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Waste Not, Want Not

Suboptimal Food and the Grocery Shopping Practices of Sustainably-Minded Consumers

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Abstract: Food waste is becoming an increasingly visible environmental issue with estimations claiming that up to one third of all food produced for human consumption is wasted. Grocery stores selling suboptimal food provide consumers the opportunity to purchase food that would otherwise go to waste at a decreased price, with sustainably-minded consumers being more likely than other consumer groups to purchase it. This study aims at investigating how suboptimal food enters the shopping practices of sustainably-minded consumers. The current study utilizes a practice theory approach to gain deeper insights into the shopping practices of these consumers and how suboptimal food features there. By using practice theory the importance of the elements – materials, competences, and meanings – making up the grocery shopping practices can be analyzed. The findings are based on a qualitative study conducted using participant observation in the form of go-alongs, and in-depth interviews. The findings highlight the importance of how suboptimal food is approached, pre-trip practices, and in-store practices for the purchases of suboptimal food. Furthermore, the study highlights the need for competences when it comes to purchases of suboptimal food and confidence in those competences. It also highlights the importance of the interplay between the elements of practices for suboptimal food to be a recurring and valued part of grocery shopping practices.

Keywords: suboptimal food, grocery shopping, shopping practices, practice theory, food waste

Introduction

Food waste is increasingly viewed as a global environmental and economic problem (Nixon, 2015). Its negative aspects and the increasing global awareness of it along with that related to the impact of the global food systems (see e.g. McMichael, Powles, Butler, & Uauy, 2007; Hall, Guo, Dore, & Chow, 2009; Hoolohan, Berners-Lee, McKinstry-West, & Hewitt, 2013) have brought the topic of food waste into academic focus. Studies have focused on everything from impacts on sustainability (Buzby & Hyman, 2012) to consumer behavior connected to food waste (Evans, 2012a, 2012b; Rohm et al., 2017) to the agency of things used in connection to it (Metcalfe et al., 2013). United Nations' Food and Agriculture Organization (FAO) estimates that around one third of all produced food aimed at human consumption is lost along the supply chain or wasted (Gustavsson, Cederberg, Sonesson, van Otterdijk, & Meybeck, 2011). Something which may contribute to the interest in the topic given the effects this may have on sustainability and food security. However, the interest in food waste nowadays seems to not be limited to academia but can be seen in everyday life in Sweden. Swedish start-up company Karma allows consumers to purchase what the company calls 'unsold food' for half the price via its mobile application from restaurants, cafés, and grocery stores by acting as a middle man in the transaction (Karma, 2019). Another Swedish company, Matsmart, sells products via its website at

discounts that have been the result of actions such as close or passed best-before dates or overproduction (Matsmart, 2019). Swedish grocery chain Willys has its initiative 'Svinnsmart' to decrease food waste on several levels; at the retail level the company utilizes price reductions on food which no longer can be considered optimal by the company (Willys AB, 2019). Another Swedish grocery chain, ICA, collaborates with Karma to sell less than optimal food at reduced prices, and with Food2Change to see so that food that would have gone to waste goes to less affluent families (ICA Gruppen, 2017). Furthermore, in the fall of 2018 Sveriges Television AB (SVT), the Swedish national public television broadcaster, aired its own television show called 'Maträddarna' ('The Food Rescuers') which wanted to shine a light on food waste (SVT, 2018).

The interest also stretches to governmental (Regeringen, 2018) and supranational levels (European Commission, 2015; United Nations, 2019a) with the United Nations' Sustainable Development Goals, and specifically the twelfth one focusing on "responsible consumption and production" (United Nations, 2019b) and goal 12.3 focusing specifically on food loss and food waste (FAO, 2016). Sustainable consumption itself is often associated with the definition given at the Oslo Symposium in 1994 (United Nations, 2015) however opinions diverge on how to succinctly define it in a way everyone can agree upon. What is clear though is that such consumption will have less of an impact on the environment and not exhaust the resources available. However, there seems to be a consensus on that it is something that ought to be done to a much larger extent than it is today for the sake of the planet. One area where there is room for improvement is in food where the attitudes toward sustainable consumption are increasing much faster than the actual behavior (Vermeir & Verbeke, 2006).

The increasing focus on food waste within academia in recent years elucidates the lack of a uniform definition of the term (Lebersorger & Schneider, 2011). Some confusion may also be attributed to the dictionary meaning of the word 'waste' since it may signify "refuse from places of human or animal habitation" (Waste, 2019) which is seemingly at odds with at least some definitions that state food waste to be edible; a word perhaps not closely linked with refuse as used above. Suboptimal food is another term used for potential food waste that is still edible by some scholars (Aschemann-Witzel, de Hooge, Amani, Bech-Larsen, & Oostindjer, 2015; Aschemann-Witzel, Giménez, & Ares, 2018; de Hooge, van Dulm, & van Trijp, 2018; do Carmo Stangherlin, de Barcellos, & Basso, 2018). De Hooge et al. (2017) define *suboptimal food* as products that deviate from normal or optimal products in three ways: variation in appearance standards such as size or weight, variation related to the date labelling such as nearing the best-before date, or variation in the packaging such as it can be dented. All without deviating in terms of the safety or intrinsic quality of the food in question (de Hooge et al., 2017). This definition also elucidates on the close connection to food waste since food falling under the suboptimal food category may be less attractive to consumers and is thus more likely to be thrown away. By being the less attractive option when compared to optimal food, suboptimal food runs the risk of not being included in people's shopping habits, or shopping practices.

The performance of practices is what generates consumption activities, such as grocery shopping, and thus makes up a crucial part of what needs to be understood about consumer behavior. Practice theory focuses not so much on the person doing something

but rather on what is being done; all attention is placed on the practice. A practice in this context is a behavior that over time has become routinized and consists of several interconnected elements (Reckwitz, 2002). Shove, Pantzar, and Watson (2012) break down practices into three simplified elements – materials, competences, and meanings – to elucidate what practices are made up of and how they may change. Since a practice is something routinized it is easy to direct attention to everyday mundane activities such as shopping and food consumption, something which is done by Sahakian and Wilhite (2014). Both types of activities contain sets of practices that are performed with such regularity by people that not much thought is needed to accurately perform them. Therefore, one may argue that there are ingrained qualities to such practices that may be hard to break and may act as impediments to developing more sustainable practices.

Much of the extant literature on food waste seems to be focused on the food waste generated by households (Delley & Brunner, 2018; Evans, 2012a, 2012b; Stancu, Haugaard, & Lähteenmäki, 2016) and while this is where much of the waste is created (Östergren et al., 2014) food waste is also created at the retail level of the supply chain due to action, or inaction, by both retailers and consumers (Aschemann-Witzel et al., 2018). As discussed by Aschemann-Witzel et al. (2018) consumers' in-store behavior can impact the food waste generated by stores but there seems to be a dearth of literature in regards to this, which may at least partially be explained by it being a fairly new research topic. Rohm et al. (2017) and de Hooge et al. (2017) suggest that sustainably-minded consumers are more likely to be accepting of suboptimal food than other consumer categories since they may more easily be able to see the sustainability impact of that food and be more committed to them, and thus be more likely to purchase the food. Since this type of consumer can be considered to be at the forefront of accepting suboptimal food as part of their everyday lives this study will focus on them. However, grocery shopping is a routinized practice suggesting it may be difficult to break old habits in order to create new ones which include suboptimal food despite a commitment to sustainability. The following study aims to delve deeper into how sustainably-minded consumers' grocery shopping practices interact with suboptimal food. Hence, the research question is: *How does suboptimal food enter the shopping practices of sustainably-minded consumers?* The study will focus on how suboptimal food is, and is not, incorporated into the shopping practices of sustainably-minded consumers utilizing practice theory.

To answer the research question an exploratory and qualitative study was conducted through participant observations, in the form of go-alongs to grocery stores, and in-depth interviews. The findings of the study provide insights into how suboptimal food can be incorporated into the shopping practices of the sustainably-minded consumer. Furthermore, the findings look in-depth at how elements of practices matter and how their interplay is crucial for practices to be performed, and how that comes to matter in the creation of new shopping practices. By doing so the study provides insights into how consumers, both sustainably-minded ones and those belonging to other consumer categories, may be introduced to suboptimal food and how it may become part of their shopping practices.

Theoretical Framework

The theoretical framework consists of three parts: suboptimal food, sustainable consumption, and practice theory. The first and second parts provide background and

context to the topic of the study while the third part provides an overview of the theory approach utilized in the study.

