

**Household food waste: Moral and social dimensions of
the generation, rejection, and disposal of surplus food
from family meals and domestic gatherings (A
qualitative investigation)**

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Abstract

This thesis focuses on the social and moral dimensions of the journey of surplus food within homes, covering a gap in the literature and revealing new ways in which practitioners can intervene. There is a tendency in the food waste literature to relate sets of factors directly to food waste generation, thereby neglecting the many steps in the passage of food into waste. This has led to overlooking the moral aspects involved in managing food, a key topic of this thesis. In addition, this neglect has contributed to claims that people behave in ways that are inconsistent with their moral attitudes towards food waste and that household food waste can be reduced by bridging the attitude-behavior gap.

This thesis looks at how food becomes surplus and then unwanted and the trajectories of unwanted food in both family and domestic gathering settings. Adopting an in-depth interviewing technique using a sample of twenty-eight Muslim Saudi women and the reflexive thematic approach to the analysis, this thesis analyzes the steps of surplus generation, rejection, and disposal within their relevant social contexts, in contrast with earlier work that views food waste as an individual matter. In doing so, the thesis illustrates the prominent social and moral motivations and concerns throughout these steps. While moral concerns and motivations take prominence when disposing of unwanted food, concerns about taking care of family and guests are more prominent during the stage of surplus food generation. In contrast, concerns about serving attractive food take precedent over other concerns during the stage of surplus rejection. These concerns and motivations demonstrate how food can be a

means to express identities, provide a positive eating experience, and enact moral beliefs.

The above findings are organized into empirical chapters that discuss the journey taken by food at the household level. While previous food waste studies conceptualize the good provider identity as one broad concept, this thesis illustrates how the expressions of this identity vary across the family life cycle and in various settings. These expressions reveal different underlying reasons for surplus food generation. In addition, the thesis addresses the limited attention given to how surplus food cleanness impacts on its rejection. It highlights the influence of changes in eating manners on the heightening of food-related disgust and the perception of surplus as (un)clean. Furthermore, the thesis broadens previous findings on the role of taste in the rejection of surplus food by defining the concept of 'sensory eating experience' and revealing how it is influenced by the rise of societal affluence. The thesis also pays attention to circular practices of disposing of unwanted food - sharing and donating food and leaving it out for animals. Engaging in these practices is motivated by deeply held moral beliefs but is hindered by the lack of access to these pathways, resulting in food waste.

This thesis provides insights to practitioners for moving away from blaming individuals for the surplus and food waste generated at the household level, to giving greater attention to the cultural and social context and relationships in which food consumption is situated. Such a way of viewing household food waste would help in forming a robust base from which interventions can be built.

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Chapter 1: Introduction

1.1 Introduction

The research presented in this thesis is designed to understand how food moves from one stage to another in the journey taken by food to waste at the household level. The research investigates such a journey in the Saudi households in two domestic settings, everyday family meals and feasts at social gatherings with guests, and throughout three stages: surplus generation, surplus rejection, and surplus and food waste disposal. Such an investigation provides a detailed picture of how food does or does not become surplus, unwanted, and waste. This thesis has argued that the discourse on food waste neglects some of the steps in the journey of food.

This thesis is presented in a format where the main findings associated with each stage of the journey taken by food to waste are written as stand-alone papers. Given the broad scope of this thesis and the format in which it is presented, this introductory chapter is not intended to provide a detailed review of the literature but to situate the research within the broader context of a burgeoning field of research which examines food waste at the household level.

In light of this, the introduction starts with a section that discusses the research questions within the context of previous food waste literature. It also highlights the gaps which this research seeks to fill. After the thesis format is presented, there is an outline of the methodological choices made to collect and analyze the data presented in the empirical papers. This methodological discussion complements the methodology sections presented in each empirical paper.

