Pictures and Perceptions of Household Food Waste
in Guelph, Ontario

By

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ABSTRACT

PICTURES AND PERCEPTIONS OF HOUSEHOLD FOOD WASTE IN GUELPH, ONTARIO

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Food waste in Canada is estimated to amount to $31 billion, with approximately half of this wastage occurring in households (Gooch & Felfel, 2014). As the desire for food waste reduction gains prominence in Canadian policy arenas, it is important to examine the household empirically, and contribute to theory-building for food waste studies as an emerging field. This research uses adapted photovoice interviews with 22 households in Guelph, ON to give insight into moments of transition between food and waste from the householder’s perspective. The study documents these moments of transition between food and waste; explores relationships between food and wasting behaviours in the household; and makes connections between household food waste and systemic and institutional forces. Using discard studies, critiques of capitalist agriculture, and feminist food studies, this study suggests that more creative and effective solutions to the food waste problem will emerge from rethinking household food waste generation.
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Chapter 1: Introduction

The Food and Agriculture Organization (FAO) reports that one third of food that is produced for human consumption is wasted (FAO, 2013). Food waste contributes to the release of greenhouse gas emissions and indicates an inefficiency in use of resources including water, fertilizers, energy, fuel, and land for farming (Cuéllar & Webber, 2010; FAO, 2013; Gentil et al., 2011; Hall et al., 2009; Kummu et al., 2012). Thus, food waste exacerbates issues associated with the continued expansion and intensification of agriculture, such as loss of biodiversity, soil erosion and nutrient depletion, loss of wetlands, and deforestation (FAO, 2013). Reducing food waste is implicated in issues of food security and has been identified as a crucial strategy for feeding a growing global population (Godfray et al., 2010; Parfitt, et al., 2010).

In addition to these concerns, the simultaneous existence of hunger and food waste emphasizes existing inequalities of the current food system. In countries with high incomes, wastage mostly occurs post-production in places like supermarkets, restaurants and the home (Parfitt et al., 2010). In particular, attention has been directed to the quantity of food that is wasted by consumers in households (refer to Parfitt et al., 2010; Quested & Johnson, 2012). Such work identifies the household as an important site of analysis for understanding influences on food waste production. However, scholars point out that little research has been completed at the household scale (e.g. Evans, 2014; Stefan et al., 2013). This is especially concerning considering the “privileging” of food waste reduction strategies targeted at the consumer scale that occurs in food waste reduction campaigns internationally (Alexander et al., 2013). It is important to consider how the food waste problem plays out at the household scale.
Food waste in Canada is estimated to amount to $31 billion, with approximately half of this wastage occurring in households (Gooch & Felfel, 2014). Researchers have asserted the importance of contributing to Canadian food waste studies (Abdull et al., 2013; Gooch & Felfel, 2014), while remaining aware of regional food and waste contexts (Parizeau et al., 2015). As food waste and the desire for reduction gains prominence in Canadian policy arenas, it is important to examine the household empirically, and contribute to theory-building for food waste studies as an emerging field.

1.0 Household food waste studies

Evans et al. (2013) emphasize that the relative upsurge in literature and policy on food waste does not mean that interacting with food waste is a new social phenomenon. Providing examples of cookbooks designed purely for leftover food and rationing requirements during times of war, the authors reveal that food waste and its management were at one time an integral part of daily life. They mark the 1950s as a turning point in the visibility of food waste. As cheap, surplus food, and capitalist consumption patterns became normalized, food waste disappeared from social consciousness. Evans et al. (2013) assert that interest in food waste by global organizations such as the FAO reveals that society is just emerging from a period of cultural and intellectual invisibility around food waste, which counters the historical norm.

Household food waste studies have emerged from a variety of academic fields. Here, I have identified two broad categories of household food waste studies. I first present quantitative observational studies that aim to understand the amounts and types of food that are wasted. They have generated categories of food waste, some demographic trends, and behavioural factors in households that lead to food wasting. The second group looks more specifically at the socio-
cultural aspects of food waste through ethnographic analysis. I then discuss how these categories and trends play out in regionally variable ways based on distinctions in socio-cultural food and waste practices.

1.0.1 Quantitative observational studies

Reports generated through the Waste Resource Action Plan (WRAP) in the UK have contributed significantly to the understanding and continued study of food waste production in households. WRAP identifies challenges with best-before dates, leftover consumption, portion planning, and shopping routines that lead to food wasting. From this research, Quested et al. (2013) identify behaviour characteristics of people who waste less food, and promote these behaviours through their Love Food, Hate Waste campaign (www.lovefoodhatewaste.com). Behaviours include shopping with a grocery list, checking the fridge before grocery shopping, proper portion planning, and proper storage of perishable food items.

The most commonly wasted food items in studies that examine food waste composition are vegetables, fruits, and drink waste. Bernstad Saraiva Schott and Andersson (2015) compared the footprint of various food items through their life cycle and make the important point that focusing only on quantities of food waste at the household scale does not take into account the front-end resources that go into food production. Some foods are more resource and energy intensive to produce than others. Focussing on reducing particular types of food waste, such as meat and dairy, is therefore important in the context of environmental impact reduction (Bernstad Saraiva Schott & Andersson, 2015).

Demographic trends have been identified within some food waste studies. Tucker and Farrelly (2015) observe that, in New Zealand, higher amounts of food waste are associated with
households with children. However, single occupancy homes produce the most waste per capita. These findings are mirrored by a study of households in Finland (Koivupuro et al., 2012), as well as one of households in Guelph, Ontario (Parizeau et al., 2015). Quested et al. (2013) and Tucker and Farrelly (2015) emphasize generational differences in the generation of food waste. In both studies, older generations produced the least amount of waste, which was often associated with lingering effects from war-time thrift practices. Koivupuro et al. (2012) link gender to food waste generation. They found that female single-occupancy homes generated more avoidable food waste, as well as homes where women were responsible for the grocery shopping. They offer hypotheses about care ethics and shopping preferences, but recognize the need for the trend to be studied further.

The moral and environmental debates that underpin the upsurge in food waste research can also be seen in discussions of food waste with householders. Doron (2013) reveals that environmental concerns about food waste are prevalent in some discussions of food waste. However, Quested et al. (2013) contend that environmental concerns are not a priority concern in the daily actions that lead to food waste production or prevention among UK households; in these studies, household economics were the primary concern driving food waste reduction. In contrast, the data from Guelph suggest that food waste was seen as primarily an environmental concern for a majority of participants (Parizeau et al., 2015). This emphasizes the importance of regional considerations in food waste studies, as will be expanded on shortly.

Food waste has been categorized as avoidable, unavoidable, and possibly avoidable in household food waste studies (e.g. Koivupuro et al., 2012; Parizeau et al., 2015; Quested et al., 2013). Unavoidable food waste includes parts of food that are not consumable upon purchase (e.g. bones, coffee grounds). WRAP also identifies a category of possibly avoidable food waste,
which recognizes the cultural underpinnings of certain food preferences that lead to arguably edible food going to waste (e.g. potato skins, broccoli stems). The focus of reduction campaigns such as *Love Food, Hate Waste* is on avoidable food waste, which includes food that was edible upon purchase but went to waste due to management or storage deficiencies. The amount of avoidable food waste generated by households varies across and within communities. It is estimated that 60% of food waste in UK households is avoidable (Quested & Johnson, 2012, p. 7). In Sweden, this estimate is 35% (Bernstad Saraiva Schott & Andersson, 2015, p. 222). Unpublished data from 2014 and 2015 audits suggest that 64% of household food waste is avoidable or possibly avoidable in the City of Guelph (K. Parizeau, personal communication, September 2, 2016). Bernstad (2014) articulates the importance of focusing on avoidable waste in household waste minimization strategies, recognizing that the household is also responsible for the management of unavoidable food waste that could be captured at any stage of the food supply chain. These categories can imply that avoidable food waste is produced through management error by consumers, and therefore the responsibility to reduce this food waste is placed at the household scale. Currently, the responsibility for the consumer to reduce avoidable food waste is assumed to be incited through awareness generation.

Studies have shown that when people are made aware of the amount of waste they generate, they feel concerned and intend to change behaviours (de Coverly et al., 2008; Quested et al., 2013). This has generated some hope that through social marketing campaigns, household food waste can be targeted and reduced. De Coverly et al. (2008) indicate that social marketing campaigns can be used to spread awareness and instigate concern for the issue. The UK’s *Love Food, Hate Waste* campaign has been very successful in boosting the awareness of the average citizen to the effects of food waste (Quested et al. 2013), and the campaign has since spread to
Metro Vancouver and Australia, with some discussions of bringing the campaign to municipalities in Ontario as well. Quested et al. (2013) acknowledge that the waste reduction impact of the campaigns cannot be separated from other influencers on waste behaviour, including rising food prices and economic fluctuations. Further, some scholars worry that these campaigns capture “public and policy imaginations” in ways that individualize the problem, and target reduction efforts disproportionately on the domestic sphere (Evans, 2011, p. 431).

The aforementioned studies give valuable insight into food waste problem areas such as high rates of fruits and vegetable wastage in the home, and potential challenges in reducing or preventing food waste depending on regional contexts or household characteristics. There is a need to understand food waste alongside these areas because quantities of food waste exist alongside subjective understandings of waste, and interactions with waste and food policies. For example, in their study of Guelph, Ontario households, Parizeau et al. (2015) identified that food awareness and waste awareness were associated with lower waste production, and convenience lifestyles were associated with low waste awareness. However, there were discrepancies in how this could manifest in waste audits. They found that convenience lifestyles that favoured eating out tended to produce more waste, while convenience lifestyles favouring pre-packed food produced less organic waste (presumably, prep-waste from prepared convenience foods appeared further up the food value chain, rather than at the household level). Their study emphasizes the wide range of influences on household food waste production and that there are various ways that waste becomes ‘invisibilized’ along the food supply chain, including in the household. Ethnographic and in-home studies help investigate how and why these nuances emerge.
1.0.2 Ethnographic studies

David Evans’s (2014) ethnographic work, “Food Waste: Home Consumption, Material Culture, and Everyday Life”, has been influential in conceptualizing the production of food waste in relation to other daily routines and social practices. His careful analysis of household practices reveals that consumers undertake a variety of actions to avoid wasting food (such as eating leftovers and ‘gifting’ food to family members), which stands in opposition to assumptions about a “throwaway society” (see also Gregson et al., 2007; O’Brien, 2013). Nevertheless food does become waste, but often through the process of first becoming surplus. Surplus accumulation is instigated by a variety of personal and institutional influences, and the ability to manage the surplus is a deciding factor in whether food becomes waste in the household.

Evans (2014) shows how consumers negotiate expectations of proper cooking with processes of decay and decomposition that occur with food. He reveals that attempts to preserve food from going to waste may instead lead to placing food into “coffins of decay” (p.69) which include Tupperware, fridges and other food storage containers. He discusses how food waste anxieties are mitigated through a process of forgetting. This forgetting allows food to become waste and then subsequently placed into a variety of waste conduits. Most importantly, his work normalizes food wasting so that it can be explored even in the mundane practices of everyday life.

Other notable ethnographic studies include work on leftovers and family relations (Cappellini, 2009), date labels (Milne, 2013; Watson & Meah, 2013), and green bin relations (Metcalf, et al., 2013). Calling on interdisciplinary studies that focus on re-use and circularity to
nuance the idea of disposal, Cappellini (2009) uses leftover consumption as an example of remaking in the home. She shows that leftover use incorporates discussions of thriftiness, devotion and love, food safety and food knowledge, and tradition. By doing this, she also affirms Munro’s (1995) contention that food disposal is part of the consumption process. Milne (2013) shows how date labels have evolved over time in their significance to various stakeholders involved in the food industry. At different periods of time, the consumer can be described as a particular agent of knowledge in the food industry. This is shown using a time-line starting prior to 1960’s when food labels had not yet been introduced, and leading up to today’s practices and understandings. Milne also discusses the anxiety that is caused by date labels and the challenges this poses to food waste management and health and safety. Metcalfe et al. (2013) show that green bins are not passive receptacles of food waste; rather they are material items with agency. Consumers respond to the agency of the green bin by managing its location, creating routines, or even rejecting the bin altogether. The materiality of the bin and its contents affects the use of the bin and therefore the adoption of policy changes. The analysis employed by these researchers reveals the value that close attention to food waste practices has on understanding social relations, and developing better waste management practices (as well as rethinking ‘waste’ problems).

1.0.3 Regional variability in food wasting

Spatial distinctions in food practices and across cultures are well represented in food scholarship. Recently, scholars have explored the ways that distinctive food practices effect the transitions between food and waste as well. For example, by thinking through waste first, Coles and Hallett (2012) discuss the importance of spatial and cultural dynamics that define food and
waste with regard to salmon heads. The authors contend that salmon heads start their “life” in the market as waste because they are always cut off with the filleting of the salmon flesh. It is only if they are purchased that the heads are (re)valued as food. This marks a dynamic distinction between food and waste. Institutional and cultural contexts have also been shown to influence environmental behaviours (Shove, 2010). We know that waste policy permeates across and through homes differently. Municipal policy leadership is an avenue to initiate household waste management behaviour. Phillips et al. (2002) describe the power of municipal ownership in creating the positive intention to change. Mohareb et al. (2008) show that residents respond to economic and structural incentives – which require government support – to change waste behaviours. Refsgaard and Magnussen (2009) show that attitudes regarding waste management practices differ across municipalities. Changes in municipal waste procedures can also affect waste policy uptake and implementation in the home because people build personal waste routines into daily practices of the home (Bulkeley & Askins, 2009). Therefore, the study of household food waste dynamics in place-based contexts is important.

Graham-Rowe et al. (2014) note that where research on household food waste does exist, most “has used methodologies that involve people being given closed-ended questions followed by a series of possible responses” (p. 16). While these methodologies have been foundational to food waste studies as a whole, they can limit the scope of complexity by pre-supposing problems and associations with food wasting in households. To advance food waste discourse and contribute policy relevant findings to the municipality and region, it is necessary to understand food waste production from the point of view of the residents who live there. This research asks: how do participants understand the transitions between food and waste in their households? Understanding food waste through participant-driven methods gives valuable insight into the
ways that people see food waste in their everyday lives, and respond to food and waste policies. Aschemann-Witzel et al. (2015) identify the lack of participant-driven information as a limitation of their review of household food waste studies. By having participants pay attention to the seemingly mundane, we can see how theories hold in different spatial contexts, and play out differentially across households. This creates space both for theory development in food waste as a field of study, and practical place-based applications.