Suboptimal Food

Food waste and suboptimal food can be viewed as related terms. Due to the similarities one may draw upon the extant definitions for the former to gain a deeper understanding of the latter. There is, however, the issue of there being no agreed upon definition of food waste (Lebersorger & Schneider, 2011) but the existing definitions in use often have similarities. Food waste, according to FAO (2019), is discarding or utilizing food for non-food uses when the food is still safe and nutritious to ingest. Causes can range from fresh produce deviating from the norm in terms of appearance, to products being past or too close to the best-before dates for retailers and/or consumers, to unused or leftover food both in households and food establishments (FA0, 2019). Meanwhile the European Union funded FUSIONS (Östergren et al., 2014, p. 6) defines *food waste* as "any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)" thus providing a broader scope on food waste. This definition however causes some overlap between the terms 'food waste' and 'food loss' since it treats any food leaving the supply chain as food waste whereas FAO treats that particular food as food loss, something which is pointed out by Girotto, Alibardi, and Cossu (2015).

Suboptimal Food versus Food Waste

Buzby and Hyman's (2012) view on the topic approaches suboptimal food in that they consider food waste as being a subset to food loss and borrow a definition from American author Jonathan Bloom stating that "food waste occurs when an edible item goes unconsumed as a result of human action or inaction and is often the result of a decision made farm-to-fork by businesses, governments, and individual consumers" (Bloom, 2010, via Buzby & Hyman, 2012, p. 561). Bernstad Saraiva Schott and Andersson (2015) delineate two types of food waste; avoidable and unavoidable. Unavoidable food waste is the waste that is created while preparing food, such as crustacean shells (Bernstad Saraiva Schott & Andersson, 2015). Avoidable food waste can be narrowed down to "food products that were disposed of in edible condition" (Bernstad Saraiva Schott & Andersson, 2015, p. 220) such as bread that has gone stale. This latter type of food waste would fit with the suboptimal food discussed by Aschemann-Witzel et al. (2015), Aschemann-Witzel et al. (2018), de Hooge et al. (2018), and do Carmo Stangherlin et al. (2018) in that it may deviate from the norm for that particular product for some reason but is still safe to ingest. The emphasis of the food still being safe for consumption with the term 'suboptimal food' and its lack of the negative connotations connected to the term food waste arguably makes suboptimal food a more appealing choice when it comes selling to it to consumers. This argument can be viewed as, at least partly, supported by de Hooge et al.'s (2017) discussion of consumers preferring better looking food if given the choice since consumers thus ought to be attracted to a better sounding product as well. Suboptimal food acknowledges that the products are not up to the picture-perfect standard consumers have become accustomed to but it also highlights that it is still perfectly edible food but with a reduced price acting as a trade-off (Aschemann-Witzel, 2018; de Hooge et al.,

2018). The cosmetic specifications that turn a product from an optimal product into a suboptimal product can be divided into three categories: cosmetic imperfections (de Hooge et al., 2018), date labelling (de Hooge et al., 2017; Aschemann-Witzel, 2018), and damaged packaging (de Hooge et al. 2017). However, unlike discussions of food waste this perspective on suboptimal food does not treat the food as inevitable waste but more as something that needs to be understood differently in order to be able to capture the value that still exists in the food.

Consumer Behavior Connected to Suboptimal Food

Consumer behavior in connection to suboptimal food varies depending on location as indicated by Aschemann-Witzel et al. (2018), de Hooge et al. (2017), and Rohm et al. (2017). Consumers tend to be choosier in-store since there is a wider range of options and thus selecting the product that yields the best value for one's money is possible, such as deciding on the bread with the longest remaining time until its best-before date (de Hooge et al., 2017; Rohm et al., 2017). Consumers may decide to buy a suboptimal food product instead of an optimal one, but the price would have to be reduced to make up for the product no longer being optimal, as shown by Aschemann-Witzel et al. (2018). Quality and price when it comes to what is being selected have to match each other in the eyes of the consumer, and buying a suboptimal food at the same price as an optimal does not. On the other hand, consumers seem to rely more on their senses – such as senses of smell, taste and sight – than labelling when it comes to the suboptimal food already present in their homes. Consumers seem reluctant to waste food already bought (Bolton & Alba, 2012), perhaps since it displays a more direct and personal 'money down the drain' action than the suboptimal food going unsold in grocery stores. Something which may not pass muster for purchase in-store may be deemed as okay to eat if it is already present at home in the fridge, thus the level of consumer acceptance differs depending on the location of the suboptimal food. Furthermore, it may be a question of the habitual nature of shopping practices that poses a barrier for the acceptance of suboptimal food since those practices often do not require much active engagement or reflection (Sahakian & Wilhite, 2014) and to incorporate something new may require just that initially.

Additionally, demographics such as age and education may also play part in the consumption of unsold food as highlighted by de Hooge et al. (2017). Age may indicate that a person grew up with a specific mind-set regarding waste, such as people who lived through the rationing and food shortages of World War II may be more reluctant to see food go to waste than those who grew up in the 1990s. Furthermore, knowledge of food and how to best utilize it may be correlated to a person's age.

Sustainable Consumption

Sustainable, or green, consumption has come to have a wide array of meanings to people according to Gilg, Barr, and Ford (2005) and may thus be difficult to succinctly define in a uniform way as indicated by Lim (2017). The United Nations – originally from the Oslo Symposium in 1994 – defines *sustainable consumption* (and production) as "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations" (United Nations, 2015). The emergence of sustainable consumption showcases the impact

environmental concern has had on the minds of consumers and their purchases, as indicated by Peattie (2001). Peattie (2010) discusses green consumerism – which can be viewed as an equivalent to sustainable consumption here – as non-purchasing and purchasing decisions made by consumers based, at least in part, on environmental and social criteria concerning the well-being of the planet and those living on it. According to research conducted by researchers such as Roberts (1996), Chan (2001), Gilg et al. (2005), Lin and Huang (2012), and Lin and Niu (2018) concern for the environment or pro-environmental values play a part in the partaking of sustainable consumption for consumers. Connected to this according to Lin and Niu (2018) is environmental knowledge held by the consumers which on its own is not enough to have consumers partake in sustainable consumption but may act as a foundation for it.

Consumer Behavior Aspects and Conspicuous Consumption

However, as is indicated by Tan, Johnstone, and Yang (2016) and evidenced by Vermeir and Verbeke (2006) in their discussion of sustainable food, sustainable consumption attitudes are increasing faster than the actual observed behavior. It clearly illustrates that while the intentions are there, once consumers are in a purchasing situation something else may take precedence. Socio-demographic variables such as gender, age, and education are also seen as impacting sustainable consumption (Gilg et al., 2005; Luchs & Mooradian, 2012; Aschemann-Witzel, 2018) however, Diamantopoulos, Schlegelmilch, Sinkovics, and Bohlen (2003) cautions against overreliance on it while also acknowledging that it cannot be ignored as a factor. Social norms, and indirectly culture, may also play part in consumers participating in sustainable consumption (Gilg et al., 2005; Lin & Niu, 2018). Additionally, personal attitudes, or psychological factors, also play a part in consumers' involvement with sustainable consumption since consumers wish to satisfy their needs and/or wants through their consumption (Gilg et al., 2005; Luchs & Mooradian, 2012). Green conspicuous consumption can be viewed as a type of sustainable consumption but also as a present-day green alternative to Veblen's conspicuous consumption, as discussed by Griskevicius, Tybur, and van den Bergh (2010), where psychological factors and personal attitudes are evident in the purchase choices made. This type of sustainable consumption in particular is also well-suited for Peattie's (2010) discussion of sustainable consumption as an oxymoron since it implies consumption and acquisition of new goods which may be detrimental to the environment. But also, said goods go beyond the needs of the consumer and satisfy the wants which oftentimes does little for the sheer function of a product. However, compared to the alternative – traditional consumption – sustainable consumption, and green products, are less taxing to the environment (Lin & Huang, 2012).

Barriers to Sustainable Consumption

The attitude-behavior gap discussed by Vermeir and Verbeke (2006) can be seen as a barrier for sustainable consumption since there is something intangible present that is stopping consumers from partaking in sustainable consumption despite desiring to do so. Other barriers can be lack of knowledge and information, and the perceptions consumers hold of a product's price versus its quality according to Gleim, Smith, Andrews, and Cronin Jr. (2013). Price is also something brought up by Hjelmar (2011) as something stopping consumers from buying organic food due to it being considered too expensive compared to conventional food and Clark (2008) discusses the relatively

high prices of slow fashion, which is often considered sustainable, compared to the price points set in the fast fashion industry. Thus, price may hinder consumers from realizing their sustainable purchase aspirations due to, for them, prohibitively expensive pricing. Access may be another barrier for sustainable consumption; such as with slow fashion being produced in limited-edition collections as exemplified in Clark (2008) and the question of convenience when it comes to organic food as discussed by Hjelmar (2011). These various barriers may play part in explaining why the growth of the sales of organic food is slow-going in Sweden and made up less than eight percent of total food sales in 2017 (Naturvårdsverket, 2019). Hjelmar (2011) suggests that ready availability and convenience for consumers could increase consumers' purchase of organic goods since it would be easier to incorporate them in their grocery shopping practices that way. However, in order to break the routinized nature of those shopping practices – ones that do not require much active reflection or engagement (Sahakian & Wilhite, 2014) – or the routinized practices concerning any type of consumption in order to create new, more sustainable practices changing just one aspect may not be enough as indicated by Hjelmar (2011).