1.2 Research Context

This thesis explores the passage of food into waste at the household level and investigates how surplus food is created, rejected, and disposed of. The food waste literature rarely pays much attention to what happens in the stage between 'surplus' and 'waste' (Evans, 2014). In the previous literature, there is a tendency to relate sets of factors directly to food waste. Preparing and serving extra food and poor planning, for example, are identified as the main antecedents of food waste (e.g. Quested et al, 2013; Stefan et al, 2013). However, although these factors contribute to the understanding of surplus food generation, they do not provide explanations of why such surplus becomes waste. The issue of food waste is multifaceted and requires investigating each step that food goes through in its own right.

What happens in these steps of the journey of food has been neglected until the seminal work of David Evans (2011; 2012; 2014). Evans examined the contexts in which food becomes surplus, excess, and then waste and brought attention to the need to understand the lives of ordinary people to address the issue of household food waste. He conducted a UK ethnographic study and provided "a theoretical sketch" that explores the journey of food to waste. He defines 'surplus' as any extra food that exceeds the immediate needs and 'excess' as food that is not useful or valuable, which often ends up being wasted.

My research draws a key distinction between Evans' terms 'excess' and 'unwanted' food, the term used in throughout this thesis. Unwanted food is any surplus food that the families do not want to eat but still consider valuable and not to be wasted. As such, food becomes unwanted before it becomes excess. This thesis highlights how

unwanted food is disposed of through various routes and only part of it ends up being wasted. It further unpacks the movements of food by addressing how surplus food becomes unwanted, before it becomes excess, and the trajectories of this unwanted food, beyond and including the waste stream.

This focus on the movements of food allows going beyond individualistic approaches that focus on associating certain attitudes, intentions, choices, or lack of information directly with food waste (Evans, 2012). Focusing on the individual as a unit of analysis, rather than the social context of food movements, underestimates the extent to which domestic food provisioning occurs in a network of social relationships that extend beyond individuals (Delormier et al, 2009; Schanes et al, 2018). Shifting the focus from attitudes and intentions to studying the social context and relationships helps to provide a nuanced and sophisticated understanding of the roots of household food waste generation (Schanes et al, 2018) and to examine the issue as a social rather than individual phenomenon.

For this reason, this thesis studies the underlying social relations and the processes through which surplus food, unwanted food, and food waste are generated.

Specifically, it poses five questions:

- 1- How is surplus food generated at the household level?
- 2- How does surplus food become unwanted?
- 3- How is surplus food generated at domestic gatherings?
- 4- How is unwanted food handled at the household level?
- 5- How can household surplus food and food waste be minimized?

The first aim of this thesis is to investigate how surplus food is generated. In order to be considered waste, surplus food needs to be rejected first and then disposed of in a conduit that connects it to the waste stream. However, in the previous food waste literature, there is a tendency to relate sets of factors directly to food waste generation rather than surplus generation. For example, the direct consequence of overprovisioning and poor planning is the generation of surplus food, yet previous studies (e.g. Barone et al, 2019; Graham-Rowe et al, 2014; Porpino et al, 2016; Quested et al, 2013) tend to associate these directly with higher amounts of food waste. This thesis argues that food waste needs to be studied as a dynamic process rather than an end result. Hence, addressing why food becomes surplus is a first and important step to understand the complex issue of household food waste.

There is little literature that seeks to understand the reasons for surplus generation at the household level. The only discussion of which the author is aware is that of Evans (2011, 2012, 2014), who studied food waste in British households. He explains that the mismatch between the rhythms of everyday life and the temporalities of food can contribute to the generation of surplus food. For example, due to people having erratic schedules or little time for food preparation, perishable ingredients available at home that require time and effort to prepare can be replaced by food that requires minimum preparation, resulting in surplus. Similarly, other studies point to the link between the arrhythmia of everyday life and the generating of surplus food (Waitt and Philips, 2016) and food waste (Watson and Meah, 2013). Besides, surplus generation can be a result of providers' commitment to prepare proper meals for their families (Evans, 2014). The ingredients of such food are often perishable and at risk of

becoming waste. In addition, families for whom proper meals are served tend to prefer 'less proper' options (e.g. junk food). These two factors can lead to the generation of surplus. Evans argues that surplus generation is not intentional and is a consequence of the ways in which domestic practices are socially and materially organized.