### 1.1 Research aims and objectives

My research presented herein gives insight into the ways that people see food waste in their everyday lives by using adapted photovoice methodology (Wang, 1999). To gain this insight, I asked participants to document 12-24 moments when they noticed that their food was going to waste, as well as moments relevant to their household’s food waste story, over a two week period. The study was conducted in 22 homes in Guelph, Ontario. The City of Guelph has implemented the most successful waste diversion program in Ontario with 66.5% of all waste being diverted from landfill in 2014, the majority of which is organic (Waste Diversion Ontario, 2016). My research builds on an existing and ongoing study of household food waste in the City of Guelph that connects curbside waste weights to household surveys on waste practices and behaviours (see Parizeau et al., 2015). The aims of this research are to:

1. Document the moments of transition between food and waste in households in Guelph, ON;
2. Explore relationships between food and wasting behaviours in the household; and
3. Make connections between household food waste and systemic and institutional forces.

My study contributes to theory-building by drawing on grounded theory procedures during the iterative process of data collection and analysis. As data analysis progressed, a new research aim
emerged following the work of feminist food scholars. During data analysis, I aimed to interpret food waste using a feminist analytical lens. The analysis presented in Chapter 5 is a direct outgrowth of this conceptual aim.

The dissertation follows in five further chapters. The next chapter provides a theoretical framework, introducing grounded theory and the sensitizing concepts I have used in my research (in particular, how discard studies, critiques of capitalist food systems, and feminist food scholarship can enhance the study of household food wasting). As the methodology used for this research is an outgrowth of these theoretical sensibilities, it too is described in Chapter 2. Results and discussion are developed around each of the theoretical sensitivities and presented in the following chapters respectively. Chapter 3 reveals the categories and contexts of food waste that participants identified in their food waste stories. This chapter emphasizes the importance of paying attention to the visceral responses people have to food as it becomes waste. Chapter 4 addresses systemic and institutional influences in households while accounting for the highly personal and individualized responses that people expressed around the responsibility to reduce food wasting. Chapter 5 interprets the data using a feminist analytical lens. The findings establish food waste as evidence of foodwork and food waste management in the home. Finally, conclusions from this research are presented in Chapter 6 along with recommendations for policy and future research.
Chapter 2: Theoretical framework and methodology

I approached this research using constructivist grounded theory principles. Grounded theory is “[a] systematic inductive (data-led) approach to building theory from empirical work in a recursive and reflexive fashion” (Hay, 2010, p. 377). Graham-Rowe et al. (2014) have successfully used grounded theory techniques to remain open to emergent categories and have contributed knowledge of motivations for reducing food waste. Photovoice methodology (Wang, 1999) was chosen for this study to help fill the knowledge gap in understanding transitions from food to waste from the participants’ perspectives. Photovoice complements grounded theory by focusing attention on the experience of participants. The inductive and empirical approach of both grounded theory and photovoice make important contributions to my research because relationships with food and waste are highly influenced by regional factors such as waste management systems, cultural norms, and the food retail landscape (Parizeau et al., 2015). Much of the research and theory development around household food waste production has come from European countries, and particularly the UK, given its development of the Waste Resource Action Plan. There is still much space to grow the theory and enhance the understanding of household level dynamics of food wasting. This chapter continues by describing the specific theories that informed my data collection and analysis. These theories also inform the subsequent chapters. Methods of data collection are described following.

2.0 Theoretical approach

Constructivist grounded theory recognizes that researchers do not enter study from a neutral place. Rather they are often well placed within a field of study or have reviewed the
relevant theoretical and empirical literature before proceeding with data collection (Strauss & Corbin, 1990). The use of constructivist grounded theory is useful for exploring relationships between food and waste experiences because findings consider the research already conducted in the field while remaining open to areas for theoretical and empirical growth. This means findings are not pre-supposed based on previous studies. Rather, theoretical analyses fit the empirical reality presented during research (Charmaz, 2008). To balance pre-existing knowledge with the possibility for theoretical and empirical growth, researchers using constructivist grounded theory must acknowledge their theoretical sensitivities.

Theoretical sensitivities include professional, personal, and academic engagements with the topic of study prior to research. Theoretical sensitivities are a valuable starting place for research as they can be used to guide research questions, initial interview questions, and data analysis. The following are sources of theoretical sensitivity that I used throughout this research process.

I was a research assistant for a larger study on food waste in Guelph, Ontario conducted by the Guelph Food Waste Research Group. The study focused on household behaviours leading to food waste production (Parizeau et al., 2015). During this time I conducted surveys and collected curbside waste weights from households in various neighbourhoods in Guelph. The survey data collection process gave me insight into the depth of conversations that people were able to have about their food waste in a one-on-one setting. I reviewed theories of waste and empirical studies of food waste in my final year as an undergraduate student for an Independent Study course and further focused this review on household food waste production during the first year of my Master’s program. This review directed me toward understanding food waste as an everyday occurrence in households, as opposed to framing it as a purposeful and/or amoral act,
as often occurs in mainstream discussions. As a resident of Guelph, Ontario, I am familiar with the food and waste landscapes of the City, as well as their transformations over the last 6 years. Finally, despite extensive engagement with food waste scholarship, I am also a “food waster” in my own household. All of these experiences contribute to my knowledge and understanding of food waste.

Theoretical sensitivities are also gained through prior and purposeful engagement with literature. I entered data collection with a priori commitments to investigate food waste using theories from discard studies and critiques of capitalist food systems. This broadened my understanding of both food and waste scholarship, and sensitized me to conversations occurring in these fields of study. As I progressed with data collection and analysis, I discovered ties between the interview content and feminist food scholarship. Engagement with feminist food studies is an outgrowth of the non-linear and iterative research process that grounded theory supports.

2.0.1 Discard studies

Discard studies scholars are aware of the crucial role that waste plays in economic strategies. It is this recognition that allows waste to become a productive lens for thinking about problems relating to production and consumption. Waste is typically understood to be an end point (or the other side of production and consumption) in a linear supply chain. However, many authors complicate this notion in their examination of reuse and cyclical or networked supply chains (e.g. Bulkeley & Gregson, 2009; Crang et al., 2013; Lepawsky & Mather, 2011). As a whole, the developing field of discard studies “holds that waste is not produced by individuals and is not automatically disgusting, harmful, or morally offensive, but that both the materials of
discards and their meanings are part of wider sociocultural-economic systems” (Liboiron, n.d.). Discard studies show that waste is a subjective and non-static concept; there is nothing materially inherent about waste. More appropriately defined, ‘waste’ is a temporary classification of something that we “no longer want to be connected to” (Hawkins, 2006, p. 75) or a “material-semiotic placeholder, a category that objects may move into and out of” (Lepawsky & Mather, 2011, p. 247). This perspective reveals how the production of knowledge around waste creates a management discourse. In seeking to break our connection to waste, and discard what has been deemed valueless, networks of removal are developed to distance us from our waste (de Coverly et al., 2008).

The management of waste implies that it does not belong. It is something that must be expelled from sight. Thus once waste is defined in a static and oversimplified way it is silenced and rendered powerless and invisible through a variety of management processes. Scholars contributing to discard studies challenge static notions of waste in their research. Similarly seen as an inherently morally corrupt or offensive act, food waste is both materially and socially constructed, and is imbued with rich socio-cultural meanings that remain under-explored (emphasized by scholars such as: Alexander et al., 2013; Evans, 2014; Watson and Meah, 2013). Food moves through a variety of interfaces that can emphasize or obscure the production and impact of waste; these interfaces need to be explored further.

2.0.2 Critiques of capitalist food systems

We have a personal relationship to food due to the fact that it is required for the sustenance of life. Since food is such an integral part of our lives, cultural relationships and unique social practices around food have formed over generations (Germov & Williams, 2004). Thus the value
of food can be attributed not only to its ability to provide adequate nutrition, but also to its cultural, social and/or spiritual sustenance. However, under a capitalist system of production and trade, all of these values are stripped away and food is transformed into a commodity that drives economic growth. Thus the value of food is attributed to its exchange value and its ability to obtain and accrue profits in the market (Gunderson, 2011). This has significant impacts on the structure and place of food in society, and our understandings of, and relationships to, food (Winson, 1993).

Pursuit of profitability has occurred to such an extent, so argues Mudry (2006), that food is no longer produced for its nutritional, taste, or social value anymore; it is only produced for profit. Studies show that, when faced with budgetary restraints, price remains the most important aspect of food for consumers as well (Dowler, 2008). Therefore, consumers must sacrifice nutrition, taste, and social values of food in order to participate in capitalist food consumption, or otherwise pay a higher price (Dowler, 2008). Any characteristic of food other than its profitability is not important, unless said aspect is more important to the purchaser of the food commodity.

The work of Jaffe and Gertler (2006) draws attention to consumer deskillling to make apparent the power dynamics at play in the Canadian food system and its transition over time. They connect the transition of the food system to food marketing campaigns designed to construct the perfect consumer of processed, packaged, and/or ‘industrially transformed’ foods. They emphasize the gendered dynamics and impacts of these marketing campaigns with regard to the domestic sphere. Women’s culinary skills were reconstructed to rely on acts of purchase to care for and feed their family. Furthermore, Barndt (2008) emphasizes the limited knowledge that consumers can have over their food when the distance and processing involved in food
production have increased with a globalized, capitalist food system. The complexities and power dynamics of this food system are hidden, and environmental and social problems continuously arise from the profit-driven structure. All of these things place the consumer within a limited scope of agency when making decisions about what to put on the dinner table.

Yet solutions to systemic environmental and social problems with the food system repeatedly target the individual. The consideration of capitalist trends and power dynamics is important for household food waste studies because there is a trend developing wherein consumers are expected to be able to make smart decisions around their food so that their waste does not become a socio-environmental burden. Exploring how food comes to be commodified and the effects that commodification has on our relationships with food is a requirement for understanding food waste. The transformation of food into commodity and the eater into a purchaser is an important part of what allows food waste to exist to the extent that it does in the world. Commodity cycles and acts of purchase in capitalist market systems depend on the production and normalization of excessive wasting, but this is not often recognized (Gille, 2012).

Supply chains are so complex that it is impossible for the consumer to understand the intricacies involved in their food’s production and waste impacts. Also, the limited industrial products available for purchase at capitalist food outlets constrain consumers’ ability to mitigate the amounts and forms of foods that they bring home from the store.

### 2.0.3 Feminist Food Studies

My research has also been informed by my continued commitment to feminist politics and research practice. This commitment has led me to the recognition of gendered dynamics around food wasting, which necessitated exploring the feminist literature in food studies. Feminist Food
Studies is a field of study that, broadly speaking, brings together food studies and women and gender studies. This field has brought women's voices into the study of food, and has grown to contextualize relative power imbalances through an intersectional lens. In a review of the field, Avakian and Haber (2005) show how the incorporation of women and food studies gives “insight into both women's lives and the contexts in which they are embedded” (p. 22).

In the context of the household, the research of Marjorie DeVault (1950) has had particular influence on studies of gendered work with regard to food and family. DeVault’s research illuminates the ‘foodwork’ that women do as a form of both care work in the family and physical maintenance of the home. Thus, recognizing foodwork as work contributes to understandings of household labour division. Beagan et al. (2008) explore the division of labour in three ethnocultural groups in Canada and find that, in all three, women still hold primary responsibility over foodwork. Their final remarks are important to keep in mind, as the division of labour in Canadian households is often justified using subtle gendered cues:

For decades, scholarship in the area of domestic labour has assumed gender inequities will diminish over time, yet this does not appear to be happening. Rather, traditional gender roles seem to reinvent themselves in new guises. While it is no longer acceptable in many sociocultural groups to assume domestic work is inherently women’s work, the same gender expectations persist in more complex forms, couched in terms of individual choices, standards, and preferences (p. 668).

Presumptions of growing gender equality can undermine the impetus behind gender awareness in research; however, scholars continue to reveal the ways that gender impacts Canadian society (see also McPhail et al., 2011).

Lewis (2015) warns that the incorporation of gender into research without intersectional feminist reflection can still create positivist results which seek to ‘manage’ social experience. She reminds “[i]nterdisciplinary work on gender and food encourages us to make connections between the materialities of food and discourses around food and eating” (p. 424). Thus, feminist
food studies incorporate gendered politics into food studies while also questioning ways of knowing and creating knowledge around food. Pulling from and contributing to the work of feminist geography, Hayes-Conroy and Hayes-Conroy (2008) have used feminist politics to delve into the visceral realm of food through taste. They make connections between power in the food system and the way(s) power combines with individual experience to produce a politics of food in eating. Using food as their entry point, Hayes-Conroy and Hayes-Conroy (2008) assert that “paying attention to the visceral realm can reveal different kinds of knowledges and sensitivities that may be used to inform and enhance political decision-making and lead to more effective socio-political organizing” (p.469).

Waitt and Phillips (2015) have recently extended visceral politics to their study of food waste – albeit drawing more from feminist analytics than a feminist politics – that examines intersections of power and agency. Their approach makes a much needed “shift from tendencies to infer household behaviour and attitudes from measured quantities of wasted food to a close examination of practices and their implications” (p. 4).

In summary, discard studies, critiques of capitalist food systems and feminist food scholarship have all contributed to my knowledge base as a researcher studying food waste in the household. These perspectives are important when considering and investigating food waste transitions in households, particularly around:

1) The social construction of food waste in households;
2) The emphasis placed by media, educational campaigns, and mainstream public perception on the problem of food waste at the household scale; and,
3) The gendered dynamics at play in both problem framing and proposed solutions for household food waste production.

Each of these themes are explored in-depth in the following three chapters respectively. I now turn to the methods of data collection and analysis.

2.1 Data collection

Photovoice is useful for studying household food waste because it provides the opportunity for research participants to self-identify moments of waste and curate their household’s food waste story. The blending of photovoice methods with grounded theory has been undertaken by researchers in the health sciences (Warne et al., 2013), and in other fields as a qualitative research method. Cameras used in photovoice allow for discoveries to be made without the presence of the researcher. This is useful in studying food waste in households due to the private nature of waste in society. This helps to build theory because the context around which food wasting will occur is not framed by the researcher. Photographs can be used by participants to ‘capture a moment’ that includes feelings, moods, and contexts around the specific visual imagery in the photo, and be discussed later in the interview (Latham, 2004). This is particularly useful for studying food’s conversion to waste because often the moment leading to the act of wasting is created through a series of emotional, practical, and circumstantial negotiations (O’Brien, 2008). Further, because participants are responsible for taking photos, participants are involved in empirically checking applied theories. The following sections describe each stage of data collection involved in this study.
2.1.1 Study recruitment

Information collected through the research conducted by Parizeau et al. (2015) served as the access point to research participants. Primary recruitment consisted of follow up emails with participants who had taken part in a door-to-door food waste survey. My intention was to recruit participants who expressed interest in discussing their household’s food waste. Purposive and self-selection strategies bias toward people who are most interested in the project and willing to commit to the amount of time and self-reflection needed to provide articulate insight (Bryant & Charmaz, 2007; Elliott & Higgins, 2012).