Practice Theory

Practice theory, or social practice theory, is concerned with actions but as pointed out by Halkier and Jensen (2011, p. 103) it "is not a coherent theory" and thus there seems to be a lack of agreement on how to define it (Schatzki, 2001; Hargreaves, 2011; Warde, 2014). Reckwitz (2002, p. 249), who focuses on the parts that make up practices, describes a *practice* as "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". He goes on to point out that a practice signifies a kind of pattern for actions that can contain many different single actions to make up a practice (Reckwitz, 2002); a replication of a practice then must not necessarily contain the same actions to achieve the same result. The practices have been learned from people's surroundings and Reckwitz (2002, p. 251) suggests practices "give the world of humans its visible orderliness"; thus, one could say that practices – both physical and mental ones – aid the order of present-day society. In contrast to this view of looking at practice theory is Warde's (2005) view which focuses on how these parts connect to each other. A third way of viewing practice theory is to focus on how practices connect individuals with society at large through their performance (Spaargaren & van Vliet, 2000).

Carriers and Elements of Practices

A person is viewed as a carrier of practices and through that is a *carrier* of "certain routinized ways of doing, understanding, knowing, and desiring" (Ingram, Shove, & Watson, 2007, p. 14). Overall, practice theory does not hone in on individuals who perform the practices nor the societal and social structures that have shaped them but rather it is the practices themselves that are what becomes interesting (Hargreaves, 2011). Something which is indicated by reducing the people who perform the practices to be the carriers of said practices. Objects may be key components in practices since in order to perform some practices 'tools' of various kinds are needed (Reckwitz, 2002), for example while baking a cake a multitude of appliances are needed to complete the task. Shove et al. (2012) pick up the importance of objects for practice

theory in their breakdown of what elements constitute practices. In their simplified view of practice theory practices are made up of three elements; materials, competences, and meanings (Shove et al., 2012). *Materials* include objects – as discussed above – technologies, components of objects, and tangible commodities while *competences* include technique, skill, and know-how according to Shove et al. (2012). *Meanings*, in the eyes of Shove et al. (2012), encompass ideas, aspirations, and symbolic meanings. While each element is important to the performed practices and must all be present, it is how these elements go together and break apart – the interplay among the elements – which is of importance since practices are not infinitely stable per their nature (Shove et al., 2012). It is through the creation and disintegration of connections between the elements of practices that existing practices can be altered, new practices can emerge, and old practices can fade away.

Shopping as a Practice

Shopping can arguably be seen as routinized behavior based on the above discussion and is also brought up by Sahakian and Wilhite (2014) as such in their discussion of consumption in relation to food and drinks. Shopping is a type of practiced habit which does not require much active engagement or reflection from the carrier in order to accomplish the task (Sahakian & Wilhite, 2014) and has for some become a leisure activity (Gregson, Crewe, & Brooks, 2002). Shopping for groceries is arguably a mundane activity where much of the actions performed are routinized since they are frequently performed and have likely been similarly performed for a long time. Signifying that not much active engagement from the carriers is needed, as per Sahakian and White's (2014) reasoning. This falls in line with Shove's (2012, p. 103) definition of habits as "practices that are recurrently and consistently reproduced by suitably committed practitioners" and a practice becomes "habitual when it is routinely and consistently reproduced" (Shove, 2012, p. 103). It focuses on the timing and frequency of when it is practiced whereas a routine – a term often conflated with habit according to Southerton (2013) – "has to do with the way in which multiple practices are ordered and scheduled" (Shove, 2012, p. 103). Thus, a routine is less focused on frequency and timing and more focused on the practices that make up said routine. Røpke (2009), Hargreaves (2011), and Sahakian and Wilhite (2014) have all highlighted the applicability of practice theory toward sustainable consumption, while Halkier and Jensen (2011) and Halkier (2017) have highlighted the applicability of the theory perspective for food. Evans, McMeekin, and Southerton (2012) propose that if the practices produced by carriers are to become more sustainable it is the habits and routines, like shopping, which do not require much of their carriers to be performed, that must be altered.

Methodology

A qualitative approach was utilized in this study to be able to go beyond what can be found at the surface level. Furthermore, due to the apparent lack of prior research into this specific topic in combination with the desire for a rich understanding of what takes place an exploratory approach was utilized. This approach allows for placing a particular phenomenon in a new light (Saunders, Lewis, & Thornhill, 2016) and since the aim of the current study is to gain insights into and an understanding of how practices impact potential purchases of suboptimal food it is well-suited. Since there is a focus on practices in the current study solely conducting interviews can be viewed as

too static of an approach to capture something which is in motion and thus holds meaning in both what is said and what is being done (Schatzki, 2001). Therefore, go-alongs were utilized along with in-depth interviews since it allows for both aspects to be captured. Additionally, while this study utilizes a practice theory perspective, a theory which views people as carriers of practices rather than consumers, the term consumers is used when discussing more general aspects of consumption so as to distinguish it from the theory perspective.

Fieldwork

The study is inspired by the ethnographic approach combining participant observations with interviews. Ethnography focuses on the collection of data and recording of human behavior in its natural setting over an extended period of time and through immersion (Crang & Cook, 2007; Eriksson & Kovalainen, 2015); something which was adapted here. Since the current study aims at finding descriptive and exploratory evidence as to how the suboptimal food enters the shopping practices of sustainably-minded consumers taking inspiration from ethnography is well-suited (Eriksson & Kovalainen, 2015). A true ethnography would require an emic perspective – an insider's perspective – something which was not suitable here due to the restraints placed on the project but instead the study has an etic perspective, which is more of a theoretical view (Eriksson & Kovalainen, 2015). However, there are emic aspects found within the study through the participant observations. The current study also strays from a true ethnography, as discussed by Eriksson and Kovalainen (2015), in that the focus is not on culture but primarily focuses on practices which then connect to cultural and social aspects. However, since there is still a clear logical connection between the purpose of the current study and an ethnographic approach it was viewed as well-suited.

In line with Arnould and Wallendorf's (1994) discussion of market-oriented ethnography – where there is an ethnographic focus on consumption behavior – more than one method of data collection is utilized here. Participant observations in the form of go-alongs to grocery stores are utilized to allow the author to view the practices in-situ and interviews are used to delve deeper into those practices while also extracting other relevant data. Furthermore, the choices made when it comes to fieldwork is well-suited to the practice theory view of the study since it allows practices to be at the center of attention. While still also allowing for the elements which make up said practices to be brought up and elucidated, as discussed by Shove et al. (2012), to gain a more in-depth understanding of what is behind the observed practices.

Go-Alongs

Participant observation was selected since the practice orientation of the study requires a primary focus on what is done and retellings of what has been done would not solely suffice as data. The concept of go-alongs, as described by Evans (2012a), was adapted to the current study and here signifies the author accompanying a participant on one of their trips to shop for groceries; thus, it constitutes the participant observation part of this study. Unlike Evans (2012a) the go-alongs in this study contained less communication so as not to disturb the participants going about their business too much but unlike non-participant observation the author did have a presence along the participants. This altered version of a go-along was utilized since it allowed for the participants to be accompanied and carefully studied throughout their store visits, making it similar to shadowing Johnson (2014). But it also allowed for some

conversation – often in the form of questions – to make the participant's reasoning clear concerning their actions. This is recommended by Kusenbach (2003) for go-alongs and proved to be useful while in the grocery stores since it made the participants reflect on their own, often routinized, actions. Furthermore, unlike shadowing a go-along is more interactive and may therefore put the participants at ease in that they are not being followed as much as they are accompanied by someone in the store. In the current study the participant observations are limited in both time and scope to accompanying the participants on their grocery shopping trips. However, they were crucial since they allowed the author to see the practices rather than having the participants retell their shopping trips and the involved actions.

Each participant was observed during one trip to a grocery store to acquire their groceries. The time, date, and location were set by the participant to interrupt their daily flow as little as possible in order to make the trip be as closely resembling one of their regular trips as could be. The participants were met up with outside of the store and then observed throughout their time in the store in question. There was some conversation between the researcher and the participant throughout the time spent in the store since it appeared to put them more at ease with the situation as well as provide some direct insights into some actions taken by the participants in the store. Some pictures were taken while in the stores when deemed relevant to the study as part of the field notes for the participant observations. Brief field notes were written down during the go-alongs but the bulk of the notes were written down after the observations had taken place since it was neither convenient nor appropriate to do so while in the grocery stores. These field notes were written down as quickly as possible so as to not forget important observations, however; the brief notes taken in stores were of great aid in this process to ensure the field notes be as exhaustive as possible. The notes ranged from the participants' interactions with the contents of the store to their interactions with other people to what they did in the store to what they brought with themselves to the store. Furthermore, special attention was also paid to the existence and presentation of suboptimal food in the visited grocery stores.