In the first research question, I add to Evans' findings by further exploring how surplus generation can be understood within the family context in which food practices are located. Such exploration allows examining how the generation of surplus food is shaped by family growth. It also enables revealing fresh insights into how food can be a means to express identity, how such an expression is maintained as families move from one stage of life to another, and the consequences of that on surplus generation. These insights provide an in-depth understanding of how surplus food is generated in different family contexts, contributing to the scarce food waste literature.

The second research question this thesis addresses is how surplus food becomes unwanted. Previous food waste studies point to perceived health risks (Andrews et al, 2018; Farr-Wharton et al, 2014; Hebrok and Heidenstrøm, 2019; Soma, 2017), the relative unattractiveness of leftovers (Blichfeldt et al, 2015; Clark and Manning 2018; Porpino et al, 2016; Romani et al, 2018; Waitt and Phillips, 2016), and the desire to eat a variety of food (Andrews et al, 2018; Evans, 2014) as the main reasons for rejecting surplus food. These studies point to scattered explanations and do not yet address the roots of the rejection of surplus food. This thesis fills this gap by providing multi-dimensional explanations of why families do not consume the surplus food available at home. It reveals the underlying cultural, social, and hedonistic factors that

contribute to the perception of surplus food as less appealing. It also illustrates how householders manage different surplus food parts and designate some of them as (un)wanted. In that, the thesis looks at how disgust sensitivity and seeking sensory eating experience influence whether surplus food becomes or does not become unwanted.

The third research question focuses on the generation, rejection, management of surplus food in a different context: social gatherings hosted at home. This topic has been treated briefly in the food waste literature as a part of everyday food consumption and waste (e.g. Aktas, et al., 2018; Graham-Rowe et al., 2014; Romani et al., 2018; Visschers et al., 2016). Little is known about the range of domestic hospitality practices that people engage in while preparing meals served to guests and how these practices impact on the generation of surplus and food waste. In addition, it is not yet clear how hosts negotiate their perceived social duties to be generous and their moral duties to avoid food waste and the influence of those on the generation of surplus and waste. Previous studies provide brief explanations of food waste at domestic gatherings by pointing to the desire to be a good provider and avoid the embarrassment of running out of food (Aktas, et al., 2018; Graham-Rowe et al., 2014; Romani et al., 2018; Visschers et al., 2016). However, these studies look at food waste at gatherings as a part of everyday food consumption and waste and rarely pay attention to factors that are specific to such occasions. The issue of food waste is complex and context-specific (Quested et al, 2013) and so there is a need to address the lack of literature that explains the passage of food into waste at domestic gatherings.

The fourth aim of this thesis is to explore how unwanted surplus food is managed at home. Investigating this topic uncovers the circular practices that are already under way in people's homes, the motivations behind engaging in such practices, and how such insights can aid efforts to understand and minimize household food waste.

This step of the passage of food into waste, the disposal of unwanted food, is under-investigated in the food waste literature. In the studies that look at the factors that contribute to food waste (Evans, 2014; Waitt and Philips, 2016), there is a general assumption that surplus food, or the majority of it, ends up being wasted. Although this might be true in some contexts, there is a need to actively investigate the various ways in which householders disposed of surplus food. UK-based studies by Mylan et al (2016) and Evans (2014) highlight the existence of various circular practices (such as sharing food with others, putting out food for animals, and composting) in some British homes. However, as Evans suggests, these practices do not operate consistently or effectively to dispose of surplus food in ways that save it from wastage. A study by Soma (2017) of food waste in Indonesia reveals a different aspect of food disposal by highlighting how householders pass unwanted food to those on lower incomes in a manner that is consistent with their moral beliefs.