Eight people responded to the initial call for participation, and preliminary meetings were set up to discuss the project. Once they had participated in the study, participants were asked to pass along the contact information of the researcher to others in the City of Guelph who they thought might be interested in participating in the study. At first, neighbours and friends of participants were added to the study. Five participants were recruited in this initial stage of snowball sampling. After requesting that participants put out another call for new participants, one participant posted the study to a Facebook group they belonged to called “Frugal Mommy”. Nine additional study participants were recruited through this Facebook post. In total, I conducted 22 series of interviews. A full list of participants and descriptors can be found in Appendix A.

2.1.2 Preliminary interview

Participants were asked to meet with the researcher 3 times over the course of the study. The first meeting introduced the study and provided a space for participants to ask questions.
During this time, food waste surveys were conducted with the 14 participants recruited through snowball sampling. The surveys asked questions about household waste management behaviours, shopping and planning routines, environmental beliefs and attitudes, and demographics. This information had already been recorded for the 8 primary participants during the study by Parizeau et al. (2015). Their demographic information was confirmed, and they did not have to take the survey again. The preliminary survey ensured that all participants had a similar exposure to food waste themes, and that similar baseline data was collected from all participants.

Participants were also given a photo assignment at the preliminary meeting. Participants were asked to take 12-24 photos of moments when they noticed that their food was going to waste, or of anything else they perceived as relevant to their household’s food waste story. Participants were asked to keep track of any thoughts they had about their food waste while taking photos in a small notebook that was provided. Participants were told they were the experts and curators of their story, and that no photo was incorrect as they would be explaining their reasoning during the interview. Participants were encouraged to focus on food items more than food packaging materials.

2.1.3 Photo collection

Over a two week period, participants took photos of their food waste based on the photo assignment. Two check-in/reminder emails were sent over this time to keep the project fresh in participants’ minds. The majority of participants used their phone or a digital camera to take pictures. These photos were sent to the researcher by email, or transferred via USB stick at the time of the interview. One participant used a disposable camera provided by the researcher.
These photos were developed and brought to the interview by myself. The majority of participants remained within the 12-24 photo range. The least amount of photos taken was 10, and the most taken was 23.

2.1.4 Semi-structured interviews

Photovoice studies are typically coupled with focus groups; however due to the private nature of waste in our society, I employed semi-structured one-on-one interviews. After two weeks, I conducted these interviews with each participant. The interviews were based on the photographs participants took. The flexibility that semi-structured interviewing affords lends itself to the grounded theory framework because the conversation is directed by the research participant. An interview guide was developed building on the SHOWed acronym developed by Wang (1999) for use in photovoice studies, and informed by the above outlined theoretical sensitivities. The SHOWed acronym follows the progression from descriptive to analytic. It starts by asking: What do you see here? It then progresses through: What is really happening here; How does this relate to our lives?; Why does this situation, concern, or strength exist?; and finally, What can we do about it? Sample questions are provided below.

Examples:

- What is this a picture of?
- Why did you pick this picture to share?
- What was the lead up to this food wasting event?
- What are the main food waste themes you found from taking pictures of your food waste?
- Is there anything you could have done to prevent this waste?
All participants were asked if they would release their photos to me for use in publications and knowledge dissemination; all participants agreed and signed the photo release form. At the time of the interview one participant did not share the photos with me; their descriptions of the photos remain a valuable source of data in the study. The released photos have been incorporated into my thesis so that the complexity of responses can be synthesized with the aid of visuals.

2.1.5 Final meeting

Member checking took place during the final meeting with participants. Participants were given the opportunity to look over the transcript of their interview and provide any final thoughts or clarifications and to make corrections if necessary. Participants were given a $50 gift certificate to a grocery store of their choice in compensation for their time. It was expected that this amount would adequately compensate for a participant’s time without overly incentivizing participation on the grounds of compensation.

2.2 Data analysis

All of the data were recorded, transcribed, and then open coded using the software program NVIVO. NVIVO allows for simplified data retrieval while maintaining the intimate engagement with data that is required for good theory development. It is also appropriate for the storage and incorporation of photographs into analysis (Vasily et al., 2007). However, coding photo content by the researcher leaves too much room for interpretation. Nykiforuk et al. (2011) remind that the photos are of little use to the researcher without the participant’s accompanying interpretation. Therefore the content of the photos was not coded separately from the interview
content. Instead the photos were treated as a document that helps to contextualize the interview (Belon et al., 2014; Nykiforuk et al., 2011).

Grounded theorists caution that researchers must do their due diligence to ensure that the point of saturation is a result of good theoretical foundations, and not because data have been overlooked or ordered into an inappropriate concept (Bryant & Charmaz, 2007). While conducting research I consistently checked trends between the household experience of Guelph participants and those of participants documented in the existing food waste literature. I was also able to remain open to new themes in the coding process and to use the demographics of the participants as an opportunity for emergent theory building.

Photovoice engages participants in the thematic coding process. When taking photos, participants were asked to curate their own household food waste story to draw out important trends. For example, rather than taking a picture of toast crust every day, they could bring one photo to the interview and discuss the prevalence of the moment throughout the study period. Direct descriptions of photographs and the moments surrounding the photographs informed the descriptive codes used to analyze the data. Participants were asked to identify and reflect on themes in their photos during the interview. These reflections informed the analytical codes that I used to interpret the data.

2.3 Research challenges and limitations

The challenges and limitations of this study include sample size and characteristics, social desirability issues concerning food waste, and methodological constraints. Recruitment relied heavily on the Facebook group “Frugal Mommy,” which biased my sample toward women with children. While this potentially directed my sample characteristics, it also provided the
opportunity to develop a more cohesive analysis. Nevertheless, it is important to emphasize that this analysis is based on a small and relatively homogenous group of people in Guelph. The sample is not representative of the Guelph population, and the small sample size is a challenge for comparison. Furthermore, the time commitment required to participate in interviews incorporating photos may appeal to certain demographic groups and leave out important and diverse voices (Nykiforuk et al., 2011). This is an important limitation to address in future research and theory substantiation.

Food diaries have been used by academics as a method for self-reporting food waste, and the constantly stated limitation of this approach is the issue of underreporting the volume and types of waste generated in the home (Quested et al., 2013). While I did not seek to record such quantitative data, this concern does bring up an important limitation to researching waste in general, which is that people are very private about their food waste (de Coverly et al., 2008; Evans, 2012). Ideas about social shame may certainly have had an effect on what participants chose to talk about in the interview.

This study took place over the summer and fall. I was only able to get a two week snapshot of participants’ food waste stories in this time. As food waste is embedded in the rhythms of everyday life (Evans, 2014), it is important to capture variability. Future research could explore variability in food waste stories over longer time frames, and during seasons of exceptionality (such as holidays).

A fully-formed grounded theory would necessitate going back to research participants to further explore preliminary theories that emerge in data analysis. While I member checked transcripts and initial trends with participants in a third interview, the analysis (presented in
Chapter 5) developed over the course of analysis to explicitly acknowledge gender and foodwork. Theory saturation comes from constant comparison against literature and other interviews conducted during various stages of the research. My analysis complements and contributes to literature on gender and foodwork, however it remains preliminary because, due to time constraints, I was only able to conduct one in-depth interview with participants. The analysis should also be checked and added to take into consideration a larger sample size and/or demographic variation.
Chapter 3: Assessing transitions between food and waste

This chapter outlines the primary ways that participants in this study made assessments about their food going to waste. These assessments were captured in photos and discussed in interviews. By discussing momentary assessments of food waste the transition between food and waste can be better understood. Findings indicate that participants used sensory indicators to assess whether a food item would become waste. They also had routine categories and contexts around which food wasting occurred. However sensory interactions, and categories and contexts of food wasting do not adequately capture all that was inscribed in a picture of a moment of waste; thus the visceral experience of food waste became an important component to pay attention to. Recently, Waitt and Phillips (2015) have taken a visceral approach to studying household food waste and refrigeration. Their study results closely reflect the experience of participants in this study, thus section 3.2 “Visceral experiences of food wasting” builds from their description of visceralties. This section also incorporates a discussion of how visceral experiences help make connections between the social construction of waste and the material qualities of food that render it edible or inedible.

3.0 Sensory interaction

When asked to describe why the food in the photo was waste, participants described sensory interactions they had with the food when they wasted it: the look, smell, taste or physical feel of the food gave them reason to categorize it as waste at the time. These sensory interactions were in response to both the material decomposition of the food items, and/or their judgement of the aesthetic of food items. For example, complete material decomposition of an item often acted
as the most justifiable reason for a food item to be deemed waste (e.g. it was completely rotten), but aesthetic standards varied amongst participants. Appearance, or the aesthetic, of the food was commonly described using labels such as “a bit mouldy”, “wrinkly”, and “brownish” (or generally off colour). These aesthetic descriptors affected respondents’ perceptions of how quickly an item should be used, whether it needed paring, or if it should be thrown out.

Smell was a factor when it was overwhelming or “not quite right”. Smell was linked to items going rancid or “off” and led to more immediate disposal. In some cases the participant would discover through touch that an item should be disposed of. For example when bread went hard it was considered stale and beyond use, or when fruit was very soft, it was considered too ripe to use. Participants relied on taste as well. In some cases taste was the original signal that came as a surprise such as when one participant found out their chips were stale and decided to dispose of them. Sensory judgements affect consumption and waste trajectories for food.

3.1 Pre-defined moments of waste

Beyond sensory engagements in the moment, it was clear that there were pre-defined categorical and contextual judgements of food/waste distinctions. The most common and predictable categories and contexts for wasting included peels, trim, bones, coffee grounds, tea bags, and stems. Also common was plate scraps and full portions that had been plated – especially when touched by children. More variable categories across households included untouched leftovers. A standout context for food wasting was fridge, freezer and cupboard cleanout days. This is not to say that waste is guaranteed in these situations, but the likeliness of wasting is heightened.
3.1.1 Peels, trim, bones, coffee grounds, tea bags, shells

When I asked why participants decided to include photos of peels, trims, bones, coffee grounds, tea bags and egg shells in their food waste story, some participants were confused, expecting that there was no need for explanation. Others explained that they associated these parts with waste because of their eventual placement in a waste conduit. For example, Participant 8 describes the following photo by saying:

Figure 1 “We can’t eat the bones”, Participant 8

I didn’t think about in like as the view of waste, because we can’t eat the bones. But at the time it was a picture, so I’ll include it (laughter). It did go into the green bin! But it’s really not waste is it? Or do you call it… or is it? (CF-08)

Most participants had a similar kind of hesitancy around defining food as waste in this category. They felt that this category was not truly waste because these parts did not have
potential for consumption to begin with. These are the types of things that participants considered to be unavoidable food waste as it was more of a “by-product” than a sign of mismanagement on their part. Items described as by-product, or unavoidable, include fruit and vegetable peelings and cores and/or pits, parts of meat that were trimmed before cooking, coffee grounds and tea bags after use, egg shells, and any stems or leaves that needed to be removed (such as the tops of strawberries). In some cases, this category made up the majority of participant’s photos.

Items like shells, coffee grounds, tea bags and bones are typically classified as unavoidable with some discrepancy around items that are possibly avoidable (Quested et al., 2013; WRAP, 2009). Unavoidable food waste is food that is “not usually eaten” while possibly avoidable food waste includes “food that is eaten in some situations but not others, such as potato skins” (Quested et al., 2011, p.461). As mentioned in Chapter 1, there is discrepancy in the literature in how to define the middle ground of possibly avoidable as there are many socio-cultural norms that build up this category. This discrepancy could be seen in the photos of participants in Guelph. For example, one participant showed a photo of peeling their peaches. I have always eaten the skins of peaches and had never seen this before. When questioned about it the participant said it is just what she has always done and would never think of not doing it. Similarly, Participant 10 revealed that she does not use the stems of broccoli despite knowing that it could be used for other things (Figure 3).
Figure 2 Broccoli stems unused, Participant 10

Participant 17 made soup stock out of the turkey carcass before placing it in the green bin (Figure 2). By using the carcass for a second meal the bones were able to be discarded without being considered waste.
Situations like these call attention to subjectivities of use values, “cultural conventions” (Evans, 2014), and highlight the particular food preparation skills and preferences within the home that lead to the development of pre-defined waste categories. Potentially avoidable instances of waste draw attention to the social construction of waste. As discussed in Chapter 4: Systemic Influence, waste systems have power over discourses of waste and wastefulness. For participants in this study, peels, trim, bones, coffee grounds, tea bags, and shells were expected and described as more unavoidable and less wasteful than the following categories. Nevertheless, they were still considered waste items.
3.1.2 Children’s meals

Due to the demographics of participants, which include many families with young children, there were many photos of children’s meals in participants’ food waste stories. Participants discussed their young children’s food waste in a categorical manner as it was a routine occurrence in their household. Children’s food waste highlighted the ambivalent feelings participants had toward food waste production. While elements of guilt certainly emerged, it was expected that small children would leave portions on their plates as they had constantly changing food preferences and levels of hunger that could not be predicted. Furthermore, children’s meals were described as visually unappealing, contaminated with fingers, and not worth saving (e.g. Figure 4).

Figure 4 Children's leftover meal portions, Participant 21
By being “mucked about with”, children’s meals became a more easily waste-able category of food. Despite these descriptors, some participants mentioned eating food off their children’s plates after a meal. At times this was done through inconspicuous snacking throughout the day, and other times to purposely finish what was on their plate. A number of parents had specifically made an effort to stop this after noticing the amount of “extra food” they were consuming. This marks a fluctuation between food and waste as items get judged by children, and then their parents, as being edible or inedible. Children’s plate waste also calls into question who is responsible for the production of waste. Particularly when conversations with participants surrounding the categorization of children’s food as waste centered on the importance of feeding and eating. The significance of these considerations will be elaborated on in Chapter 5: Food(waste)work.