Interviews

In-depth interviews complement the participant observations for this study since assumption-making around the actions observed during the go-alongs may provide erroneous conclusions. Thus, interviews provide context and insights into the practices observed as well as providing a situation in which complementary discussions may be had and further data may be extracted from. This use of interviews can be seen within ethnography (Arnould & Wallendorf, 1994; Eriksson & Kovalainen, 2015). However, this study utilizes semi-structured interviews with an interview guide rather than unstructured interviews as is the norm in ethnography. In the case of the current study the guide contained themes to be covered and an exhaustive list of possible questions to ask. The existence of a guide provides a sense of structure in the interview setting while not inhibiting a conversational tone of the interview as would the set-up of a structured interview (Eriksson & Kovalainen, 2015). Furthermore, it allowed for the author to have the added security of a guide throughout the interviews and a way of ensuring that desired topics were covered. The interview guide was tested and refined using two pilot interviews after which some changes were made to improve the guide.

Each participant was interviewed in their own home following the trip to the grocery store. All participants were given the choice to be interviewed in English or in Swedish; all chose Swedish. The interviews ranged between 35 and 55 minutes depending on how talkative the participant was and how much they had to say on each topic. The interview guide was present and utilized throughout but the participants were encouraged to treat it as a conversation to be able to speak more openly and to invite them to bring up things they thought relevant but not previously discussed. Topics covered during the interviews were relevant demographics of the participants, their backgrounds, sustainability and their opinions on it, their approach and thoughts on food, what they do with the food they purchase, how they shop for groceries and their thoughts on it, and their thoughts and actions regarding food waste. The audio of each interview was recorded with the permission of the participants to be used as data for the study. All interviews were transcribed and participants were offered, and encouraged, to be sent the transcriptions for reading in order to eliminate any inaccuracies and misunderstandings. Each participant accepted and gave confirmations of having read the transcriptions of their interviews. Furthermore, some feedback to clear up misunderstandings were provided and added to the transcribed interviews in question.

Participants and Participant Criteria

A total of nine participants partook in the study. In the initial contact with the participants they were told about the general topic of the study and its focus on food and sustainability but they were not aware of the explicit focus of the study so as not to have that impact on their actions and responses. Each participant was interviewed and allowed the author conduct a go-along on one of their regular grocery store trips. All participants were found using a combination of purposive sampling, convenience sampling, and snowball sampling. The three methods are all non-probability sampling techniques which has limitations such as results being used for making generalizations pertaining to a population and the potential for bias (Kalton, 1983). However, in this study it was deemed a viable solution since each participant needed to fulfill some criteria to be relevant to the study and its aim. Furthermore, the goal is not to make generalizations but to gain insights into how practices can impact sustainably-minded consumers and their potential purchases of a particular type of goods. The criteria each participant had to fulfill was that they viewed themselves as sustainably-minded consumers, especially so when it comes to food, since this is relevant to the study. The point of having the participants self-identify as sustainably-minded and explain what that meant to them was to have them use their own words to describe it and use their own experiences to define it. Providing an academic definition and asking them if they see themselves as such may have eliminated participants because that definition did not correspond to what they think of as sustainable behavior.

The participants all identified themselves as being sustainably-minded when it comes to actions and choices related to food. Beyond this they make up a rather diverse group in terms of other demographics as shown in Table 1. As is evident by Table 1, two participants were male and the remaining seven were female which is skewed in the sense of gender representation. However, the majority of the participants can be viewed as representing their entire households which may even out a potential gender imbalance in the sample. Thus, this demographic marker was not something that proved

to make a difference in the collected data. Differences found in the sample may more accurately be attributed to demographic markers such as age, household situation, and income. All participants were guaranteed anonymity and therefore the names in the table are pseudonyms. The participants were situated in two different cities, both of which qualify among the top ten most populous cities in Sweden (SCB, 2018).

Table 1: The study's participants

Pseudonym	Gender	Age	Household situation	Occupation
Olivia	Female	22	Lives alone	Student
John	Male	24	Lives alone	Student
Anders	Male	31	Lives with partner & 1 child	Store worker
Filippa	Female	31	Lives with partner	Jurist
Maria	Female	33	Lives alone	Manager
Anna	Female	37	Lives with spouse & 2 children	Accountant
Astrid	Female	42	Lives with spouse & 1 child	Manager
Lilly	Female	45	Lives with daughter	Nurse
Carina	Female	62	Lives with spouse	Teacher

Data Analysis

Practice theory acts as the framework within which the collected data is analyzed since it plays a significant part to the study as a whole. Thus, it aids the analysis in both structure and content since it both guides how to view practices and what elements make up them as shown by Shove et al. (2012). However, some cultural and social aspects will be evident throughout the analysis since practices do not take place in a vacuum and are thus impacted by their cultural and social surroundings as mentioned by Halkier, Katz-Gerro, and Martens (2011). The analysis is on the meso level since one can view sustainably-minded people as a community. Furthermore, practice theory is more suited towards such an approach due to its lack of focus on the actors performing the practices studied. However, some personal views of the participants will be utilized to elucidate and put emphasis on certain parts of the analysis since this may strengthen the arguments made. Additionally, the quotes utilized are translated from Swedish into English since interviews were conducted in Swedish. The quotes are translated by the author which requires some interpretation but the translation aimed

at remaining as close to the original expressions as possible. The collected data was analyzed using coding by taking inspiration from the grounded theory approach discussed by Charmaz (1996) and Flick (2014). Coding the collected data aids the process of analyzing it (Eriksson & Kovalainen, 2015) and facilitates the discovery of themes (Crang & Cook, 2007). In the coding and analysis process the collected data was continuously reviewed and compared to extant literature in an iterative process.

Research Quality and Ethics

The quality of the conducted study was ensured through adhering to a set of criteria suggested by Eriksson and Kovalainen (2015): credibility, transferability, dependability, and conformability. Credibility is assured by the researcher's familiarity with the topic while transferability is assured through the transparency of the research process as described in this study. Furthermore, the transparency of the documented research process assures the dependability of the conducted study. The conformability of the study is assured through the clarity with which the collected data and subsequent analysis is presented. While the presence of the researcher in some stages of the research process may have had an impact on the collected data steps were taken to minimize negative impact so as to gather the best possible quality data. However, during go-alongs a choice was made to make the researcher's presence evident through conversation so as to put the participant at ease with said presence and allow them to act as close to normal as possible instead of acting as a shadow which could have caused discomfort. To ensure that the ethics of the conducted study were good it followed the suggestions of Eriksson and Kovalainen (2015) in that all participants were willing to be such, they were given information about the study and gave their consent afterward which at any point could be withdrawn by them for any reason, and the anonymity of the participants was ensured at their request. Additionally, the transparency and documenting of the conducted study and the research process aids in upholding the ethics of the project.

Findings

The ensuing analysis utilizes Shove et al.'s (2012) simplified view of practices as consisting of three elements – *materials*, *competences*, and *meanings* – and uses that as a framework to structure the analysis. The use of this view elucidates a theory approach that may at times be difficult to grasp since there is no 'one' practice theory approach (Halkier & Jensen, 2011). Furthermore, it aids in structuring the themes upon which the analysis is built. When utilizing the practice theory approach 'carriers' is utilized to refer to those who perform the practices to adhere to the theory (Ingram et al., 2007). Each theme begins with a recapitulation of the observed behavior and expressed attitudes to provide context. There are three themes within the analysis, each of which will be analyzed utilizing both practice theory focusing on the observed behavior and literature on suboptimal food and sustainable consumption focusing on attitudes and opinions expressed by participants. It adds a contrast to the analysis, as well as additional depth and reflection, since practice theory remains critical to the role decision-making plays in the performance of practices (Hargreaves, 2011). It also adds a contrast to practice theory in that the participants seem to view much of their choices as consciously made rather than as part of habitual practices. In such instances the people are referred to as either 'consumers' or 'participants' to distinguish it from practice theory. The analysis begins with a brief juxtaposition of two participants,

whose observed practices and expressed opinions contrast one another while still remaining true to their own definitions of and self-identification as sustainably-minded, for a more personal look at shopping practices.