This thesis expands on previous work on the circular practices that already take place in homes. It explores how people enact their moral beliefs as they dispose of unwanted food and food waste. Food waste has seldom been studied from a faith perspective (Zamri et al, 2020) and so this thesis fills such a gap by revealing the moralities behind food disposal practices. Furthermore, to the author's knowledge, no study has explored the range of domestic circular practices people adopt to avoid food

waste, how and why they adopt these practices, and the perceived barriers that prevent people from disposing of unwanted food. In addition, it is not yet clear how people handle food after it becomes waste. This knowledge would contribute to efforts aimed at reducing household food waste that ends up in landfill. The thesis provides insights to help tap into people's existing beliefs and encourage and capitalize on the practices that people already adopt. Overall, this part of the thesis aims to provide a fresh look into the ways in which people enact their values and beliefs to direct unwanted food to different pathways away from the waste stream and instances in which that enactment can be hindered, resulting in food wastage.

The findings of this thesis provide insights into how household surplus food and food waste can be minimized. This fifth question is addressed in the conclusion chapter, which highlights how the passage of food to waste can be interrupted. The chapter also discusses the normative and practical issues that would make interrupting this passage challenging.

The conclusion chapter approaches the issues of household surplus food and food waste generations as social rather than individual phenomena. So instead of focusing on bridging the so-called gap between behavior and attitudes, the recommendations are situated in the broader social and cultural contexts in which surplus food and food waste are generated.

In the food waste literature, there is a general view that there is a gap between moral attitudes towards food waste and behaviors associated with it (e.g. Graham-Rowe et al, 2015; Stancu et al 2016), in that people behave in ways that are not consistent with

their moral attitudes. There is also a tendency in the literature to recommend awareness and educational-based interventions to bridge such a gap (e.g. Canali et al, 2016; Graham-Rowe et al, 2015; Mattar et al, 2018). This thesis argues that the discourse in the literature about food waste seems to contribute to these views as it neglects some of the steps in the journey of food to waste. By tracing the movements of food, this thesis refutes the argument about the attitude-behavior gap to reveal the complex network of moralities behind the generation and disposal of surplus food and food waste.

1.3 Thesis Format

This thesis is based on four empirical papers that address the passage of food into waste. One of the papers has been published as a journal article (Appetite Journal, chapter 3), two are under review (chapter two and four), and a paper is in preparation for submission (chapter five). These papers represent the complexity of the issue of household food waste while connecting the broader linkages from the findings into a holistic thesis.

I co-authored Chapter three with my supervisor Tim Harries. Under his supervision, I designed and carried out the study, including data collection, data analysis and the writing process and he had participated in the critical review of the manuscript.

The thesis includes an introductory chapter followed by four chapters that represent the empirical findings of the thesis. These chapters tell the story of how food becomes or does not become waste. The first empirical chapter (chapter two) explores how surplus food is generated through the lens of the family life cycle, focusing on the role

of the good provider identity in the provisioning of extra food. It is followed by Chapter three which investigates how householders classify different parts of surplus food and the reasons for rejecting some of that surplus. The chapter provides multi-dimensional explanations for deeming surplus food as unwanted by the family. Chapter four pays attention to the under-investigated topic of food waste at domestic gatherings. It discusses how the hospitality practices people adopt while preparing food for their guests lead to the generation of surplus food and how circular practices help to divert it away from the waste stream. Chapter five explores the last step of the food journey by looking at the trajectories of unwanted food. It reveals various routes to dispose of unwanted food as well as the circular practices people adopt to manage food, and the motivations and barriers to adopting these practices.

These empirical chapters provide a well-organized overview of the passage of food into waste in two settings. They are followed by the conclusion chapter that provides a synthesis of the thesis and an overview of its theoretical and practical contributions. The chapter also discusses recommendations and presents a call for future research.