3.1.3 Leftovers

I am highlighting leftovers as a pre-determined waste category because the classification of food as leftover is part of the transition from food to waste in many cases (Evans, 2012b). Food in the category of “leftover” is more wasteable because it has been cooked, reheated, sitting in the fridge, or eaten many times over, to the point of boredom (Cappellini, 2009). When asked which photo would be the most typical for their household, Participant 16 responded:
Figure 5 A little bit of leftover stir-fry, Participant 16

[…] probably the stir-fry. A little bit of leftovers that we didn’t finish before it went bad. Because I was not as fond, or we just had so much of it, and ate it too many days in a row. And that one last scoop of it, or whatever, was just not gotten to before it went bad. Probably our most common form of food waste. (CF-16)

Like Participant 16, most participants tried to save their leftovers in containers in the fridge for expected later consumption. One participant noted that the category of leftover in and of itself was a reason to waste. This participant articulated that the people in their household would not eat leftovers in many cases so it was pointless to stow the food away in the fridge. The degree of success for using leftovers once they had been stored away varied amongst participants, and many images of well-intentioned leftovers gone to waste were discussed during interviews. Leftovers were often discovered in the back of the fridge, or purposely removed after considering whether anyone would eat them. Like children’s food waste, leftovers were discussed categorically, but the discrepancy in leftover consumption/non-consumption highlights the social construction involved in food waste production in relation to judgements about good
food, and household capacity to make use of leftover portions (for in-depth sociological analysis of leftovers see Cappellini, 2009).

3.1.4 Fridge, Freezer and Cupboard Cleanout Days

As Bulkley and Gregson (2007) have shown, there are many items considered to be of no use that get stowed away in homes. Only through a process of identification and assessment do these items become waste. Evans (2012) has linked this logic to food waste by reminding that fridges, freezers and cupboards can be liminal spaces between food and waste, but “when households categorize something as ‘non-food’ – no matter how subjectively – they demarcate it as ‘excess’ and this is consequential insofar as the item in question is sent in the direction of the waste stream” (p. 65). Thus, fridge and freezer cleanouts emphasize the importance of identification of food as waste in the process of food becoming waste. The image below (Figure 6) shows when Participant 15 undertook a clean-out day during the study. She mentioned that she would do this approximately once a month:
So it was just a clean out of fridge, freezer, cupboard day and I just threw everything into one pile while I was doing it […] the waffle box is empty. The grapes got stuck in behind something in the fridge, and I forgot so they went bad. And then it’s a bunch of packaging from snacks. Because I buy all my snacks at Costco, the boxes are way too big and tonnes of garbage, so I just throw them out instead of keeping them in my cupboard so it doesn’t take up all this space […] What else is there? There are some frozen burritos that were in my freezer that just never got eaten so they ended up in the garbage, some freezer burnt pizza pockets[…] that box of fudgecicles is actually three-quarters full, but they are really old and freezer burnt so they ended up in the garbage too. (CF-15)

Cleanout days provide an opportunity for evaluation of food and therefore an opportunity for waste for participants (Waitt & Phillips, 2015). The fridge cleanout is a heightened time of disposal which incorporates aforementioned sensory interactions with food (e.g. freezer burnt, rotten), and pre-defined wasting categories (e.g. leftovers that are not getting eaten). In some cases, without a conscious effort to clear out food storage spaces, many items would remain hidden in containers, or behind other items, and never have the opportunity to be evaluated and categorized as waste. The likeliness of these cleanouts occurring around garbage days or
shopping days emphasizes the influence of food and waste systems in the physical and temporal flows of food waste, as will be discussed further in Chapter 4: Systemic influences. Participation in this study also influenced the flow of food waste for some participants. Participant 12 disclosed that most of her photos had been taken shortly before our interview. She realized that she did not have many photos and decided to take a quick look in the fridge and came up with 13 more photos. In the end this participant commented that she needed to “make a bigger effort to clean out her fridge more often” (CF-12). There were no doubt many times when I could have asked participants to do a specific sweep of their fridge (or “fridge rummage” (Evans, 2011) to look for any food waste; however, doing so would mask the revelation that moments of wasting for householders are created through their decisions to waste, which occur at multiple moments and sites within the home. Thus the self-identified fridge, freezer and cupboard cleanout draws attention to the subjective timing of food waste and understandings of waste from the participant’s perspective.

While participants often spoke of their photos as being obvious moments of food wasting, it was clear that the sensory interactions, and categories and contexts of waste converged in a more-than-logical way. There was another element of food wasting which was often caught up in participants’ pauses, tone of voice, body movements, and attempts to grasp at the right word. These responses necessitated attention to the visceral elements of food wasting that contributed to participants’ food waste stories.

### 3.2 Visceral experiences of food wasting

Waitt and Phillips (2015) have explored visceral experiences with food wasting with specific attention to acts of disposal around refrigeration. They describe the visceral response to
food waste by a participant in their study as “embodied knowledge involved in judging edibility, the variability of such assessments, and the affective force of food transforming through cellular and bacterial processes” (Waitt & Phillips, 2015, p. 2). This section will show how senses and experiences/histories with food and waste come together in a visceral moment of food waste. With particular attention to the development of taste affinities, Hayes-Conroy and Hayes-Conroy (2008) assert that:

> In the visceral realm, representations join and become part of old memories, new intensities, triggers, aches, tempers, commotions, tranquilities. In the visceral realm, representations affect materially. The visceral body feels them as intensities that have an impact on tasting. (p. 468)

In this study, participants noted that taste was used to decide whether a food item was worth eating or not. In some cases taste acted as a justification for forgetting about a food, with comments indicating that the food item “wasn’t that good anyhow” (see ‘Purposeful forgetting’ in Evans 2012). The taste of food items, particularly fruits and vegetables, influenced the amount of the item that would get consumed, which in turn could lead to wasting. For example, corn was wasted because it was “woody” (CF-11) and watermelon was consumed in entirety when “red, juicy, [and] delicious” (CF-05). Thus, the visceral intensities Hayes-Conroy and Hayes-Conroy (2008) have identified around tasting food also have an effect on the material afterlife of food. Other common visceral intensities around food wasting include overwhelming sensations, such as disgust, that manifest and influence trajectories of wasting. But, as will be discussed, attention to visceral elements of food wasting calls attention to the wide variety of experiences people could have around their waste (which in a later paper Hayes-Conroy & Hayes-Conroy (2013) refer to as “visceral topography”).
Visceral responses followed by food waste identification and disposal were triggered by the sight of fruit flies, mould, or the inhalation of a strong rotting smell in participant’s food waste stories. For example, the experience of encountering disgust can be seen and described through this photo and story:

**Figure 7 "Oh my god, those are done", Participant 22**

Ok well this is going to sound gross (laughter), these plums were leaking all over our counter. The bottom ones had actually started turning into juice. They were gross and they were covered in fruit flies. So yeah so they had to go. The top ones had like little specks or chunks out of them which the fruit flies were all over. So it was definitely, it wasn’t even on the fence, it wasn’t a maybe, it was like an: oh my god those are done. (CF-22)

The sight of fruit flies in this case produced a reaction that meant there was no way the plums were going to get eaten. Waitt and Phillips (2015) discuss how processes of decay are “reminders of foods’ vitalities” (p. 2). The response to such reminders can vary greatly depending on the food item, as well as the person handling the food, and affect waste production
and disposal trajectories. Participant 2 was fairly diligent in paring foods when she noticed mould or was not pleased with the appearance of the food item. Nevertheless the emergence of an unfamiliar encounter with food provoked some uncertain scenarios that led to disposal:

**Figure 8 Vegetable parings, Participant 2**

I cut up a little bit more of the red onion because it was a little bit milky. I looked it up afterward and it’s fine, it just means it will have a stronger flavour to it. But I didn’t like the look of it at the time. So I did cut off a little bit more because it was milky, and I had never ever seen that in an onion before. (CF-02)

Here the milkiness of the onion prompted the participant to be more liberal in her paring of the onion; a minor adjustment, but a change nonetheless. Visceral responses can also contribute to disposal of waste into a particular conduit as described here:
This was apple sauce that had been in the fridge for a very long time. And I looked at it. I was afraid to open it because there was mould on it, so I didn’t even look. I just put it right in the garbage.

When asked to follow up on this moment she went on to say:

So when I see mould, I gag, like really bad. It’s gross. So I couldn’t even open it because I knew I’d start that process. So I could have scooped it into the green bin but with that I just can’t. It’s too gross. So I had really no choice but to put it in the garbage. Plus it was already in a container so it was easy. (CF-18)

This visceral response here was so strong that the participant felt she had “no choice” in the matter of where the apple sauce would be disposed. The only place it could be disposed of was in the garbage. This shows how visceralities affect the material afterlife of food. Visceral interactions have the power to determine whether an item will be eaten, then whether it will be used for compost, or sent to landfill where improper conditions for decomposition lead to the
release of methane gas (Hall et al., 2009). Visceralities serve as conduits to disposal that have power even over infrastructural developments that divert waste (such as the green bin).

In the case of the plums (Figure 8), onion parings (Figure 9) and the apple sauce (Figure 10), reactions emerged in response to the physical presence of foods’ vitality. Food waste was also conjured by visceral anticipation of experiences, such as disgust, in participants’ stories. For example, Participant 22 describes a change in her habit of using smell to decide if an item is still edible or not:

[…] the whipping cream I knew had been opened about the same time so I didn’t even bother sniffing it […] I had a few instances in the last three months where I opened up like a sippy cup of milk that had just little bit of milk in the bottom, and then I made this mistake of sniffing it, and I smelled the sour milk and vomited. A lot. So I didn’t want to sniff it because I had this feeling it would make me vomit so I didn’t sniff it in this case. (CF-23)

Her previous experience with sour milk created a strong immediate reaction at the time (vomiting), but also carried over to future instances. It was not worth it to test through smell if the whipping cream had gone bad when, based on time estimates, she already assumed it had. This shows how visceral experiences alter the interactions we are willing to have with food to know if it is still edible or not.

Similarly, Watson and Meah (2013) describe the visceral experience of food waste specifically around the issue of date labels. They state that “for all respondents boundaries exist, even if they are often defined by the affective experience of disgust more than cognitive reflection on bacterial risks” (p.6). The differences in “boundaries” can be seen when Participant 2 describes her husband’s willingness to push best before dates and her own reluctance:

[…] like lunch meat is a big thing, I don’t push lunch meat. I think after like 3 days… 4 days is the most that I’ll eat it. He’ll eat it after the 5th day and I’m like you are going to get sick. But he has this moral…so he’ll push it […] so then we
eat separate meals. Like a couple days ago we had separate meals because I’m
like I’m not eating that. That’s over the shelf life. (CF-02)

Recall that Participant 2 is fairly comfortable paring bruises from fruits and vegetables, and
slicing bits of mould off of cheese. In this case, food safety, time constraints and risk were
provoked through the participant’s interpretations of the “best before” date. This instance reveals
the power that date labels have in constructing visceral responses to food waste. Although best
before dates are not firm lines marking food’s transition from edible to inedible, discourses have
been developed around best before dates such that they are relied upon for judging when food is
good and safe (Milne, 2013). Thus, best before dates create more visceral conduits of disposal by
changing ways of knowing whether food is still edible or not.

By adding in visceral awareness to the sensorial, categorical, and contextual transitions
between food and waste, it becomes easier to explore the wide spectrum of responses that are
present around food wasting, and interrogate how these responses develop. Household food
waste studies repeatedly highlight the presence of emotions around food wasting, such as guilt
(Evans, 2012a; Parizeau et al., 2015; Quested et al., 2013; Stefan et al., 2013; Thieme et al.,
2012) and desire for thrift (Cappellini, 2009; Waitt & Phillips, 2015). These experiences
certainly registered with participants in this study as well. Participant 22 describes:

So I was just commenting on the fact that the word guilt was coming up as I was
talking about food waste, and that it’s so silly and ridiculous, but that’s the feeling
that I most identify when I talk about food waste. And it may be that I grew up in
a household that had one income. And I was conscious of the fact that while we
had enough, we didn’t have a lot of money. Right? So I never lacked for anything
but I also couldn’t have anything I wanted. And from the time that I was old
enough to register that fact, I would choose my menu items from the right hand
side of the menu as they say. Look down the price line, even as a twelve year old,
if my parents took us out to a restaurant I would be conscious of the price of what
I was ordering because I was thinking about the fact that my parents were paying
for it. So I think that waste and frugality… it’s not that they engrained in me “we
Experiences described around a moment of food wasting reveal historical experience with food and what it means to waste. A few participants discussed growing up experiencing scarcity in their home, and therefore feel very guilty about wasting food. Many participants wanted to instil knowledge about the value of food into their children’s lives, while at the same time not wanting their children to experience scarcity. Older participants discussed the lingering effects of parents growing up in the Depression and the influence this has had on their desire to not be wasteful.

The linking of negative emotion or experience and food waste is so common place that these linkages are expected to emerge in interviews both by researchers, and participants. There has been little research and theory development around the varied and complex emotional relationships people have to food waste. It is easy to see the presence of negative emotions and experiences in discussion of food waste as a levering point for reduction strategies. Waitt and Phillips (2015) offer that:

Confronting that which we render disgusting makes felt the accepted boundaries between categories of fresh and spoilt, edible and inedible, inside and outside, clean and dirty. Here perhaps lays one productive political possibility – to limit wasting by leveraging disgust and shame to force reflection on refrigeration. (p.9)

But what happens to these strategies when other emotional relationships are uncovered upon reflection on waste? While guilt and thrift were discussed throughout many participants’ food waste stories, there were also moments of pride and apathy. For example, after surveying the photos she took for the study, Participant 14 confides that:

I always thought we were really really bad. But I thought we did ok. Like considering there was only seven people, like that’s pretty much all we wasted. That’s pretty good if you think about it. I was proud of this. I always thought we were focusing on the negative of what we were wasting, and then I guess that causes compulsions in me to not waste [...] But, I don’t know, I felt ok. It gave me
a little bit more confidence in my family and shows me where I need to work on [being] a little bit better. (CF-14)

Her waste reflections elicited a sense of pride. In another interview, after being asked how he felt taking the photos of the food throughout the study, Participant 5 admits:

I didn’t really feel anything, it’s something that I committed to for you and it was nice…you know it makes you conscious […] because before you are just throwing it away, right? You are in a rush to get to the groceries so you just throw it away […] But it kind of made me stop to look at it and take the picture. And maybe there should have been more guilt involved – there wasn’t […] I know we’ve done worse, we’ve done better […] But as far as feeling any guilt or any of this, there wasn’t any of that. Or feeling weird about it. It was alright. (CF-05)

It is interesting that Participant 5 answered by describing his absence of guilt upon a question that asked about general feelings. Both pride and apathy are valid and important emotions and experiences to explore around food wasting. They convey emotional attachments (and detachments) from wasting that go beyond expected or presumed negative responses, and deserve to be explored further in future research (for example Hawkins (2006) explores how wonder, beauty, and positivity can be provoked by encounters with various types of materials rendered waste).