Two Contrasting Grocery Shopping Practices

All participants self-identified as sustainably-minded however it was evident they existed on a spectrum in regards to their views on and commitment to sustainability. Carina and Filippa can be considered as existing on opposite ends of this spectrum. Carina stated she liked to focus on seasonality, locally-produced, and organic produce when possible. She stated she was willing to pay a premium for such food, which was also something that was observed. However, she appeared to be fastidious while choosing her food in the grocery store, rejecting dairy products nearing their best-before dates and disregarded the suboptimal food on offer in the store. When discussing this she reasoned that "if I pay for something it has to be of good quality" and "the things I buy need to be good because I am not interested in wasting my money" while also expressing doubt regarding what other people would think. Filippa on the other hand, focuses on the suboptimal food available in-store and works around that while also aiming to purchase seasonally and organic so as to be more sustainable according to her. Something which was also observed while she shopped at her grocery store of choice. For her this way of shopping has roots in her upbringing and in later years has taken on sustainability aspects which is, according to her, part of the reason why she does it. She claims to be "opportunistic in-store/…/ enjoy finding a good deal". The women's differences in opinions on suboptimal food and views on sustainability also reflect in their shopping practices. Carina works off of her list and pays attention to the items on said list while Filippa wanders around the store to discover the suboptimal food on offer and then figures out the food she will make the upcoming days based off that. They both appear to have an interest and knowledge when it comes to food but they utilize it differently in their shopping practices. For Filippa it results in being creative with what she finds in-store while for Carina it shows in her selection of dishes to cook and their ingredients. Background and age appear to play a key part here above personal attitudes, with Filippa belonging to a younger generation who grew up in a more globalized and aware world than Carina. Filippa also grew up in circumstances where suboptimal food was a necessity to make ends meet unlike Carina.

Two Approaches to the Purchase of Suboptimal Food

The practices and actions connected to suboptimal food observed in the stores seemed to be either by choice, grounded in sustainability with no serious financial consideration or by necessity in that financial considerations played part in the actions. For those actions stemming from financial necessity sustainability was later discovered to still be a present factor taken into consideration but one of less importance than limiting expenses. John explained his purchases of suboptimal food as motivated by spending less of his disposable income on food since that sum was not a large one and suboptimal food was "a good money saving tip to look out for in grocery stores since it is an easy way to save money". As a contrast to this the consumers who engaged in some type of actions involving suboptimal food as a choice had the opposite relation of these two factors where the environmental aspects and the possibility of saving edible suboptimal food from being wasted was a primary driver and the opportunity to save money was seemingly a secondary thought. As an example, Astrid came upon displays featuring

products with bright stickers proclaiming them to be reduced in price and to eat them soon, and stopped at them to further inspect the products. This happened despite stating they were not on her grocery list but if she found something she liked she would purchase it and find a use for it regardless. Later on, she explained that those actions were a "force of habit to see if I can find a diamond in the rough" and that she enjoyed the thrill of the chase in finding reduced price offers in the grocery store. Similar actions were found with several of the participants in that they actively looked for suboptimal food in their grocery stores as a way to practice their sustainability mindset, as they explained it. However, it is important to note that less participants actually followed through on purchases of suboptimal food than there were who actively looked at and inspected said goods.

Modes of Shopping as Part of Shopping Practices

Initially, it is necessary to highlight that viewing suboptimal food as a choice made because of financial necessity or as a sustainable conscious choice does not conform to practice theory since the theory focuses on habitual performances of practices (Reckwitz, 2002), not on people consciously making choices that impact their practices. However, even choices become habitual if repeated often enough and as such one may view it as becoming part of shopping practices as those described by practice theory. The situation here is similar to that discussed by Gregson et al. (2002) as to why people shop at charity stores; it was either a choice or a necessity. Thus, purchasing suboptimal food as a conscious choice or as a financial necessity may be viewed as two modes of shopping (Gregson et al., 2002). Shopping modes which subsequently may be viewed through a practice theory lens.

The Role of Materials to the Purchase of Suboptimal Food

The *materials* of main concern here are the suboptimal food on offer, the regular food available in the stores, signage – such as stickers and signs – to indicate where suboptimal food can be found, and money which can be both physical money or represented by a credit card. The suboptimal food, which as discussed by Aschemann-Witzel (2018) and de Hooge et al. (2018) is still safe to ingest but is past its prime and thus comes with a lowered price as a trade-off to entice carriers, was oftentimes something which carriers had to actively be looking for to come across it. While the suboptimal food often had some type of signage in the form of stickers it was rare for the food to be gathered together and easy to find. Instead, it was often placed beside the full-prized optimal products within the same food category. This appeared at times to be acting as a deterrent for acquisition among the carriers without financial restraints; sentiments which the participants voiced later on. As pointed out by Lilly, who did not purchase suboptimal food but could see it being a sustainable alternative, "why would I risk buying something that could be bad if the one next to it does not cost much more and is fine?" when given the choice the potentially questionable safety of the state of the suboptimal food overrode her quest to become more sustainable and the savings made if buying that product. The signage, and placement, of the suboptimal food was a prevalent factor and one which seemed to deter those without financial restraints more than the participant who did. If it required too much effort to locate such items the likelihood to thoroughly search for it dropped for the consumers who viewed it as a choice while John, whose primary motivation was a financial one, did search for it despite thinking it was "difficult to find such stuff in the store".

Furthermore, it would seem as if the routinized nature of the practices connected to grocery shopping, similar to that discussed by Sahakian and Wilhite (2014), is hard to break in order to include practices connected to suboptimal food. The breaking, and eventual creation, of links between elements is something which is discussed by Shove et al. (2012) as required to form new practices. In this case it appears as if the old links are still solid enough that welcoming new *materials* involving suboptimal food to create a new grocery shopping practice has not been fully successful. This may be further aggregated by the lack of knowledge about the suboptimal food on offer in-store until carriers are faced with it. In the past, and still today, many grocery stores send out weekly flyers with current offers and while it may not be possible to include suboptimal food in them due to the required foresight a similar type of idea may be beneficial for suboptimal food. Instead of flyers suboptimal food offers may all be gathered in one section of the grocery store and to make that section into an embodiment of the weekly flyer, but for suboptimal food only. It can be a place where inspiration is found and the possibility to make deals is present, much as with the weekly flyers. This ought to arguably attract more attention to the *materials* and they may, eventually, become normalized in the eyes of more carriers and more may incorporate them in their shopping practices. Something which could lead to less food waste for the grocery stores.

The *material* aspect of money seems to be a crucial factor in the breaking of old links to create new shopping practices that include suboptimal food. Money seems to decide how much time and effort is dedicated to acquiring suboptimal food as well as acting as a deciding factor in whether or not the price decrease is steep enough for carriers to deal with the extra hassle of shifting planned meals around to accommodate the suboptimal qualities of fresh produce. A trade-off which Aschemann-Witzel et al. (2018) showed to be of importance when faced with suboptimal food in stores. For the carriers who purchased suboptimal food but had no financial restraints it may be the case that the purchases fit into their old practices that have loosened connective links rather than new practices having been formed. It may be so since suboptimal food seems to be an occasional thing for them rather than a feature of every shopping trip, which ought to be closer to reality if it was truly integrated in shopping practices. For these carriers to break the old links monetary incentives, as a *material*, and the *meanings* connected to suboptimal food do not appear to be enough since the food needed to be fairly readily presented for them to incorporate them in their shopping practices.

The Role of Competences to the Purchase of Suboptimal Food

The *competences* which appear to be most prevalent here are the skills and know-how connected to food safety – such as how to store food and determine if it is still edible or not – and the skills and know-how of what to do with food that is still edible but may be past its prime. Among those participants who purchased suboptimal food this kind of knowledge appeared to be more extensive and the interest to acquire more such knowledge was present throughout the interviews. The ones who actively looked for and purchased suboptimal food were confident in their abilities to deal with and prepare the food in an adequate way to use it up and adequately store it to prolong its shelf life. However, the consumers who viewed suboptimal food as a choice seemed to have gained this type of know-how and skills before beginning to view purchasing

suboptimal food as a viable alternative with Filippa stating that she has had this kind of knowledge for many years due to her upbringing. As a contrast, John who had a primarily financial motivation for his purchases had learnt by doing according to himself much more when it came to how to best use the suboptimal produce he had purchased. For both types of carriers though it was evident that once they had brought their produce home, they both became more reluctant to be fastidious with the quality of the food. As well as being keen on making sure it was utilized before it became food waste, something which is reflected by Bolton and Alba's (2012) discussion on the topic of throwing away food. It appears as if even the carriers who did not purchase any suboptimal food still accepted it in their homes and tried to utilize it if they themselves were the cause of the suboptimal quality. This indicates that they may have some knowledge on how to use up suboptimal food but it may not be enough for them to feel comfortable incorporating it in their shopping practices. It would seem as if having or acquiring the *competences* relevant for utilizing suboptimal food may prove to be a stronger force for breaking or at least loosening links between elements than *materials* when it comes to incorporating suboptimal food in the shopping practices. Arguably it is more difficult to attain such knowledge than it is to acquire the *material*, that is the suboptimal food, and thus it may be easier for carriers who have such knowledge to take the leap and form new practices by putting their knowledge to use by combining all three elements in conjunction as Shove et al. (2012) point out as necessary for a new practice to form.