1.4 Methodology

1.4.1 The Research Paradigm and Methodological Choices

The overall aim of this research is to investigate the passage of food into waste at the household level. This was achieved by a qualitative methodology using a responsive interviewing technique (Rubin and Rubin, 2012) and Braun and Clarke's (2006; 2013) reflexive thematic analysis approach. The methodology was determined by the

research paradigm, the nature of the information needed to address the research aims, and the context of the research.

The epistemological premise that guided this research is interpretative in nature. Interpretivism dictates that knowledge is generated inductively by exploring and understanding social phenomena from the perspective of the research participants, focusing on their experiences, circumstances, and meanings (Ormston et al, 2014; Saldaña, 2011). Social phenomena are often complex and require employing approaches that produce rich, in-depth understandings and interpretations that are grounded in the data (Bryman and Bell, 2015). Therefore, the interpretative paradigm encourages studying social phenomena inductively and generating concepts that are time- and place-bound and are sensitive to the social context of the study (Creswell, 2013).

Reading about the interpretative paradigm early in the research journey influenced how I approached my research. It shifted my mindset; I became wary of approaching research with preconceived ideas and answers. I was more prepared, and also excited, to approach the issue of household food waste with an open mind. This was helpful in understanding the participants' social world and the meanings they attached to food provisioning, surplus food, and food waste. I also approached household food consumption and waste as phenomena that are embedded in the context in which surplus and food waste is created. Incorporating the context in the data collection and analysis helped me to appreciate the complexity of the issue of household food waste and to look for patterns that explain how and when food does or does not end up being wasted.

I was on no doubt that qualitative research was best suited to achieve the research aims. It facilitates the study of what lies behind behaviors and the understanding of different explanations from the perspective of the research participants (Patton, 2015). This was critical in understanding the roots of surplus food and food waste generations and approaching the topic inductively and so avoiding imposing preconceived ideas. However, I was not sure which data collection and analysis methods would enable me to answer my research questions. I went on a journey of reading about qualitative research methods, attending courses, and speaking to my supervisors and other researchers. After that, I decided that Rubin and Rubin's (2012) 'responsive interviewing model' and Braun and Clarke's (2006; 2013) 'reflexive thematic analysis' were the most suitable methodological approaches to answer the research questions.

To collect the data, the responsive interviewing model was used (Rubin and Rubin, 2012). It is a style of qualitative in-depth interviewing that is relatively unstructured and open: it involves starting the first round of data collection with broad open-ended yet directed questions. Decisions about data collection including interview questions and topics to be discussed need not be entirely pre-planned. The researcher is encouraged to devise additional questions, probes, and follow-up questions during the interview itself and throughout the research process, depending on the interviewees' experience and knowledge and the gaps in the data. Therefore, adopting the responsive interviewing model provides contextualized, in-depth data and allows capturing and understanding the richness and diversity of human

interactions in everyday life. This enables gathering rich-detailed data and placing them in their relevant context.

The choice of the responsive interviewing model was informed by both the research aims and context. Adopting this model facilitated achieving the research aims of understanding the passage of food at the household level. Its flexible, open process of investigation allowed studying aspects of my topic inductively, where little is known about these in the food waste literature, as discussed in section 1.1. Moreover, adopting responsive interviewing facilitated gaining in-depth, contextualized data about food consumption and management at home. Food consumption is complex and heavily embedded in and influenced by the context that constrains or enables various food-related practices (Delormier, 2009). Therefore, adapting questions during the interviews, as suggested by Rubin and Rubin (2012), enabled not only the discovery of diverse food-related practices that households adopt to manage food at home but also the thorough investigation of how such practices were influenced by the context and the family situation. The discussion was directed to thoroughly investigate the aspects of life about which the participants had substantial experiences in relation to the consumption of food and the management of food and waste in their homes. Such an open inquiry approach facilitated eliciting participants' definitions of terms, situations, and events, thus exploring a range of meanings, and avoiding imposing preconceived ideas. Accordingly, the generated concepts and interpretations reflected the context from which the data were collected.