In this section, visceral experiences have helped to explain the variation in responses to encounters with “uncertainty” that participants described around things like mould, date labels, fruit flies, and in general, witnessing or perceiving the decomposition processes of food. Visceral awareness also captures the affective role that experiences have in determining which waste conduit an item will be placed in. Visceralities can make obvious some of the ‘conflicting social anxieties’ (Watson & Meah, 2013), or ambivalent emotions (Waitt & Phillips, 2015) that exist around food wasting. As Hayes-Conroy and Hayes-Conroy (2008) remind, these reactions “[do] not happen in a vacuum, but in a lived context of social representation” (p. 467). Waste is represented in society as a material afterthought. As discussed in Chapter 2, the impacts of food
waste tend to remain hidden in society. This is partly because the impacts of the food system remain hidden, and partly because of strategies of disposal that keep waste out of sight and out of mind. Systems deliberately maintain ignorance of the effects of food wasting, and the food system deliberately changes the relationships people develop with their food as a strategy of consumption. Strong visceral reactions to food wasting reflect this social/institutionalized distance. The next section explores how social representations were described by participants in relation to systemic influences on their food wasting. The following section builds on this by considering gendered experiences, and role of food wasting in the dominant food system.
Chapter 4: Systemic influences

Food and waste practices are embedded in capitalist commodification schemes. Much of the food that becomes waste exists in conversation with social norms that are created and upheld through systemic interactions. Thus, it is important to interrogate the creation of these social norms and the way that systems create, order, and perpetuate flows of food waste in (and through) households. At the same time, regional differences in these systems have an effect on household waste practice (Barr et al., 2013; Bulkeley & Gregson, 2009; Parizeau et al., 2015). The assessment of systemic influences undertaken herein considers Guelph’s food and waste contexts while remaining attuned to the effects of a market-driven consumer culture.

This chapter serves to reveal systemic influences on household food waste production so that the emphasis placed by media, educational campaigns, and mainstream public perception on the problem of food waste at the household scale can be further nuanced, and understood in social context. The impact of Guelph’s food retail and waste management system were prevalent in interviews, however the impact of these systems was often made invisible (or invisibilized) by participants. This could also be seen in discussions of restaurant influence on household food waste production. I first describe the impacts of food retail, followed by restaurants, and then the waste management system. Most attention was given to the personal or individual food management errors that led to moments of waste, thus the final section reveals the personal responsibility participants felt over their food waste production. As will be discussed, it is important to recognize the interplay between food and waste systems and individualized responses when developing policy fixes and/or educational campaigns about food waste.
4.0 Food retail

As food waste policy evolves in Canadian contexts, it is important to take into account the influence that retail environments have over consumption patterns. Food retail in Canada is so highly concentrated that Winson (1993) has described retail environments as “sites of socialization” for developing relationships with food. Retail environments contribute to a commodities approach to food procurement, which emphasizes purchase over consumption (Gunderson, 2011). The impact of this on food waste production can be seen in various participants’ stories. The concentration of power in large food retailers contributes to ordered food and food waste practices. First I will show how these ordered practices can be seen in responses to portion sizing and pricing schemes, and the trade-offs participants made at smaller food retail outlets. Then I will discuss the way perceptions of food waste impacts are affected through food purchasing decisions, and what these perceptions mean when considering household food waste studies.

In this study, large food retailers dominated as participants’ primary access points for food. Only one participant primarily obtained groceries elsewhere (from an online shop with delivery). Because the interviews took place during summer and early fall, it was common for participants to also discuss food they purchased at farm stands within their respective neighbourhoods. While there were differences in intentions of purchasing food from different outlets, purchasing at farm stands and large and small grocery stores all contributed to food waste in participants’ homes.

Participants discussed cooking amounts of food based on the portion size available at large retail outlets rather than the amount they ideally would have wanted to cook. Regardless of
household composition, predetermined portion sizes often led to an accumulation of leftovers, sometimes of awkward amounts, that were later wasted if not used up in a timely manner. Participant 10 describes this predicament in her discussion of swiss chard and cilantro bunches purchased at the grocery store:

Figure 10 Swiss chard, Participant 10

[…] this is an interesting share because I had been at the grocery store and bought a bunch of swiss chard and - this happens with cilantro all the time with me too - is that the bunches are huge. If I only cook half of it or three quarters of it the rest just wilts and goes rotten in the fridge so I just do the whole bunch. But then there’s just too much for the four of us to actually eat a whole bunch so there’s always a little bit left over. And then that came back to, I put this in the fridge, knowing that none of us are going to eat the leftovers, so do I just toss it? […] I just feel like we often end up throwing out like small little bits of things like that. (CF-10)

“Small little bits of things” were common in the photos and dominated perceptions of what was being thrown out in homes. Interestingly, herbs were a common example raised by participants to emphasize inappropriate portion sizing. Items like cilantro, parsley and thyme were purchased
in predetermined amounts and often the participant knew at the time of purchase that this item would largely go to waste. Participant 18 described herbs as being in the category of things that are “made to throw out” at the retail level along with “tortillas in packages” and “bags of small bell peppers”. In these cases, lack of control over portioning led to wastage.

Food waste was produced in participants’ households as a result of pricing schemes in this study as well. Participants noted buying non-perishable or less perishable foods in bulk when they were on sale. For example, Participant 22 describes how this can open an opportunity for waste:

[…] I bought the very large box of Premium Plus crackers that has like maybe six sleeves inside […] And I have my pantry overflow in the basement so I might have one or two boxes of crackers upstairs in the pantry in the kitchen. And then in the shelf in the basement I have more crackers that were all bought for a dollar each on special you know. So I always buy things on special and keep the pantry well stocked […] Well my husband was sick that day so I went and got out a sleeve of Premium Plus but I also noticed that they expired two years ago (laughter). (CF-22)

She reveals that stocking the pantry with less or non-perishables when things are ‘on special’ creates an opportunity of future waste to occur. Perishable items were purchased with discretion and revealed trade-offs between time, money and satisfaction.

Three participants included photos of mouldy strawberries (e.g. Figure 11). Their discussion of the strawberries was economically concerned.
All participants remarked that the strawberries had gone bad sooner than anticipated, and at a faster rate than they were able to use them. They also said that in hindsight, this was to be expected given that the fruit was purchased on sale. One participant revealed two separate pictures of mouldy strawberries purchased from the same retailer. She indicated that her children really love strawberries and that it was worth the waste because she saved money on the whole basket.

The contention that the purchase of a food item might be ‘worth the waste’ challenges responsibility narratives of household food waste. While only 10% of the total quantity of Canadian food waste is produced in retail (Gooch & Felfel, 2014), the above examples highlight the consumer-retailer interrelation that exists in a moment of waste. The strawberries had the potential of becoming the responsibility of the retailer, but instead were sold at discount, and
passed along to the consumer. The household invisibilizes the food waste contributions of other sectors when retail power does not remain in discussion.

Both portion sizing and pricing schemes have been identified as contributors to food waste production in households (de Coverly et al., 2008; Quested et al., 2013). Considering flows of power, Alexander et al. (2013) have used political economy to challenge and politicize perceptions of where food waste occurs in the food system. While my study focuses on the household scale of the food system, the results emphasize the interfaces between actors in the system. It is difficult to see the influence of other sectors because household practices are normalized and engrained in habits of food consumption. Participants did not cast blame onto the retailer, but it is likely that a consumer would be held responsible for producing this waste, as seen in the policy tendency to emphasize overconsumption aspects of food waste (Alexander et al., 2013).

Even when consumers purchase food from other retailers, there is still a trade-off that occurs. For example, participants described the food at the farm stands as being “hit or miss” in terms of ripeness, therefore affecting food waste production in their home. For Participant 5, the farm stand provides a comparable price to the grocery store with more flavour as well as the moral benefits of supporting family farmers:

[...] I think their prices are pretty on par. The other day the only thing I bought at the grocery store were bananas and onions I think, maybe some potatoes. And I bought the rest [at the stand]. It was about 20 bucks, 25 bucks I spent at the stand. So it’s a couple of bucks more but it’s worth it for the quality and the flavour. You get a quart of strawberries that you can eat without adding any sugar or honey or anything. You can’t go wrong because they’ll get eaten right? You’ve got these bigger sour strawberries that have no flavour, that don’t taste like strawberries they’ll sit there, they’ll go bad. We go through the strawberries and things like that from farm stands. (CF-05)
In this case, Participant 5 has identified the quality of the fruit flavour as contributing to waste avoidance. In contrast, the following picture (Figure 1) reveals how waste was produced when a participant was enticed by the quality of beans at a small food retailer, ‘Angelino’s’. Participant 8 lives by herself and in discussing a bowl of beans gone to waste she notes that:

Figure 1: Beans from Angelino’s, Participant 8

[Angelino’s] has really good produce, but he’s almost double what the grocery stores are for that reason. Because it’s fresh. He has beautiful produce and you can buy a handful of beans, you don’t have to buy a big bag, but his prices are little bit up there. You have to trade off. Whereas you go to Food Basics or Zehrs up here and yeah you can still buy a handful of beans but they’re crumby. And I like to take raw veggies in my lunch. So I like them to be nice and crispy and good [...] Like I said I kind of got crazy and bought too much. I should have cut back (CF-08).

In the example above, Participant 8 had control over how much she purchased, but purchased too much to be used in one week. The personal accountability taken here should be
noted, and will be returned to shortly in section 4.3 “Personal Responsibility”. The discussion between different avenues of food purchase revealed the trade-offs participants make when shopping at various outlets and the ways that different trade-offs can still produce food waste outcomes. These trade-offs are yet again evidence of an ordered relationship with food because participants expected different quality attributes in the food they purchased from different outlets. These trade-offs extend to the way people feel about their food waste. When asked about who in society has responsibility for food waste reduction, one participant responded:

I think every household plays a role in it because we are all contributing to the waste. But I would say probably in the last year we are making more of a concerted effort to shop smarter, shop more locally, and reduce sort of our footprint as a whole. Not only with food waste but in terms of you know, buying local. Buying less package, which in turn creates less waste so. (CF-09)

This response reveals the connection this participant makes between her household and moral narratives of what it means to waste food procured through different means. While earlier she noted that her family is not particularly “environmental”, Participant 9 does like the idea of having a lower impact on the environment. She recognizes that her household produces waste, but she also emphasizes that the types of waste produced have changed to be, as she perceives, less environmentally impactful overall. Currently it is difficult to affirm or deny this claim as there is a lot of nuance in the impacts of various food systems. For example, Born and Purcell (2006) assert that localization is a strategy that can be used to obtain a variety of goals in a food system, but that there is nothing inherently more economically, environmentally or socially sound about a local food system. Nevertheless, consumers respond to and create narratives such as ecological justice (Weatherell et al., 2003) or food safety (Nygard & Storstad, 1998) around local food. Thus responses that indicate perceptions of the impacts of food waste are evidence of the decisions that participants made within the food contexts they live, or how participants “read”
their food landscapes (Smithers et al., 2008) in relation to the impacts of their food waste. This is a reminder that the impacts of food waste are generated early on in the food supply chain, but noticed only at the time of disposal. The consumer is the final recipient of a lot of surplus that is generated in other food supply sectors, and consumers make decisions in the context of the food retail environment. It is important to pay attention to the impacts of the food supply chains households are interacting with, not solely waste production as an outcome.

4.1 Restaurants

Restaurants were discussed minimally in interviews with participants. Many participants said that they did not eat out very often. The influence of restaurants on food waste in the homes of participants primarily affected the change in routine caused by going to restaurants. Participants described that when they went out to eat they were left with more groceries to consume in a week, which is consistent with the hypothesis of Parizeau et al. (2015). One participant (CF-05) noted, however, that going out for dinner meant they had no leftovers in the home and therefore there was less of a chance to waste food. Again this emphasizes the interface between households and sectors with regard to food waste. There are a variety of food waste possibilities that occur in the restaurant, such as plate and preparation waste (Engström & Carlsson-Kanyama, 2004; von Massow & Mcadams, 2016), but these waste possibilities are often invisibilized to restaurant-goers.

4.2 Waste management

One of the largest institutional influences seen in household food waste organization is the municipal waste system in Guelph, the most visible representation of which is the green bin. The green bin was used by all participants except for two. One participant not using the green bin
had installed a garburator and felt that for the amount of organic waste that was not able to go in the garburator, it was not worth putting out the green bin. The other participant did not have access to a green bin because they live in an apartment. As mentioned in Chapter 3: Assessing the transitions between food and waste, it was normal to see images of the green bin in respondents’ photos. When the green bin did not come up in pictures, it did come up in the interview. Findings from my study reveal the ways that the bins are taken into the home. The bins help to make flows of food waste visible for this study (through identification of food waste), but they also can make invisible (or keep invisible) the impacts of routine food wasting.

The successful uptake of the organic waste diversion program in Guelph can be seen in the images and testimonies of participants’ green bins. The bin served to frame and identify food items that would become wasted. Pictures of the green bin itself revealed images of non-food items (as is allowed in Guelph) such as tissues and paper towel alongside food scraps. Pictures of bins by participants were used to show the variety of scraps and bits that are put in the green bin, as opposed to individual moments of waste. In a candid moment, Participant 1 revealed an image that was not included in the original set of photos sent to me. It was brought into discussion during the interview:
Figure 13: “I’m throwing out food”, Participant 1

There’s cherries in there, there’s the end of some cucumbers that probably could have been trimmed better. So I took that to be like ‘I’m throwing out food’ I can’t just take pictures of like [my daughter’s] plate and blame the toddler, like that’s the inside of our green bin, like there’s food there that you know, the cherries I didn’t do anything with because I left them too long and they were starting to go brown and that sort of thing […] (CF-01).

Here, the bin acted as a container of “proof” of food waste in the home. While the participant framed some of her food waste story around her child, the bin served as a reminder of other times she was wasting food. In this moment, the bin made visible other moments of food wasting that included trims and ends as well as cherries gone brown.