The Role of Meanings to the Purchase of Suboptimal Food

When it comes to the *meanings* of these practices the symbolic meaning of saving food from being wasted when buying suboptimal food and the idea that by buying such food one does a good deed for the planet appeared to be most prevalent. However, among the carriers the aspirations of becoming more sustainably-minded than they already considered themselves to be permeated the actions taken in the stores in connection to suboptimal food. For the consumers who did not need to incorporate suboptimal food in their shopping practices for financial reasons but did it anyway, the symbolic meaning of the actual purchases of suboptimal food seemed to be more pervasive. Something which was evident while discussing sustainability with them they seemed to be more concerned with saving food as an act that could help minimize food waste than for those who did not view it as a conscious choice. John who was clear on his suboptimal food purchases being primarily motivated by money acknowledged the saving food aspect of his purchases but did not delve deeper into what that could signify. The purchase of suboptimal food could be viewed as one way to display their green consumerism in that environmental and social criteria had become incorporated into the shopping practices, as a habitual variant of the green consumerism discussed by Peattie (2001). The carriers who purchased suboptimal food but did not have financial restraints were less likely to do a thorough search for suboptimal food in the grocery stores perhaps due to lack of incentive. It could also be indicative of suboptimal food not being a truly ingrained *material* in their shopping practices despite having the *meanings* of sustainability connected to it. As a contrast, John's expressed sentiments and opinions on the matter of his consumption reflected that he had a more matter-of-fact approach to his purchases in that he viewed the sustainability aspect to 'saving' suboptimal food through his purchases as a mere bonus, albeit one he cared about.

The Interplay of Elements

Overall, when taking into account observed behavior, the opinions expressed by the participants, and the behavior described by participants it appears as if among those who do purchase suboptimal food their view of why they do it – whether it is a conscious choice or a financial necessity – impacts the effect and presence of suboptimal food in their shopping practices. It is two different modes of shopping (Gregson et al., 2002) that requires context-specific knowledge that can be performed in the shopping practices. While it was evident among the consumers that sustainability was something they cared about, and their views and self-identification as sustainably-minded echoed the definition for sustainable consumption given by the UN (2015), how suboptimal food came to feature in their shopping practices varied. If the suboptimal food was considered a financial necessity it was already part of the routinized shopping practices which indicates the strength of the monetary impact on the links connecting the elements in the shopping practices. The links for the shopping practices previously performed by such carriers were forced to break to incorporate a new aspect to the shopping practices in order for them to be sustainable in the long run to their carriers. Over time that new practice became the one that was continuously performed and persevered through repeated performance, as discussed by Shove et al. (2012). It is evident with Filippa that the shopping practices that initially formed featuring suboptimal food as a financial necessity have become routinized and ingrained as everyday practices albeit ones with somewhat loosened links over time when it transitioned into no longer being present because of financial restraints. For the consumers who view suboptimal food as a conscious choice it has not become a true everyday part of the shopping practices which was made evident in them not considering it to be worth it to spend much extra time searching for suboptimal food if it was not readily available in-store. Had it been a truly integrated part of their shopping practices the search for this type of food would have been ingrained in the practices performed in the grocery store. This is in contrast to these consumers being the ones who seemed the most passionate about sustainability and sustainable consumption and had clear aspirations of being sustainable in their everyday lives.

While *materials*, *competences*, and *meanings* all clearly have important role in the shopping practices of carriers the way the elements interact while said practices are performed is what is most important. However, as is evident here, the presence and aid of the elements may trigger a new practice. Carriers who have recently gained a new depth in the *meanings* they associate with suboptimal food may incorporate that into their shopping practices which could result in purchases of such food. If money may be an issue, and thus a change in accessible *materials*, that may lead to purchases of suboptimal food. However, hard to find *materials* may act as a barrier for practices to be performed and thus no purchases of suboptimal food are made. But for these changes in shopping practices to take place the other elements have to be there as well since a single element is not sufficient for a practice to be performed, and they have to successfully interact. The lack of interplay was evident among carriers who did not purchase suboptimal food but all elements appeared to be present. The elements were there but there was no interplay between them and thus no purchases made.

The Impact of Pre-Trip Practices on Purchases of Suboptimal Food

The second clear theme found was the impact pre-trip practices have on the purchases of suboptimal food. The presence of a detailed shopping list seemed to hinder the incorporation of suboptimal food since it for some reason fell outside the framework that list provided its owner and was thus not available for them to purchase. The planning that goes into making this shopping list entails planning out meals for a week, looking into what is available at home, and then writing a list to ensure all ingredients will be present when the time comes to prepare the food decided on. While this approach limits food waste at home, something which was pointed out by several participants as a reason for having a detailed shopping list, it does not allow for spontaneous purchases of suboptimal food, or other products not written down on the list. For suboptimal food purchases to be possible they would have to fit into what has been written down on the shopping list instead of consumers selecting and purchasing suboptimal food that appeals to them and then making it work with the other purchases made. Since it is only once consumers are in the grocery store that they can see what suboptimal food is on offer there is no opportunity to plan out the upcoming meals around the offers ahead of time unlike the regular weekly offers, something which was pointed out by Olivia who claimed that lack of knowledge of such offers before entering the store limited her ability to purchase suboptimal food since she could not incorporate it in her food planning at home.

The Role of Materials to Pre-Trip Practices

The *materials* of main concern here are the shopping lists and the recipes utilized to make up those lists. While both the recipes and the lists may ease the daily routine at home as a consequence it restricts carriers' ability to freely act while in the grocery stores. A point of contention in the households of several participants was the food waste produced; as a result, to minimize that they had resorted to planning out their meals ahead of time and in such a way to stop what Evans (2012a) calls over-provisioning where food ends up not being utilized and eventually becomes waste. Thus, sticking to the items written down on the shopping list and consequently sticking to the planned-out meals does not allow carriers to make spontaneous purchases of suboptimal food found in the grocery stores while shopping. This could be viewed as an overreliance on the *materials* element compared to the other two since it seems to block out both *competences* and *meanings* or at least not weigh them all equally. The carriers connected symbolic *meanings* of sustainability to food yet, they still did not look outside their *materials* for other sustainable options, such as suboptimal food. As a contrast to this is Filippa who only sketched out meal ideas on her shopping list at home and let the in-store offers and the available suboptimal food decide what food she would be cooking the upcoming week. The lack of importance on the shopping list as part of practices in this instance allows for shopping practices to be open to include suboptimal food found while in-store.

The Role of Competences to Pre-Trip Practices

The *competences* which appear to be most relevant here are skills, techniques, and know-how connected to cooking and how to best take care of and handle food. Carriers who appeared confident in their capabilities within these fields often had less rigorous lists and left room for changes and improvisations while in the grocery store, thus being better able to accommodate any suboptimal food that caught their eye. Since

suboptimal food often has some sort of imperfection to it whether this be a fast approaching best-before date or cosmetic imperfections or damaged packaging – as discussed by de Hooge et al. (2017), de Hooge et al. (2018), and Aschemann-Witzel (2018) – it may need to be prioritized in order to be utilized to its full extent. This in turn may lead to new dishes having to be thought up or planned meals being moved around to accommodate the suboptimal food purchased. This arguably requires skills or at least confidence in the kitchen and thus for those carriers who feel lacking there it may result in them overlooking opportunities to buy suboptimal food since they may not be confident in adequately dealing with it. This was later acknowledged by several participants as a reason for them not acting out their attitudes on sustainability into behavior, a gap discussed by Vermeir and Verbeke (2006). Maria pointed out that she was "not comfortable in the kitchen/…/I stick to what I know" which included verging on the safe side and buying food with long shelf lives, something which was also observed in the grocery store. Acquiring new skills and know-how in this area could help carriers see past the ambiguity of suboptimal food as something which no longer fulfils the same quality standards as other food, which is discussed by de Hooge et al. (2017). By knowing how to handle suboptimal food the negative connotations connected to the ambiguity lose power. Additionally, strengthening the *competences* with carriers may also act as a catalyst for new practices surrounding suboptimal food.

The Role of Meanings to Pre-Trip Practices

The *meanings* of these pre-trip practices which appear to be most prevalent are the aspirations for an easier everyday life through organization, the desire to prevent purchasing too much of something and then not using it up, and that by buying just enough waste can be minimized as a way to be sustainable. While a majority of participants viewed food waste as a problem for themselves as individuals, for stores, and for society at large there was a clear focus on shopping practices which mainly led to the decrease of food waste at individual levels. Even with those who bought suboptimal food and viewed helping stores decrease their waste as a bonus and a sustainable purchase act, the primary focus of their shopping practices connected to food and food waste seemed to center around the home. However, this could be viewed as an initial step in the right direction to overall minimize food waste since it may appear to be a surmountable task to decrease waste at individual levels through altered shopping practices than to tackle it at higher levels. To have consumers be aware of food waste and its implications, perhaps in part thanks to the emergence of a general awareness of consequences of consumption (Peattie, 2001), is a starting point for further actions. Something indicated by Anna's comment "we do our part since that is where we can change" in regards to her household's food waste. The pre-trip practices also appear to make life during the rest of the week easier for carriers since it allows other everyday practices to flow smoothly in a practiced pattern. For them pre-trip practices symbolize a smoothly operating everyday schedule where each practice has been performed countless of times and all of them fit together to make up a functioning whole. Furthermore, it seems as if the pre-trip practices are imbued with their own sustainable symbolism for their carriers and by performing those practices, they fulfill their desires to be more sustainable in their actions. For these carriers, avoiding over-provisioning through planning is meaningful when it comes to sustainability since it makes the likelihood of food being wasted smaller. Those *meanings* seem to have sufficiently strong links to the other elements which may prevent the creation of new

pre-trip practices that could ultimately lead to new sustainable shopping practices and purchases of suboptimal food.