In addition to the research aims, the context of the research was another aspect that informed the choice of using qualitative interviewing, specifically the responsive

interviewing model. The research population was female, Saudi citizens. This population is private and might hesitate to share personal information with a stranger. Thus, it was difficult to conduct the research using more intrusive methods such as observations and so interviews were suitable for both the research aims and context.

Furthermore, adopting Rubin and Rubin's (2012) responsive interviewing style facilitated establishing trust by creating an atmosphere that was relaxed and friendly, which was critical for the research population who value privacy. Responsive interviewing emphasizes the importance of building a relationship with the interviewee that is based on trust. This relationship assumes a fair degree of reciprocity which entails the researcher revealing something about herself, for example showing emotions and empathy to what the interviewee is saying. As such, the researcher here is not passive or neutral; she and the conversational partner (the interviewee) co-construct the data by reacting to what the interviewees say and asking follow-up questions.

The responsive interviewing model also acknowledges that both the interviewer's personality and the interview situation have an impact on the style of the interview. Hence, I adapted my interviewing style based on the interview situation. For example, some interviewees were shy at the beginning, so to encourage them to talk, I started the interview with general questions about themselves, the weather, or their study or work, for example, and I was happy to answer their questions about me, my study, and my life. Applying such a style of interviewing helped me to gain participants' trust and ask them personal information about their family life and food consumption. In addition, this style of interviewing is adaptive and stresses the importance of reacting

to what the interviewee is saying and showing emotions because "... empathetic understanding will usually elicit better answers than more neutrally worded questions" (Rubin and Rubin, 2012: p.165). The establishment of empathy and rapport is essential if interviewees are to disclose information to interviewers (Partington, 2001). Therefore, I often reacted to the stories interviewees shared by asking more questions, showing my sincere interest, and my emotions when the stories were sensitive and personal to them. In the Saudi culture, neutrality and conservative reactions when interactions are about personal topics might be interpreted as rudeness and disrespectful behavior. Reacting to what was being said was key to making the interviewees relaxed and encouraging them to open up, which improved the depth of the interviews' content. That being said, I monitored my reactions during interviews in order not to lead the interviewees to answer in ways that they might think I, as a researcher, expected.

To have quality interactions while avoiding leading the interviewees, I adopted several strategies proposed by Partington (2001) during the interviews. This included minimizing interruptions when participants were talking and providing supportive nods rather than excess verbalization to avoid leading interviewees to answer in ways that they might think the interviewer wanted. Also, to have quality interactions, I framed follow-up questions in the light of the interviewees' responses and avoided radical shifts in direction, as that might lead the interviewees to believe that the interviewer was not interested in what was being said. In this regard, the restatement of the interviewees' responses was a useful device that allowed me to demonstrate that I had listened to the answer. Applying these strategies during the interviews

facilitated establishing rapport and showing empathy while avoiding leading the interviewees.

To analyze the data, Braun and Clarke's (2006; 2013) reflexive thematic analysis approach was adopted. It is consistent with interpretivism as it involves considerable analytic and interpretative work on the part of the researcher. It assumes that themes cannot exist separately from the analysts—they are generated by them through data engagement (Ormston et al, 2014; Saldaña, 2011).

Reflexive thematic analysis is a systematic approach consisting of six recursive stages: familiarization; coding; generating initial themes; reviewing and developing themes; refining, defining and naming themes; and writing up. Such a process of analysis aims to go beyond the semantic content of the data to notice patterns, meanings, and underlying assumptions. It encourages recursive engagement with the data and treating the context as a key factor in the analysis process to produce a robust, in-depth analysis. In addition, the close engagement with the data and inductive orientation to coding help in exploring latent, underlying, rather than overt, meanings.