There were competing narratives about interacting with the waste stream in Guelph. For example, some participants felt that the green bin was a good way to reuse or make use of the food that they wasted. This was particularly helpful for participants who produced little food waste other than trims, peels, bones and coffee grounds because the green bin went the extra step in allowing the by-products of their food to be used further, though it was not clear to participants what it would be used for, as is discussed shortly. After being asked about thoughts and feelings on the following picture of shells, tea bags and pits, this participant responded:
In general, the participants found using the green bin helpful because it provided them with access to composting, which was regarded as a better waste option. Participants that did not have a backyard composter would commonly comment that they ideally would like to compost in their own backyard, but for reasons including animals and backyard size it was not feasible in their home. Alternatively, they found that the green bin program was something they could conveniently participate in. Other participants used the green bin and a backyard composter simultaneously. The green bin helped participants with composters to deal with things like meat
and cheese which attracted animals to their backyards. Experience with animals had led some participants to stop using their composter all together.

Some participants felt that while the green bin was still a better option than the garbage stream, it was not as good as having a backyard composter. This was in the case for both participants with and without backyard composters. In the following example, the landlord of the participant had removed the compost. When describing why she would prefer to have both the compost and the green bin this participant said:

It’s mostly just like plate waste and stuff that would go into the green bin. So a lot of our stuff went into the compost. Or it was nice too if you were cleaning the fridge out it was like old vegetables and stuff that could go in there. I kind of felt like I was reusing them. But now I just feel like I throw it all away… I feel like it’s wasting more to throw it in the green bin. Because with compost you can grow more vegetables right? (CF-04)

For this participant, composting was synonymous with reuse, while putting food waste in the green bin was aligned with other methods of discarding. The loss of the composter changed her experience with wasting food, although not necessarily her overall actions leading to or preventing food waste.

Regardless of waste stream preference, it was easy for participants to imagine that the food waste would get “used” for something else. However there was not a clear vision of what it would be used for. A common waste imaginary was that composting was more natural and therefore a better type of waste. The following quote by a participant that, up until this point had not indicated much grievance about his household’s waste, captures the idea of a more natural waste, as well as the resulting feeling of many participants with regard to the green bin:

[... The green bin] takes away a little bit of that guilt. Although you’ve heard things, I don’t know if it’s rumours or things, about the fact that the compost system here is... if you accidentally get something that’s not compostable it goes
with the garbage and it’s going into landfills anyways. And it’s not getting composted properly […] I do it, I like it, it kind of eases that guilt a little bit of throwing, you know that it is going back into hopefully a natural resource […] it’s being used for whatever so as for throwing… you know you’re throwing away paint or batteries it’s like oh where is this going, what is it doing to the earth? (CF-05)

This type of skeptical comment about the composting system recurred throughout interviews. Participants asked me during the interview if I knew what was done with the material, and four participants commented that they were skeptical that anything happened to the material once it was collected (although this skepticism did not alter their participation in the green bin program). One participant commented that their household was doing their job to separate their organics, and it was up to the City to do theirs in making use of it. After commenting that she “…doesn’t have faith in the garbage system [in Guelph]” (CF-04), Participant 4 admitted that she would separate the organic scraps regardless of its destination because it made her feel better. She connected this to feelings she gets around recycling and littering:

I feel guilty if I don’t separate my garbage or recycle. Like I feel really bad about it. Like even when I was a kid I would always pick the garbage up off the ground. So it’s like, I can’t stand seeing people litter. I hate when people put stuff in the wrong garbage bin. So I do it mostly for myself. (CF-04).

Knowledge of how food waste diversion and reduction would contribute to environmental and moral good therefore was not clear and varied amongst participants. They noted the importance of composting and recycling and thought of it as being the right thing to do and the better option. This is congruent with Hawkins’ (2006) exploration of the moral achievement that occurs through participation in recycling programs and backyard composting: “This sense of goodness, of having done the right thing for the environment, shows that
contemporary waste habits have become connected to the practice of virtue or a sense of obligation to particular rules and moral codes” (p.ix).

Participants cited the occasional annoyance with source separation or having to purchase compostable bags, but overall felt that organics separation was manageable and reasonable. This could be marked as a success for the Guelph food waste diversion program in these households. However, for those concerned about the overall reduction of food waste at the household level, the green bin produces some challenges. Metcalfe et al. (2013) question the ability of the green bin to foster environmental consciousness. They found that participants may feel they have done their part for the environment, conceding that composting through the green bin is enough. As has been shown, participants in this study felt similarly. It was also common for participants in this study to draw contrast and comparison to narratives around other forms of reuse or recycling when discussing the merits of the green bin program and food waste reduction. For example, participants made connections between donating household items to charity, and not wasting food. This is a comparison between waste diversion and waste avoidance. While it may seem insignificant, scholars highlight how language reveals the imaginaries that construct social action (see Liboiron, 2016; Hawkins, 2009). Already participants have adjusted their notions of ‘waste’ to differentiate between organic and inorganic materials. But still there is a material conundrum participants have regarding the trouble with food waste: What is the problem with wasting something that decomposes? Hawkins (2006) reminds that “[t]he problematization of waste as environmentally destructive is part of our recent history. It has informed numerous changes in governmental programs for waste management […]” (p. ix). Food theoretically is a compostable food item, and this waste imaginary is easily maintained through the green bin program in Guelph. This imaginary does little to remind us of the total impact wasting has on resource use
throughout the food supply chain. For example, consider the fuel that is used to transport food and inputs throughout the supply chain (Hall et al., 2009) and then to transport green bin contents to composting facilities. Thus, the environmental and social concerns around which ‘the problem of food waste’ is framed do not necessarily penetrate through to individual practice with regard to green bin use. Participants revealed that they are capable of adapting their behaviours, and are responding to social constructions of waste in the process. This emphasizes that there are limitations imposed on waste reduction potentials when problem framing targets individual responsibility. Waste infrastructure reifies the disposability of food when it removes food waste from sight. There is productive potential in investing in infrastructural advancements that shape engagement with waste in new ways, and that focus on the need for structural solutions that enable the valuation of the energy and nutrients embedded in food waste.

4.3 Personal responsibility

The progression of photovoice questioning leads participants from description to a discussion of what could be done about the situation or issue at hand (Wang, 1999). When participants were asked what could be done about food waste in the home, their answers reflected a high degree of personal responsibility, or responsibility of other individuals in society. Management strategies to reduce food waste, including purchasing less food and portioning family meals better were commonly suggested by participants. Getting in the habit of planning meals was an aspiration of some participants; they hoped it would lead to both healthy eating and food waste reduction in their home all with positive impacts on the grocery bill. One participant living on her own said: “… I was a little surprised at some of the stuff I threw out […] you know I have to pay attention to that more. I shouldn’t be so wasteful I guess is what I am getting at.” (08). The general sentiment of participants was that there were many ways one
could avoid being wasteful. This is consistent with the survey findings from Parizeau et al. (2015) in Guelph, and Quested et al. (2013) in the UK. In his ethnographic study, Evans (2012) found this as well: people often attribute food waste production to a failure in household management.

The conversations felt stagnated by the limited scope of possibilities discussed because while participants felt that it was their responsibility to reduce food waste many identified that it was also somewhat challenging to do so. Some participants felt they were doing the best they could and that while there is room for improvement, their food waste generation was not too bad.

As referenced in Chapter 3, some people felt a sense of pride over the amount of food waste generated after completing the study. Many participants felt that they produced similar amounts of waste to those in a comparable life stage. Participants with young children had a sense that their food waste would reduce or change over time as they got into more set routines.

Some participants felt that there was not a lot of room for improvement. These participants produced mainly peels and scraps and felt there were only occasional times where avoidable food waste was produced. Instead, they pointed to areas where other individuals in society could improve their habits, or discussed reasons why they had been able to generate only a small amount of avoidable food waste. Older participants identified the organizational capacity that time afforded them in reducing waste. They expressed the idea of conflicting priorities (that did not include food waste reduction) for people of younger generations.

It is easy to draw similarities between these findings and the socialized desire to avoid waste awareness (de Coverly et al., 2008). However, stopping there would limit the scope of possibility for understanding food waste production in households. The finding of personal
responsibility speaks to an aversion to waste, and research continuously seeks to reconcile waste aversion attitudes with waste reduction behaviours (e.g. Graham-Rowe et al., 2014, 2015; Stefan et al., 2013). Similarly, participants in this study had difficulty reconciling the food waste they produced with waste aversion ideals. One participant explains what she sees as the cultural phenomenon of wastefulness:

[Food waste] is representative of [how] we are fortunate enough to have enough money that it is not a problem if the food gets wasted, which is a really sad commentary on our society, but that’s what happens. The food is in the fridge and we throw it out and we go ‘oh well’, we buy more food and that’s it. We have the luxury of being able to replace it if we screw up. Which isn’t necessarily the most ethical or responsible thing to do but I think it’s a prevalent attitude in our society that we don’t want to talk about but that’s what it is. We’ve forgotten about it in the fridge, and then we found it later. And it’s more of a pain in the neck. It’s more frustrating to us to have to throw [it in the green bin] and clean out the container than to think about ‘oh no we wasted this’. (CF-07)

This quote mirrors predominant presumptions of a “throwaway society” when relating to food waste, which empirical researchers of the home repeatedly dispute (see Evans, 2012 and Gregson et al., 2007). The idea of the “throwaway society” was very prevalent in interviews, and here, Participant 7 accepts responsibility and points to the inconvenience of having to deal with waste. However, the above quote is misleading because the sentiment expressed is not coherent with the surrounding interview of Participant 7.

During the interview Participant 7, a trained pastry chef, described the ability to cook immaculate meals for her family and friends. She brought attention to the challenges that arose during the study because she ended up getting sick and had a hard time feeding her family during that time. She also described the stress of having to adjust eating plans for the week when family members come to visit (sometimes unexpectedly). It became clear that viewed from the perspective of food waste production, the work that went into food procurement, preparation and
provisioning was ignored. The amount of food skills and knowledge that this participant had could easily be hidden by both subjective and objective interpretations of her food waste photographs. In the following chapter I will highlight the gendered components of this work. In this section, I will end by acknowledging that individualized narratives of food wasting ignore the structural influences on households, and the interfaces between households and other sectors.

One of the limits of capitalism that the act of wasting food emphasizes is that there are side effects to consumption predicated on profit rather than use. When solutions to resolving the food waste problem (such as in reduction campaigns) focus on individuals, awareness of this flaw is hidden for the time being. Individuals again are asked to do the work of adapting to the market while shouldering the blame for negative externalities. Individualization of problems can be seen in the promotion of “vote with your fork” around local food, or health promotion through emphasizing proper food choice (Guthman, 2011) without acknowledging structural barriers regarding access. With regard to waste, the promotion of certain waste practices, such as recycling programs, can “blind us to our dependence on the otherness of waste and our fundamental interconnections with it” (Hawkins, 2006, p.121). Recognizing this as a structural development leading to misunderstanding waste impacts opens possibilities for progressive infrastructural and systemic developments.

This chapter has described the ways that households respond to systemic influences through ordered household practices. The waste production complicit in the commodification of food is passed to the household where systemic influences are invisibilized. This is done in the household through the ordered structuring of habits. Socially, systemic influences are invisibilized through the tendency to moralize food waste production and correspondingly download reduction responsibility onto households. This has implications for how household
food waste should be framed in the future, and how reduction strategies should be pursued. But first, another layer needs to be added to make connections between systemic influences and personal experience in a way that recognizes a constrained agency while offering political potential. I offer the following analysis that recognizes the gendered components of food waste, before providing recommendations based on this work.
Scholars contributing to food waste studies consistently challenge and question the aforementioned downloading of responsibility onto the consumer (Alexander et al., 2013; Evans, 2012; Gregson et al., 2007). However, little attention has been paid to the gendered dynamics that exist in the home around food waste. While reduction responsibility is identified by householders and targeted at individuals, the gendered components to how that responsibility is enacted have been washed over or simply ignored. For example, Waitt and Phillips (2015) explain that food waste reduction campaigns target the individual skills of consumers, mimicking social ideals of what it means to be a good homemaker and citizen: “A ‘good homemaker’ and ‘good citizen’ minimises food waste, connecting the everyday practices of refrigeration and ridding with power geometries that shape and reshape home, food systems and subjectivities” (Waitt & Phillips, 2015, pp. 11–12). In a footnote, they remind readers that “In the households of heterosexual couples, women tended to be mainly responsible for these practices” (p. 19). Similarly, Evans (2012) alludes to the importance of gender by discussing care narratives amongst participants. Neither of these studies incorporates considerations of how various conclusions offered might play out along gendered lines. Yet terms such as ‘homemaker’ and care provider carry a distinctly feminine history which carries forward today. For example, in Canadian households women spend twice the amount of time cooking and washing up as men (Beagan et al., 2008).

The purpose of this chapter is to analyze food waste through a feminist lens. I begin by discussing how scholars have brought attention to household work as a gendered form of work that often goes unnoticed. The following sections reveal that waste management and/or
prevention exists as foodwork in the form of explicit waste management, and is also complicit in the various forms of foodwork acknowledged by scholars. Here, I refer to shopping, cooking, provisioning, and eating as implicit waste management practices. The chapter ends by synthesizing these categories into the concept of food(waste)work.

**5.0 Noticing gendered work**

The interpretation presented in this chapter was developed by asking: What happens to food waste studies when we look at food waste through a feminist lens? Brady et al. (2012) ask this question with specific attention to the importance of feminist analysis in food studies. They assert that “(s)cholarly analyses of food, foodwork, and bodies must pay attention to gender because of the centrality of women and foodwork and the resulting gender inequalities” (p.122) and that “by ignoring food as an area of feminist inquiry, scholars overlooked the important ways in which women produce, reproduce, resist, and transform gender ideologies in their everyday work of feeding themselves and others” (p.123). Forms of foodwork include: “budgeting financial, human and material resources; purchasing and transporting food; assessing the quality of food for purchase; seeking out and using knowledge of nutrition; planning and preparing meals; judging the schedules, likes, dislikes, and various health concerns (e.g., diabetes, low-sodium diet) and dietary needs (e.g. allergies, vegetarianism/veganism) of family members and cleaning up” (Brady et al. 2012: p.127). My findings indicate that food waste production and management is a form of “foodwork” (DeVault, 1991) which remains un(der)paid, un(der)acknowledged, un(der)appreciated and stratified along gendered lines in the participating households.
In my study, 19 of the 22 interviews were conducted with women only, 3 interviews included both women and men, and 1 interview was conducted with a male participant. While this was a non-random sampling of participants, the high level of gender imbalance among participants reflects the high level of women’s involvement in food procurement, preparation, and waste management in Canadian households. The study was directed toward the person in the household most responsible for buying and preparing food. Participants shared this responsibility with their partners to varying degrees. At times, gendered differences in food waste experiences were mentioned explicitly, as seen here:

Like talking about food waste and inevitably the word guilt comes up. But I feel like if you were interviewing a guy about this they wouldn’t even mention the word guilt ever. It just, they, it seems to be a women thing and it seems to be a mom thing. Like that we feel guilt about everything you could possibly feel guilt about. (CF-22)

Other times, gendered experiences were referred to more subtly through comparison. Participant 10 describes:

Like if the kids were eating that I would never just throw that out, or in the compost or whatever, I would always hold onto it to maybe snack on it later in the day or tomorrow whereas my husband would just throw it out because he hates having things go bad. If there’s only like half a spoonful of jam left in the container he’ll just throw it out, he won’t put it back in the fridge. Whereas the way I was raised, you know it’s like engrained into your head, like you save that and someone will eat it eventually and then if it goes mouldy then you throw it out. (CF-10)

The participant does not claim that her actions actually prevent the waste from happening. But the experience of wasting something before it goes mouldy is different between the participant and her husband.