The Interplay of Elements

Overall, it appears as if pre-trip practices in the form of planning out meals and writing a detailed shopping list act as barriers to the purchase of suboptimal food while in grocery stores. For the in-store shopping practices to allow for suboptimal food the existing pre-trip practices need new *competences* to develop the skills, know-how, and techniques utilized in the kitchen so as to give carriers the tools and capabilities to handle suboptimal food. This would not eliminate *materials* such as recipes and shopping lists but it would allow for the relationship between carriers and *materials* to be looser. Additionally, it may potentially be more accepting of external factors, such as suboptimal food found in-store, since the majority of the participants acknowledge it as a good way to act sustainably while grocery shopping. Furthermore, taking these *materials* and *competences* together and combining them with suboptimal food could perhaps result in a bit more effort in the kitchen and thus lose some of that everyday ease. But since the knowledge to handle suboptimal food now exists it would signify a lesser problem than before it existed. While it is evident that pre-trip practices contain *meanings* of sustainability by having them in the same practices as these new *competences* could potentially mean that suboptimal food would find its way into these *meanings*. This would in turn modify an existing practice or create a new one with suboptimal food firmly viewed as a sustainable option. Thus, it would appear as if the key when it comes to pre-trip practices acting as barriers is *competences* and new ones could result in the breaking of old links and creation of new ones to aid the development of new shopping practices, as discussed by Shove et al. (2012), which would lessen the importance of the pre-trip practices. It would allow for these new practices to become the ones consistently performed and reproduced in-store and allow carriers to take their sustainability efforts, in terms of suboptimal food, to the next level and further satisfy their quests in becoming more sustainably-minded than they are today.

As highlighted by Shove et al. (2012) it is the interplay between *competences, materials,* and *meanings* which is necessary and while this is evident here the importance of the separate elements is also clear. The *materials* allow carriers to, in a tangible way, use their *competences* or lack thereof to plan their near future in a way that suits them. This may make itself evident in simply outlining a shopping list and coming up with meals in-store when viewing the suboptimal food as a way to be sustainable. It could also make itself evident through careful planning that minimizes over-provisioning and food waste at home. However, as is evident above the *meanings* of these differing practices appear to be similar in that they are all viewed as sustainable. This is perhaps not where a change needs to take place to begin with in order to incorporate suboptimal food into the shopping practices of carriers. It may be more beneficial if there is an initial push for *competences* which then can be connected to and built upon with *meanings* to decrease the reliance on materials such as shopping lists and planned-out meals. By opening up the shopping practices to what is present around carriers in-store it may be easier for them to incorporate suboptimal food.

The Impact of In-Store Practices on Purchases of Suboptimal Food

The third theme that was discovered is the impact of in-store practices on purchases of suboptimal food. It is closely connected to the previous theme since it relates to the

shopping list but arguably stands on its own here since it focuses on how carriers act in the grocery store environment. While all participants did pay attention while in-store in order to conduct their shopping the level of attention varied. Those who purchased suboptimal food seemed to pay more attention to their surroundings and appeared to let it inform their decisions to a higher degree compared to those who did not purchase suboptimal food. The ones who purchased suboptimal food spent more time perusing the products on offer in store, seemingly taking in what was for sale, and visited more parts of the stores than those who did not. John stated that he actively chose to "take it slower in stores/…/to not miss good offers". Something which may be the case for the others who purchased suboptimal food since their perusal led to more time spent in the store than strictly necessary for them to complete their purchases. Regardless of stance on suboptimal food all participants paid attention to promotional offers such as bulk buys and some let those inform purchase decisions that were outside of their shopping lists indicating that they could look outside of their written down lists. However, those who did not purchase suboptimal food seemed less inclined to wander around and stop to look at something if it was clear at first glance that it was not relevant to what they had set out to purchase, and it was not on some kind of offer. These observations corresponded such that those who did spend more time in-stores perusing the goods for sale were those who seemed to gain the most enjoyment out of cooking and spending time in the kitchen; as well as being those who appeared most confident in those areas. While those who did not spend much time to wander around looking at the products for sale were those who seemed to gain less enjoyment out of spending time in the kitchen and had less experience in that area. Olivia was one of those participants who viewed herself as a beginner in the kitchen and thus tried to "conquer one area at a time so I can feel confident there" indicating that she may wish to become someone who can wander around grocery stores more.

The Role of Materials to In-Store Practices

The *materials* that appear to be the most important here are the products in-store, signage, and the shopping lists. As discussed earlier in the analysis, the shopping list plays an important role in the shopping practices carriers perform before entering the store but it also plays an important part in guiding the carriers through the store in collecting their desired products. Thus, to an extent that varies on the reliance carriers have on their lists, the shopping practices performed inside grocery stores are guided by what is written down on said lists. For those who do not depend on their lists but more use them as a guide and suggestion, like Filippa, this lack of reliance on it appears to let them walk around more freely and take in their surroundings and let that guide their actions. Both Filippa and Anders stated that what can be found in stores can act as inspiration and alter their plans. As a contrast, Maria stuck to the main aisles mostly and while she did look around as she went, she did not appear to stray from her path something which corresponds to her lack of confidence in the kitchen, which may make her reluctant to wander. The lack of venturing outside of the food on the shopping lists may be viewed as the carriers trying to avoid over-provisioning and its eventual food waste as discussed by Evans (2012a). But those who stray and pick up suboptimal food can be viewed as performing a sustainable action in that they are saving perfectly edible suboptimal food from becoming food waste Aschemann-Witzel (2018) and de Hooge et al. (2018). Signage indicating suboptimal food, such as stickers, did interrupt the shopping practices of some carriers since it caused them to stop and inspect the

particular products more carefully. This close inspection caused them to either discard it as unsuitable or to put it in their cart for purchase and to potentially rearrange their meal plan around the chosen suboptimal food; something which is investigated by Aschemann-Witzel et al. (2017) and Aschemann-Witzel (2018). However, since the signage indicating suboptimal food was often small in size and the food rarely gathered together in larger amounts they may be overlooked or difficult to find. This was previously highlighted by John and is something that could potentially discourage consumers interested in purchasing suboptimal food but do not have the inclination to thoroughly search for it. Clearly visible *materials* may be one way of raising awareness of suboptimal food which may eventually lead to carriers incorporating them in their shopping practices.

The Role of Competences to In-Store Practices

The *competences* which seemed to be of importance here are the know-how, skills, and techniques connected to how to take care of and handle food, particularly suboptimal food and how to assess it, and techniques, skills, and know-how related to cooking. As discussed previously these types of skills and know-how along with possessing cooking related techniques may make it easier to consider including suboptimal food since carriers with those *competences* may feel as if the challenge the food presents is one they are capable to take on. If a carrier does not have the *competences* for this challenge it would make sense if they stick with their pre-determined plan and does not stray from it, which subsequently leads to them being less likely to wander around in-store. Thus, the lack of *competences* acts as a barrier upon their shopping practices and limits them and their options since it stops a practice from being created (Shove et al., 2012). Lilly showcases this in that she did not pay much attention to the products in the store that were not present on her list and went from one item on her list to the next one since they all featured in meals she felt comfortable making. As a consequence of this she did not pay attention to most of what was offered for sale in-store, including suboptimal food, since it may not have been a good match with her *competences*. Carina displays somewhat of a counterpoint here in that she does appear to possess the know-how discussed here and claims to enjoy cooking. Furthermore, she claims to attempt to minimize her household's food waste by taking care of the suboptimal food present in it but she does not stray from her shopping list significantly while in-store. But she does like to wander through the store to "have a look around" despite it only rarely leading to any impulse purchases and then not of suboptimal food. It seems as if the carriers who possess the *competences* are more likely to have made it part of their shopping practices to wander since they are probably more likely to be able to handle food, suboptimal or optimal, that they come across and become interested in. Whereas the carriers who feel they lack these *competences* may not include such behavior in their shopping practices so as to avoid temptation of whatever they may come across.