Considering the above, applying the reflexive thematic approach to data analysis facilitated the investigation of underlying factors and meanings and produced explanations for surplus food and food waste generation. Following this approach also enabled analyzing the transcripts systematically and paying close attention to hidden assumptions and latent meanings. The reflexive thematic analysis approach also facilitated exploring the topic of the thesis from the perspective of the research participants and produced an analysis that was grounded in the data because this

approach is centered on exploring research participants' subjective experiences and sense-making.

The reflexive thematic approach goes hand-in-hand with the responsive interviewing style. Close engagement with the data during the familiarization and coding stages was helpful in noticing gaps in the data and hidden assumptions to explore them further in subsequent interviews. This helped in refining the topic guide and asking better follow-up questions during the interviews.

1.4.2 Ethical Considerations

The research was granted ethical approval by the Kingston University Research Ethics Committee (Reference Number 1826). All participants involved in this study were over 18 years of age, their participation was voluntary, and they were asked to sign an informed consent (Appendix A) form before the interview and given a copy of that form and the information sheet (Appendix B). Although participants were asked questions about their lifestyle and food consumption, no questions were on topics that may potentially cause distress to participants. All participants were made aware of how their data would be used and stored, their right to withdraw from the study at any time, and that real names would be replaced with pseudonyms. The research followed the ethical guidelines established by Kingston University at all times.

1.4.3 Participants Recruitment and Profile

The research was conducted in Riyadh, the capital of Saudi Arabia. In Saudi Arabia, female members of the family (mothers, daughters, sisters) assume most of the

household responsibilities including food provisioning and management. Hence, all participants were females who were at least partially responsible for food in their households.

A snowballing strategy was used to recruit participants. Such a recruitment strategy is suitable for gaining access to populations that are generally reluctant to participate in research (Magnusson and Marecek, 2015) and so it facilitated establishing the trust necessary for recruiting participants. It would have been impossible for me to gain access to the research population without first being introduced by someone they know. I approached personal contacts to send the information sheet to those who might be interested in taking part in the research and I used personal referrals from participants to gain additional interviewees.

I was keen on gaining access to participants with varied experiences and so I asked those who approached me to choose any suitable place where they felt safe and relaxed. Most participants chose public places and few invited me to their homes, as they had to take care of their families and could not leave home. In total, I conducted 28 interviews between July 2018 and January 2019. A summary of participants' profiles can be seen in Table 1.1. Table 1.1 provided contextualized data that were helpful in discovering patterns during the data analysis stage. For example, upon close engagement with data, I noticed that the reasons for surplus generation, discussed in Chapter 2, seemed to be socially patterned by the stages of family life. I then updated the topic guide accordingly to explore the topic further and pay attention to how the meanings participants attached to food provisioning were impacted by the stage of life they were at or had gone through. Noticing such a pattern in the data helped me

to analyze it through the lens of the family life cycle and structure Chapter 2 accordingly.

Table 1.1: Participants Profile (pseudonyms)

	Age	Family Situation	Family members	Children in the family	Work
Aljazi	40s	Married	9	Young and Adult	Employed
Amani*	30s	Single/ Lives with mother	4	Adult and Married	Employed
Ashjan	30s	Married	2	None	Employed
Basmah	30s	Married	3	Toddlers	Employed
Dana	20s	Married	3	Toddlers	Employed
Fariydah	50s	Married	7	Adult and Married	Housewife
Fatema	40s	Married	8	Young and Adult	Employed
Faouzia	40s	Married	7	Young and Adult	Employed
Ghada	30s	Separated	3	School-age	Employed
Hanan	20s	Married	4	Toddlers	Employed
Hasna	30s	Married	4	School-age	Employed
Hayla	50s	Married	4	Young and Adult	Housewife
Jameelah	20s	Married	2	None	Employed
Lama	20s	Married	3	Toddlers	Employed
Maha*	30s	Single/ Lives with parents	9	Adult and Married	Employed
Modhi	40s	Married	9	Young and Adult	Employed
Muneera	60s	Separated	4	Adult and Married	Housewife
Nihad	40s	Married	4	School-age	Employed
Qamar	20s	Married	3	Toddlers	Employed
Rahma	20s	Married	4	School-age	Employed
Rana*	20s	Single/ Lives with parents	6	Adult and Married	Employed
Sharifa	30s	Married	5	School-age	Employed
Somaya*	30s	Single/ Lives with parents	6	Adult and Married	Employed
Suaad	40s	Married	6	Young and Adult	Employed
Taghreed	30s	Married	6	School-age	Housewife
Walaa	40s	Married	4	School-age	Housewife
Yara	20s	Married	3	Toddlers	Employed
Zaineb*	30s	Single/ Lives with parents	5	Adult and Married	Employed