Beyond the difference in experience, certain people’s politics may have more influence on the household’s actions. During an interview Participant 17 tried to draw similarities between
the thriftiness she saw in her family and her husband’s family and the impact of that on their own household food waste production. While her husband recognized that his family had a mentality of “you don’t throw things out, you fix them”, he did not feel this history had influenced his actions as much. Finally the participant conceded: “it sounds like I have more influence on our household’s food consumption, waste decision than he does (laughter)” (CF-17). The implication is that a mother-figure has greater socialization influences on domestic consumption than a father-figure would. It is important to recognize that these histories of food waste are inscribed with gendered socializations and expectations of enacting these histories. As Beagan et al. (2008) note, it is common for people to perceive divisions of household labour as fair or justifiable and not gender-based. Regardless of how participants feel about the gender division of food waste activities in their households, it is still important to pay attention when there is a distinction that exists in households. It is important to pay attention to the experiences of women in relation to food waste; their experience is likely to have a large influence on the production of food waste in the home when they are in the primary position of food provisioning.

5.1 Waste work as explicit waste management

Explicit waste management includes actions that participants did in response both to the potential of waste, and the emergence of waste. Along with the need to dispose of food with certain characteristics, there were also times when aesthetic and/or material decomposition signalled the need to manage the food item to facilitate future use and avoid waste.

While the majority of photos were not indicative of waste avoidance, during the interviews, some participants explicitly discussed how waste avoidance factored into their food waste story. Two participants revealed specific photos of food waste avoidance in relation to
their food waste story. One photo was of a smoothie made with leftover oatmeal portions from their young toddler (Figure 13). The other was of peaches being made into compote (Figure 14). The participant responsible for the smoothie took great pride in adapting her family’s breakfast in response to food waste:

**Figure 15 Leftover smoothie, Participant 17**

We always have tonnes of baby leftovers. Crusts, oatmeal, things that don’t get eaten, fruit and what we’ve started doing is we make a smoothie every morning […] and whatever leftovers we have we collect them in the fridge and then dump them into the family smoothie the next day. So this is just a picture of saving tray randomness and putting it inside the smoothie […] it’s a way that we feel really good about preventing food waste. And every time that we put the smoothie I’m like: guess where that went? In the smoothie (laughter) all the leftover stuff. (CF-17)
The participant responsible for the peach compote revealed that her husband does not always understand the full extent of why she chooses to preserve:

**Figure 16 Peach compote, Participant 7**

To him it seems like I’m doing all this extra work or whatever. It’s not doing it for fun it’s so that a) we don’t get fruit flies in the house and b) so that the peaches don’t go bad because if I blanch them and put them in syrup then I can save them for longer. Like I have peaches, I have honey syrup-ed peaches in the fridge and I can feed those to the baby but a lot of the time he doesn’t realize that I’ve preserved things. So I have freezer jam in there and I’m sure that he just won’t touch it. So I have to like explain to him this is what this is and how you use it and that kind of thing. (CF-07)

Her account challenges the notion of benevolence that often serves to devalue the actual work that goes into feeding a family and maintaining/managing household resources (Brady et al., 2014). It also acknowledges the skills and knowledge that are required to act on preserving and/or freezing as a waste prevention mechanism.
During the interviews participants discussed waste management strategies that include: using their freezer to store leftovers; preserving items that were going off; and using up food before it would go bad. At times these management strategies were brought into discussion by asking about “almost waste moments” – food that might have become waste if it had not been handled at a particular time or in a particular way. Indicators of food going off but still being usable varied from household to household but generally included things like “squishy” parts, eyes of potatoes, and bits of mould. A couple of participants revealed that they were able to preserve entire fruits that were going soft, or properly blanch and freeze vegetables that were starting to wilt, but not all had or highlighted this skill. Participants often cooked items that were “not as fresh”, such as wrinkled bell peppers, and served them as a simple and effective way to make use of aesthetically degraded items that otherwise would be eaten raw, or continue to decompose and become inedible.

Sometimes waste management strategies were developed to accommodate household particularities. For example, an older couple cooking for just the two of them describes the storage of breads:

[… ] we’ll get a loaf of bread we’ll take half of it out, and put half of it in the freezer. And when that one’s gone we’ll [take] this one out. Same with hamburger buns, we’ll put them on a tray and freeze them separately, and fire them in the freezer so that they keep. (CF-11)

This is an explicit waste management strategy in response to incompatible grocery store portion sizing. This action requires knowledge about which items can be saved in the freezer and managing the freezer so that the bread does not get freezer burnt, for example. Freezing, preserving, eating leftovers, and making new meals from leftover items are some of the strategies of waste avoidance as identified by Quested et al. (2013) and Evans (2012). In particular these
strategies are important to Evans because they show that despite the ability for households to place their organics in waste receptacles, many still go to great lengths to avoid wasting food. In response to systemic influence (Section 4.2), individuals do work to accommodate the market.

Food waste management also includes actions taken around disposal. Cleaning out the fridge, managing the green bin, and diverting waste into appropriate waste streams all comprise a “food-waste-work” which enables a flow of the household. This participant highlights the separation of her coffee grounds for use in her compost as well as the minimization of liquid coffee waste:

**Figure 17 Coffee grounds for compost, Participant 6**

So those coffee grounds, first of all we don’t waste any coffee in our household. My husband and I each take a thermos of it to work and if the Bodum has coffee left at the end of the night it goes in the cup and it gets covered and it gets saved; we don’t throw coffee out. No coffee gets wasted but the coffee grounds do go out
to my composter […] When I’ve got company and my kids are around […] we may go through three or four of them, but no coffee goes down the drain. It gets used if it hasn’t been finished it gets nuked up later. (CF-06)

These actions contribute to waste minimization as well as nutrient recovery. Participant 20 articulately describes the actions she takes around the green bin:

I have two garbage bins under my sink.[…] My wet is first, my dry is behind the wet then on this side of the sink is my clear. Guelph garbage (laughter), that’s how we do it in Guelph. […] Here I’m doing the peach because the peach is wet and juicy you can see the water, the juices dripping down here. So again I’ve put that on a paper towel, and then I will wrap that up before I put that into my kitchen bin. So I don’t have too much wet. And then that is what it looks like when I put it into my kitchen bin. So I’ve got the newspaper inside the plastic bin, and then the food here so I’ve got peach skins, whatever else, banana peels that kind of thing? That will go into the wet, which stays in my kitchen until I take it to the garage. (CF-20)

Her actions align with Metcalfe et al. (2013)’s discussion of the ways that consumers respond to the agency of the green bin by managing its location and creating routines. The installation of the garburator in Participant 13’s home is an example of a waste management decision that was made despite the availability of the green bin system. Metcalfe et al. (2013) propose that rejecting the bin altogether is a form of agency.

Explicit waste management strategies require particular action regarding food preservation, handling, and rotation, as well as time and energy to execute this knowledge if food waste is to be completely avoided. Participants in my study had various ranges of food knowledge and handling skills that they used to manage or avoid food waste. Furthermore, once food waste is produced, it must be managed in particular ways to accommodate things like fruit flies, odours, and juices. Participants in my study did this by tending to their green bins, composts, and garburators. They also cleaned their fridges and developed strategies of disposal in their household. These explicit waste management strategies are clearly a form of work done in the home.
5.2 Foodwork as implicit waste management

Beyond the explicit mention of food waste avoidance strategies, there were also actions that implicitly led to waste management (though not always complete waste avoidance) in participant’s households. While I asked participants to include photos of anything that affected their household’s food waste story, participants tended to focus more on items of food gone to waste. I had anticipated some photos of trips to the grocery store, cooking practices, and meal times because these were the things often studied by researchers in relation to household food waste in ethnographic studies (such as Evans, 2012; Graham-Rowe et al., 2014). Nevertheless, there was ample opportunity to discuss these things further during the interview. The following are examples of instances were food waste production and foodwork co-exist during instances of shopping, cooking, feeding and eating. Since these actions have already been justified as foodwork by many food scholars, in this section I pay particular attention to how this foodwork is also waste management. I do this in some cases by contesting the idea that food waste emerges simply out of ‘error’ or poorly performed foodwork, and in others by highlighting the skill that is required to avoid waste.

5.2.1 Shopping as implicit waste management

Shopping for food is a form of household work that is often overlooked, but considered a form of foodwork (gendered as feminine) in the home (DeVault, 1991). To show how this work is tied to waste management, I discuss Participant 17’s experience of shopping for Thanksgiving dinner. Participant 17 was cooking Thanksgiving turkey to bring to a small Thanksgiving gathering. She says: “I decided to go to No Frills, but they decided the size I needed. Right? I wouldn’t have bought a turkey that big but that’s all there was and you’ve got to make a turkey
on Thanksgiving. So I ended up buying an 18 pound turkey (laughter)” (CF-17). Under the social conventions that require a turkey be served at Thanksgiving, she had to work within the limits of the offering at the grocery store. This another example of the influence of retail outlets occurring in conversation socio-cultural norms (section 4.2). When shopping, participants are working to make decisions based on a variety of factors; and food waste management may or may not be a priority factor. At the time of the interview, the participant had an overwhelming amount of turkey that she was trying to use up; she was unsure how much would get eaten, and aware that some might end up going to waste. To avoid such an incident the participant could have ordered a turkey earlier, gone to a different grocery store, or avoided cooking a turkey altogether, but notice that all these decisions require trade-offs around factors such as available planning time, economic means, and social expectations. The degree of “success” around shopping depends on which factor is valued most. If food waste avoidance is the ultimate objective, having the perfect sized turkey is most desirable. If provisioning for a family holiday is the priority, having any amount of turkey is the priority. Shopping is bound to food waste production more than just through over purchasing because it requires knowledge of many things regarding food’s quality, price, and edibility both at the grocery store, and in relation to individual family expectations and eating dynamics.

5.2.2 Cooking as implicit waste management

Participants in the study had a range of cooking skills. Some self-identified as highly skilled cooks and others very “plain and simple”. Some were trained professionally in kitchens, and some were in the processes of learning to cook for their family. Cooking in relation to food waste is particularly noticeable when items are in need of being “used up”. Participant 23 used to
plan out meals for her family, but has since decided to cook based on whatever is in the fridge. Here, she describes her cooking:

I guess every night when I’m thinking about what I’m going to cook for dinner – because I often don’t plan ahead anymore – I look at what’s in my fridge and I look at what’s most perishable and I try to use that first, right? So if I bought both broccoli and cauliflower at the grocery store because both were a good price that week – it’s only really down to price – if I bought both that week and I make an effort to make the broccoli first because it’s more perishable. So I will often as I’m getting ready to prepare dinner I’ll take a quick look in my crisper drawers and think ok what do I need to use up? And then try to do something there. (CF-23)

Participant 23’s cooking requires knowledge about which items are most perishable and in need of being used. She also notes cooking based on food prices when shopping. Cooking here also requires knowledge of how to come up with a recipe from available ingredients that are time sensitive, thus highlighting waste avoidance work.

In the following story, the foodwork involved in cooking is highlighted in contrast to the other person in the household:

My husband doesn’t necessarily, he’s a good cook but he doesn’t necessarily know how to do stuff so like if I’ve got like a chicken, a seven pound chicken that’s free range and whatever that I’ve been talking about brining, he’s not going to do that. Because he doesn’t know how to do that. And he’ll be afraid that he’s going to ruin my $50 chicken. But if we cook the chicken, if we had done it last night, or if I get it done tonight and roasted and done, then he’ll use it for stir-frys and we’ll like use it all week, and then next weekend I’ll make a stock and then it’s fine. (CF-09)

This highlights assertions made by DeVault (1991) that cooking requires particular sets of knowledge and skills which are valued in a professional setting, yet undervalued in the home. In the home, the work that goes into foodwork is noticed when not done properly. With particular attention to food waste, awareness of poorly performed cooking could come in the form of food waste production, or if someone becomes ill from an item gone bad.
5.2.3 Provisioning as implicit waste management

Different from shopping, provisioning concerns the act of providing food after purchase. In the case of leftovers and plate scraps, what is missing from the photos is the image of the food/meal before it was partially consumed. It is unclear how much of the food was consumed prior to identifying the leftovers or scraps as waste so I asked questions about the lead up (or the backstory) around the photo. Upon reflection of a picture of their salad bowls, Participants 9 discuss the amount of vegetables that were consumed prior to the picture. They reveal that the bowl was probably full and so a lot was consumed. They remark on the amount of salad their family consumes and the female participant comments that she needs to “get better at [her] estimation skills”, noting there is always a bit of salad left at the end of a meal.

Figure 18 Leftover salad, Participants 9
Viewed from a food waste management perspective however, the salad has been for the most part successful – the act of provisioning has transferred to consumption. This family takes pride in having salads with their meals as they are working to make healthier choices for their daughter. On one hand, the leftover salad is a sign of poor estimation, on the other, it is a sign that the family is following through on their commitment to eat healthy.

Provisioning ‘errors’ also emerged when discussing children’s plate scraps. Participants often spoke of their “parenting style” as contributing to or lessening waste production. Parenting style had to do with how participants with children decided to feed their children. Some participants chose to portion small amounts to their kids at a time which in turn would minimize waste. Other times they felt that it was important to let kids learn on their own how much to put on the plate. This would potentially lead to more waste, but it was part of a learning process.

