundant. “My cupboards are so full right now that I could probably outlast a month-long famine,” she says. When I ask whether this readiness is due to security, she says that “Some of it is about security but some of it is just it doesn't feel right to not be prepared.” She continues:

So it's that whole thing, you have to treat your guests and you have to be prepared to serve your guests and you have to offer them things and you have to be ready for anything. I've been programmed. I don't think there's any escaping that. I could not cope. My cupboards are very small but if I had less space, I don't know what I would do. Where would I put the extra food? Yeah, problematic.

For this interviewee, the full fridge is deeply entwined in her ideals of serving food to others. Her ideals of hospitality necessitate that her fridge, freezer, and cupboards are filled with food. The norm of hospitality celebrates the overflowing refrigerator: There is, and should be, enough food to last beyond our physical needs, to cater our tastes and preferences, and to allow us to care for others, to show hospitality and generosity. But abundance has its downside. It is inevitably accompanied by surplus, which is geared to excess and waste.

Conclusions: Ethics of the fridge

In the concluding chapter of the book *Refrigerator*, Rees invites his readers to envision the smart refrigerators of the future:

Imagine a refrigerator hooked up to the Internet, that scans the food inside so that it knows when you run out of something essential or even when your perishable foods reach their expiration dates. You could also use this kind of refrigerator to send shopping lists to your mobile phone or even send an email, just like you would on any home computer. (Rees 2015, 102–103)

Today, many of us can already monitor our refrigerators with technological devices. For example, we can take a photo of our refrigerator with our mobile phones and bring it with us to a grocery store or to a food-related interview. Perhaps doing so would make us more cognizant of our food stocks and eating patterns. Would that help to diminish food waste?

Toward the end of the interview, Aaron takes up this issue. In his view, the habit of stockpiling and wasting food cannot be solved solely by technological means. He sounds pessimistic: “It’s not going to change if we have fridge that is photographed or like a video so we can see what’s in our fridge.” In his view, technical appliances that monitor food flows in individual households are “not the full solution at all,” since the habit of stockpiling is so deeply rooted in contemporary consumer cultures. Aaron believes such technical solutions would aggravate class differences since they “generally require a huge amount of outlay that most people don’t have.” For those who can afford them, this technology does not necessarily reduce consumption; in Aaron’s words, it “leads to more glut, leads to more spending, more consumption, and more waste.” According to Aaron, challenging the norm of the overflowing fridge would require a deep cultural, economic, and ethical transformation.

Technical devices such as refrigerators do not alone produce food waste. Neither do they provide a sole solution to the problem of food waste. However, they are relevant to the ethics of food waste. The refrigerator is instructive about how people live their lives amid abundance of food and navigate and negotiate the problem of waste. For most contemporary consumers, refrigerator is an “ordinary and unremarkable appliance” or “ubiquitous backdrop” (Watkins 2008, ii) that does not call undue attention to itself. However, its effects are remarkable. The refrigerator has only recently transformed ordinary life by allowing households to store abundant amounts of fresh food (Freidberg 2010; Watkins 2008). My study highlights that in addition to preserving food, in contemporary affluent societies, refrigerators also contribute to food waste in a significant way. The potential of food to become waste is both curbed and actualized via refrigerators and other appliances that expand the timeframe of food’s edibility and hide food from human view.

Importantly, bringing the refrigerator into the analysis, does *not* have to mean *decentering* humans from the process where food becomes food. Here, I follow Giraud (2019, 155) who suggests that displacing human from the center of ethical analysis “can have the consequence not of fostering ethical responsibility [...] but of permanently delaying it for fear of reinstating humans as privileged agents.” Instead of undermining or neglecting the moral dilemmas that humans face regarding food waste, focusing on the fridge aids to show how human and non-human material worlds are entangled and how an overflowing fridge can structure, illustrate, facilitate, and contribute to human ethical conduct in a significant way.

Notes

1. Food packaging provides an interesting extension to the discussion of food waste, because it has a dual role as both preventor of food waste and as waste in itself. Plastic, foil, foam, and the other non-food materials that surround food items try, in their part, to prevent food from spoiling (Hawkins 2012, 69). However, especially in recent decades, food packaging has become the apex of the waste problem.
2. The study is part of a wider project that aims to understand ethics of food consumption in an affluent world (Salonen 2018, 2019, 2020, 2021). All participants gave their informed consent to participate in the study in writing prior to the commencement of the study.
3. Group interviews were conducted in Finnish; translations of citations from them are my own.
4. The individual and group interviews did not allow strict comparison, since these two interview methods produce different data: Individual interviews allow to discuss in-depth about the interlocutors' life, while group interviews help to capture justifications that are utilised in broader social contexts. Eliciting country specific characteristics and differences across countries would require more research with directly comparable data.
5. In addition to refrigerators, in the following chapters, I use some examples of other temporospatial devices such as freezers and cupboards when they serve similar purposes and highlight same patterns as refrigerators. For a more detailed analysis of freezers, see Hand and Shove (2007).
6. See Rees (2015, 2–3; 30–37) for discussion on how refrigerators vary in size and how size influences lifestyles. This informant referred to North American food culture, but similar patterns were mentioned by Finnish interviewees.

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