The Role of Meanings to In-Store Practices

The *meanings* that appear to be of particular value and present in these practices are the symbolic meanings behind making sustainable choices in-store, which includes suboptimal food, and aspirations to become a better and more sustainable consumer. The carriers appeared to place a high value on making 'good' choices in that they chose organic when possible and seemed to gravitate toward the, environmentally-speaking, 'better' alternatives. This materialized in the form of less animal-based protein and

instead picking plant-based protein sources. In the instances when animal proteins were chosen, they tended to be the Swedish options despite the heftier price tags on those. Something which was clearly illustrated by John, who despite his tight budget, ensured that any meat or poultry he bought was Swedish since he viewed that as the most sustainable option available to him. While all participants defined being sustainably-minded slightly differently when discussing it, it is evident in their in-store shopping practices that they at least attempt to perform, to them, sustainable behaviors while buying their food. The consumers are actively trying to bridge the attitude-behavior gap discussed by Vermeir and Verbeke (2006) since they feel urged to actually behave in a way that causes less strain for the current environmental situation; something which was discussed in the interviews. By making sustainable choices in-store as part of their sustainable aspirations embodied in their shopping practices, they not only satisfy their needs for food but also potentially satisfy their want to be better consumers; something which is brought up by Gilg et al., (2005) and Luchs and Mooradian (2012). For the carriers who have incorporated suboptimal food into their shopping practices this satisfaction of wants may be viewed as more evolved in that it can be considered to be beneficial at a higher level since stores have less suboptimal food in their possession as a consequence. Comparatively, the other carriers may only have reached the level where their aspirations are to stop their own over-provisioning.

The Interplay of Elements

Overall, when taking together observations, opinions expressed by participants, and previously performed behavior described by them it appears as if in-store shopping practices have a clear impact on the incorporation of purchases of suboptimal food into shopping practices. However, why some consumers who claim to be sustainably-minded choose to purchase suboptimal food and others do not is not immediately clear. They all appear to have similar aspirations of becoming more sustainable in their purchases and to make 'good' choices in-store but their outcomes are different. All carriers have access to the same *materials* and they appear to have similar *meanings* behind their choices in-store when it comes to sustainability. But it is the food-related *competences* the carriers possess that seem to be the crucial component in whether or not links holding together old practices can be broken and new shopping practices can be formed since practices do not need all new elements to be created (Shove et al., 2012). This appears to be the case since *competences*, along with confidence in them, allows for the carriers to be open to what they come across while in the grocery store. It may also give them the possibility to draw from said *competences* to create a meal in their head based off of a suboptimal food they come across. The carriers who do not possess these *competences* may not be able to do that successfully due to a lack of skills and therefore may not develop the inclination for wandering around grocery stores seeking inspiration from the present *materials*. Something which may lessen the likelihood of them being exposed to suboptimal food on shelves throughout the store. Thus, a way to build more sustainable shopping practices in-store while also potentially having a positive impact on food waste at home is to improve the *competences* at use in the kitchen and to become confident in using them. Doing so could lead to consideration of suboptimal food as a viable alternative.

Materials, *competences*, and *meanings* are all of importance when it comes to in-store shopping practices and their interplay is of particular importance for the successful

performance of practices. *Competences* allow for carriers to not be bound to *materials* such as shopping lists and instead see what *materials*, like suboptimal food, is being offered for sale at grocery stores. It allows for freedom to improve shopping practices and purchases made in ways that pre-trip practices could not have accounted for. If *competences* are present for the carrier this situation may further allow them to satisfy the *meanings* attached to sustainability and food they carry with them. However, even in instances where in-store practices aid carriers in purchasing suboptimal food barriers can arise and result in broken connective links. Broken links result in practices not being performed while still having all elements present. *Competences* may be viewed as the key element here but *meanings* and *materials* are also required and complete links between them are needed for practices to be performed.

Conclusion

This study was a quest to discover how suboptimal food enters the shopping practices of sustainably-minded consumers. The findings of this study point to the importance of how consumers approach the purchase of suboptimal food, how their pre-trip practices impact their purchases of said food, and how their in-store practices impact the same purchases when it comes to suboptimal food entering the shopping practices of these consumers. The study divides practices into elements to analyze each component further something which cannot be done for purposes other than analysis since it is always the interplay between the elements that creates a practice or a lack of such interplay that hinders a practice. Utilizing Shove et al.'s (2012) elements allows for a deeper understanding of sustainably-minded consumers' shopping practices here. In this study competences appear to be the crucial element when it comes to the purchase of suboptimal food. Competences related to cooking, how to best keep food, and how to handle food which may be past its prime appear to enable consumers to see the possibilities in suboptimal food and give them the assurance that they can tackle it. Furthermore, these competences appear to allow consumers to deviate from their original plans more easily and to come up with things on the fly. Both of which are beneficial to the purchase of suboptimal food in this study. The less such competences consumers displayed the less accepting they appeared to be of suboptimal food. Additionally, meanings appear to be closely connected to purchases of suboptimal food with them carrying the symbolic meaning of rescuing food and through that being an act of sustainability. Such symbolic meanings appear to be of importance and a way to show one's commitment to sustainability.

The connection between competences and meanings seem to be somewhat of a fortuitous symbiosis in that the more competences sustainably-minded consumers acquire the more they seem to place symbolic meaning in suboptimal food and its purchase. While the more value they place in the symbolic meaning of suboptimal food the more likely they appear to be to want to improve their connected competences to capture that symbolic meaning. That is not to say that materials were not important to the purchase of suboptimal food since its presence as a material is required for any purchase to happen but out of the three elements it appears to have been the least important one. However, viewing Shove et al.'s (2012) elements together it is evident that it is the interplay between materials, competences, and meanings that matter for the purchase of suboptimal food. It is the existence of those connective links that needs

to materialize in order for suboptimal food to be purchased; the elements may well exist separately with consumers but it is the connection of them that makes a difference.

This qualitative study utilized a practice theory approach to explore the shopping practices of sustainably-minded consumers. Future research within suboptimal food may wish to explore shopping practices of other consumer groups to see how suboptimal food may enter there. It would also be interesting to explore, in-depth, how the attitudes and opinions toward suboptimal food as well as potential purchases of said food can change over time when consumers acquire new and relevant competences. The view on suboptimal food and food waste needs to change as does the actual creation of it "so as not to jeopardize the needs of further generations" (United Nations, 2015).

Theoretical Contributions

The conducted study has three theoretical contributions. The *first contribution* is that it views suboptimal food in everyday situations and how it features in consumers' lives. This takes the topic from being the subject of an experiment, such as that of de Hooge et al. (2017), where one can argue how well attitudes translate into behavior and instead observes it as part of the everyday environment consumers are situated in. A *second contribution* is that the study takes a practice theory approach, and thus focuses on the performances of practices, to a sustainability-oriented topic. It allows for a look at how sustainability finds a place within the routinized behavior of a commonplace activity such as grocery shopping instead of looking at it from the view of purchases rarely made as with green conspicuous consumption (Griskevicius et al., 2010). A *third contribution* is that it takes a careful look at the elements that make up a practice and their crucial interplay in the performance of practices in the realm of sustainability and grocery shopping.

Practical Implications

The following implications stemming from the study can be utilized by both businesses operating along the supply chain for food, but perhaps especially grocery stores, and organizations involved in sustainability work. While this study was conducted on sustainably-minded consumers who may have a higher awareness of suboptimal food than the general consumer the implications ought to be applicable for them as well. However, in that case they may have to be altered slightly and have an increased emphasis on awareness. The *first implication* is to show that little goes a long way when it comes to skills in the kitchen and suboptimal food. While consumers may feel apprehensive about purchasing suboptimal food due to a perceived lack of skills it should be highlighted that suboptimal food does not require consumers to be professionals in the kitchen. Consumers do need to have some competences in the kitchen to cook with suboptimal food but that goes for all food and that needs to be highlighted when promoting suboptimal food. Suboptimal food is not a completely new type of food, it is just food that has lived a little before purchase. For those who wish for more relevant skills it should be perceived as something easy and fun to acquire. The *second implication* is to create positive associations around suboptimal food. Positive associations may remove doubt and hesitance connected to the suboptimality and instead focus on the positive aspects the food has. It could be achieved in-store through having a chef cook a meal out of the suboptimal food currently available in

that store to show the meals that can be made out of it. It could also be achieved through a marketing campaign that shows the upsides of suboptimal food, such as being wallet-friendly, while still providing delicious meals. Another alternative could be to provide a QR code next to the suboptimal food linking to a suitable recipe database or include the option within the grocery chain's own mobile application to scan the bar code of food to be directly taken to a fitting recipe. Tapping into consumers' competitive spirit could also potentially pay off if making meals out of suboptimal food is turned into a competition. This could both create positive associations of fun and excitement while also raising the awareness levels of suboptimal food. A *third implication* is the need to overcome the reticence among those who are no strangers to suboptimal food when found in their own kitchens and then use it but who do not buy it. It connects with the second implication in that suboptimal food found in grocery stores need to have positive associations. Positive associations may make overcoming the reticence seem easily surmountable and something consumers can benefit from in various ways.

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