This participant describes the challenges of balancing food preferences of her family with her desire for them to eat healthier. Her exasperation around a moment when pizza went to waste emphasizes the gendered burden of food provisioning in a moment of food waste:

[…] the hubby came home with pizza. And I go: we don’t eat pizza. And then no sooner did he do that my mom came in: hey I bought pizza for everyone! And I looked at everybody and I was like, do you not realize what I’m trying to do here? I cook you guys healthy meals, we have a full fridge of healthy stuff, we have fruits all along here. Am I the only one that eats these really? And then I felt so bad that the pizza was going to waste that I ended up having two slices the one day and two slices the other day and it just sat there. And I by the time – I just can’t [eat] more, I can’t, and I know I’m going to blow up like a puffer fish because that’s how pizza reacts with me, it’s done. And then nobody else was eating the pizza so that was what was left after all the pizza fads. (CF-14)

Parents found it was hard to balance variety and exposure to new foods for their children with food waste minimization. Occasionally participants would comment that they could change the way they fed their children, but for the most part food wasting was an expectation of feeding
children. Thus, by being structurally tied to children’s eating, food provisioners have heightened interconnection to food waste management.

5.2.4 Eating as implicit waste management

All of these stories highlight how eating is also a form of food waste management. All of the shopping, cooking, and provisioning of food does not lead to waste avoidance unless the food is consumed. This idea is captured when the following participant describes:

[…] usually I make a meal plan and then I go and buy. So I’ll usually make a meal plan and plan out our meals and then I’ll go buy whatever we need […] and then I’ll make the meals […] I don’t think that we have a lot of food that we buy that we don’t eat. Usually we eat it or we prepare it in some way and I end up throwing it out. I don’t think I’m over buying, it’s just a matter of if it gets eaten or not after it gets prepared. (CF-22)

This sentiment was echoed by many participants in the interviews, and particularly around leftovers in the fridge and ends of meal portions. It may seem simple and obvious that food waste is the result of food that does not get eaten, and therefore eating food is food waste management. But, of course, eating as a form of waste management is quite complex. As Guthman (2011) points out, “… markets for food cannot be infinitely expansive because there are limits to how much food any one person can eat, certainly at a sitting and possibly over time” (p. 181). The body presents a challenge to attempts to spatially fix capitalism (Guthman, 2011), and this can be seen through the contrasting of eating with food waste production. Examples throughout this thesis reveal how bodily limitations might produce food waste (for example through plate scraps and children’s leftovers), and how the various processes leading to food waste might also limit food’s consumption (from mould, rot and smell, to preference, routine change, and time constraints).
A focus on eating also reveals structural responsibility over food waste management in the home. For example this participant reveals that when she does not eat leftovers, they go to waste:

[…] if it’s a leftover that I’m not quite as fond of – because I’m the one that’s home during the day and cooking lunches at home – I tend to consume more of the leftovers. So if it’s something I don’t like quite as much it might not get consumed in its entirety. (CF-16)

This was unaffectedly stated by the participant during the interview; she does not necessarily have a desire for help in consuming the unwanted leftovers. However, such instances highlight that relationships to food waste in the household differ amongst various actors in the household. For example, the above comment reveals that Participant 16 eats the majority of the leftovers in the home because she is at home during the day. In a similar encounter with one of his participants, Evans (2012) reasons that: “One might wish to argue that [this participant] could stay at home, eat the leftovers and so prevent them from becoming [waste]. However arguments such as these – quite aside from lacking humanity and empathy miss the point that as a “housewife”, [this participant] is structurally at risk of boredom and isolation” (p.44). There is responsibility for those closest to food procurement and provisioning to consume (eat) and foster consumption (eating) in others. This unevenly distributes the responsibility of food waste management in the household.

5.3 Food(waste)work

Through the extension of a feminist framework this section has shown that food waste management is a component of foodwork, and that various forms of foodwork also contribute to food waste management (if not avoidance). The performance of foodwork carries a distinctly feminine history, and DeVault (1991) asserts that “[t]he work is noticeable when it is not
completed (when the milk is all gone, for example, or when the meal is not ready on time), but cannot be seen when it is done well” (DeVault, p. 56). Food waste becomes representative of poorly performed foodwork when attention is not paid to the supporting work that goes into food’s procurement and provisioning. Scholars show how “…disregard for unpaid foodwork as real work renders the persons held responsible for it (mainly women) of less consequence than those who are ideologically positioned as family breadwinners (mainly men)” (Brady et al., 2012, p. 127). Moreover, purposeful deskilling campaigns have limited the social access that food provisioners have to knowledge translation around cooking (Jaffe & Gertler, 2006), therefore undermining the potential for food(waste)work to be performed expertly. Thus by acknowledging waste management in various forms of foodwork, and evidence of foodwork even in waste production, scholars and those concerned with household waste reduction should examine and consider how the responsibility for food waste management has been constructed to fall along gendered lines.
Chapter 6: Conclusions

This research explores food wasting in 22 households in Guelph, ON through adapted photovoice methodology. This work gives insight into the ways that householders views their food waste production. Through interpretation of the data via discard studies, critiques of capitalist agriculture, and feminist food studies this thesis makes connections, and notes disconnects, between household experiences of food waste and systemic and institutional forces. This chapter offers a summary of the findings of this study, the scholarly contributions made, policy recommendations based on the findings, and areas for future research.

6.0 Summary of findings

To investigate the transition between food and waste in households, participants were asked to take a photo of the moment when they recognized that food was going to waste. It is apparent through the photo content and interviews that waste is subjective and that moments of waste are representative of the decision to waste at that time, rather than an intrinsic quality of the wasted item itself (Gregson et al., 2007). Furthermore, the decision to waste is developed through a series of negotiations leading up to a moment, yet waste is mostly noticed at the time of disposal and around a waste conduit (O'Brien, 2013). This is congruent with Quested et al.’s (2013) conclusion that the challenge in the context of the household is that “by the time food is thrown away, the opportunity to prevent that food from becoming waste has often passed” (p. 4). By considering senses and pre-defined moments of waste, a series of categories and contexts can be developed around food(s) being wasted. The use of senses, categories, and contexts around
food wasting identified by this study are largely confirmatory of household studies done in other international/regional contexts.

By using photos and semi-structured interviews to engage with food waste stories, this study emphasizes the importance of engaging with the visceral experiences of food wasting (see also Waitt & Phillips, 2015, and Watson & Meah, 2013). In particular, this study acknowledges that participating in food wasting does not always reveal a negative experience, and asserts that it is important to consider all food waste experiences. After conducting this research, I question the leveraging of negative experiences around food waste by reduction campaigns when there has not been space created to explore other emotional potentialities.

As of yet, Guelph has not undertaken large-scale education campaigns targeting food waste. The prevalence of individual responsibility in participants’ responses could be seen as another potential levering point for food waste reduction. However, as food waste awareness grows, policy makers should also raise awareness of food wasting throughout the food supply chain. Large food retail outlets dominate the food landscape in Canada, and the amount of control that these food retailers have is becoming ever more monopolistic (Winson, 1993). Because power is so highly concentrated in the food system, it reduces the amount of control the consumer has over pricing and quality standards. Retail environments have major influence over where we shop for food, how we understand it, and who we purchase it from. Additionally, the associations participants made between food and wasting behaviours were mediated through interactions with the waste system in Guelph. The food waste stories that participants shared during interviews reveal the interplay between personal experiences and systemic influence around food wasting in a household. These systems and institutions are not always identified by householders themselves. Participants hold themselves highly accountable for the production of
food waste in their homes, offering areas for self-improvement or areas for other individuals to improve household food waste management while absorbing the impacts of waste production in other sectors.

The personal and individual responsibility that participants express with respect to food wasting is in line with trends toward educational campaigns where food waste is targeted at the household scale. But as Gille (2012) has shown, waste is a central driver of capitalist industrial agriculture and our food system. Positioning consumers as responsible for resolving the contradiction between profit accumulation and waste means consumers are responsible for adapting to the market. This causes food waste solutions geared towards consumers and individuals to be privileged over much needed structural changes to the food system. Instead of seeing food waste as an opportunity for food system change, food waste is siloed into concerns over efficient home management and personal regard for environmental and social good. This study emphasizes the particularly gendered impact such an individualistic framing has on women who are in the role of home management, and who historically are also burdened with responsibility to address environmental and social calls for the greater good in the domestic sphere.

6.1 Scholarly contributions

Food waste is an underexplored topic with room for theoretical and empirical growth. Chapter 5: Food(waste)work connects household food waste studies to gendered analyses of food and work. The analysis in Chapter 5 contributes to feminist food scholarship and the emerging field of food waste studies. By linking the personal and the political, feminist perspectives make productive contributions to food waste scholarship. Developing the politics of food waste moves
food waste studies of the home beyond mainstream notions of food wasting and morality, and contributes to food waste scholarship that is able to grapple with issues of power and agency in food and waste systems.

My point in challenging the role of the consumer in food waste production throughout this thesis is not to defend household food wasting. Instead, it is to contend that wasting food in the household is more than a problem of individualized overconsumption and moral apathy. Food waste is central to economies of food (Gille, 2012), and women’s bodies – their habits, their corporeal disciplines – are simultaneously made responsible for that economy without acknowledgement (Jaffe and Gertler, 2006) while being reprimanded for the impacts of their “mistakes”, in this case, made manifest through the quantification of high rates of food waste. By interviewing participants about their food waste, this study shows how the quantification of food waste actually captures carework and household maintenance that has gone unnoticed in scholarship on food and food waste, in the framing of food waste reduction campaigns, and often in the homes where food waste is being produced.

6.2 Policy recommendations

In this study, I have shown that the green bin system used by the City of Guelph has helped to construct food waste and imperatives for disposal. The green bin system is congruent with ‘out of sight, out of mind’ mentalities around waste, and the bin does serve to capture and divert organics from entering the landfill. Metcalfe et al. (2013) highlight the bin as a material instrument of policy and question what other “… ‘policy-objects’ could be designed to materialize policy and in what ways do they effect ‘behaviour change’…?” (p. 152). As has been shown, there are visceral responses to food waste that are not adequately altered by the green bin
to capture all food that is going to waste. The green bin system is spreading in other municipalities in Canada and there is potential for other systems of disposal to develop if there is desire to engage people in waste at the household scale. For example, investment in community composting initiatives might help connect processes of food’s decay to food’s production, thereby shifting visceral reactions to the natural process of rot. Hawkins (2006) has described the way composting may serve to ‘enchant’ people with their waste.

Based on the findings of my research, I suggest that provincial policy developments remain focussed on extra-household systems and institutions. To better engage households, municipal policies should work to support food systems that contribute to environmental and social justice. This type of support would necessitate a relationship between food and waste systems planning.

As “sites of socialization” for our interactions with food, retail environments have a lot of responsibility for shaping food waste in the household, and the negative externalities of their profit accumulation needs to be recognized. I question solutions that imply that the consumer should do a better job of accepting the market as it is (such as plan shopping and meals better, or learning new food skills) without educating consumers about how they could ask more of their food systems. As has been shown, food waste becomes representative of poorly performed foodwork when attention is not paid to the supporting work that goes into food’s procurement and provisioning in various food systems. It is important to question responsibility narratives that predicate the consumer as the locus for change, and instead ask how food systems can adapt to better accommodate the needs and desires of consumers, alongside environmental and social concerns.
I contend that municipalities should not adopt the *Love Food, Hate Waste* campaigns without questioning the desired impacts of food waste education. The solutions proposed by the *Love Food, Hate Waste* campaigns attempt to “attend to deficits in consumer knowledge”. This positions “rectifying knowledge deficiencies, rather than structural causes, (as) one of the means to the policy fix” (Alexander et al., 2013, p. 477). Food waste education has the potential to point to shortfalls of food systems; food waste studies should not contribute to seemingly quick-fix solutions.

**6.3 Future research**

The results of my research emphasize the importance of gender in an analysis of food waste. Feminist food scholars in particular should work to acknowledge waste alongside other forms of foodwork as they are well placed to politicize the study of food waste production in the home.

Due to time restraints, certain themes could not be explored further; however, each area has room for further empirical and theoretical growth. Restaurants are an important point of food waste to consider in the Canadian food supply chain (Gooch et al., 2014), but the dynamics between households, restaurants, and food waste production remain underexplored. Various participants made remarks about media interactions when preparing or learning about food. This is a reminder of changing avenues for learning about food safety and handling. Such discussions may contribute to social entrepreneurship or marketing campaigns about food waste (for example, it may indicate a preliminary interest in food sharing “apps” as have been developed elsewhere). Food studies scholars have started to venture into investigations of school lunch
programs (see Guthman, 2011 and Winson, 2012). My findings indicate that food waste studies could contribute to theoretical growth in these areas, and vice versa.

There are a range of emotions elicited by food waste management. Considering the lack of exploration of the relationship between negative experiences and waste reduction, I think that investments should be made in creative projects for food waste reduction and education. Creative projects allow different questions to be asked of waste. Food systems are often celebrated when they provide cultural sustenance, or contribute to ecological values – what might it look like to similarly be able to explore and celebrate our waste systems? Such creative interventions might open up new possibilities for imagining our relationships with food and waste, and for reducing waste in novel ways.

There is need for a politics of food wasting that can deal with the ambivalent ideals and actions people possess in regards to food wasting. I suggest that ethnographic studies make intentional space for acknowledging apathetic and egregious food wasting. I acknowledge the work that ethnographic studies (this study included) have done to push back against dominant “throwaway society” narratives by providing empirical evidence that people are not inherently wasteful. At times it feels counteractive to emphasize that acts of seemingly frivolous wasting do take place, but by recognizing these moments within historical and social contexts rather than individualized pathologies around wasting, I think there is great potential for food waste studies to contribute to sustainable food systems building. Wasting can emphasize shifts that need to take place to create food systems predicated on feeding people rather than extracting profit.

Around household food waste, scholars, city planners, activists and food system workers should (continue to) ask: What kinds of creative solutions could emerge from rethinking the generation of food waste?
Bibliography


Metcalfe, Alan; Riley, Mark; Barr, Stewart; Tudor, Terry; Robinson, Guy; Builbert, S. (2013). Food waste bins: bridging infrastructures and practices. In A. Evans, David; Campbell, Hugh; Murcott (Ed.), *Waste Matters: New Perspectives on Food and Society* (pp. 135–155). Wiley-Blackwell/The Sociological Review.


## Appendix A

### Table 1: Participant Descriptors

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