*I interviewed the daughters who shared food management responsibilities with their mothers and sisters

1.4.4 Interview Process

The interviews were in Arabic, the native language of the participants and the researcher. They were recorded and transcribed verbatim. The analysis was applied to the Arabic transcripts as some of the meanings might be lost in translation. However, codes and memos were in English. This is important to ensure that the ongoing work could be easily and directly communicated to the supervisors and as the thesis is written in English.

Interviews lasted between 30 and 120 minutes and for 70 minutes on average. It covered a range of topics related to food management at home and the food cycle from shopping to disposing of unwanted food. A particular focus was paid to the circumstances that led to surplus generation and emotions associated with food provisioning; the process of handling surplus food and classifying its different elements; and the management of food that was deemed unwanted, before and after it became waste. The topic of domestic gatherings came later during the interviews when participants were asked to compare the everyday food-related routines they spoke of to those involved in domestic gatherings. Follow-ups and props were devised during the interviews to gain in-depth insights into how participants managed food in different settings and circumstances and the meanings they attached to different practices. Appendix C shows the topic guide which I referred to during the interviews.

1.4.5 Data Analysis Process

I followed the six-stage process proposed by Braun and Clarke (2013) to analyze the interviews. The process started with familiarization. After each interview, I transcribed it verbatim and although it was a time-consuming process, it allowed me to be familiar with the data and notice possible gaps and interesting points to pursue in subsequent interviews. I read the transcripts several times and wrote my reflections in memos and referred back to them before the next interview. In this way, my analysis guided the collection of data in an iterative manner, which is consistent with the responsive interviewing model that encourages following leads and updating the topic guide accordingly.

I started writing memos after the first interview and continued throughout the research process. I adopted the recommendations of Corbin and Strauss (2008) about effective ways to write analytical memos. I recorded hidden assumptions and concepts that were taken for granted; comparisons of data and concepts; and gaps in the analysis. Writing memos in this way helped me to engage in intellectual conversations about the data, and move beyond description to analysis.

The next step was coding the transcripts. These were then coded comprehensively, looking for chunks of data that were relevant to the research questions. In the initial coding stage, I coded line by line and also incidents that were relevant to the research. This type of thorough coding helps one to remain open and close to the data at the same time, pay attention to details, challenge understandings that are taken for granted, avoid reading data for general analytic themes (Charmaz, 2006), and

minimize the risk of missing important categories (Holton, 2007). My coding process also involved comparing each coded part under the same category with the others to examine similarities and differences which helped in densifying concepts, identifying gaps in data, and discovering leads to pursue. I used four categories, each representing one research question: surplus generation, surplus rejection, unwanted food management, and food waste at domestic gatherings. This was followed by a search for patterns, variabilities, and consistencies under each category and across the data set in an iterative process that took me back and forth between transcripts, codes, and patterns. Themes then were identified at the manifest and latent levels. I then started writing each research paper and revisiting the literature which informed the final version of the analysis.

Throughout the research process, I observed the quality criteria proposed by Braun and Clarke (2013). The authors provided details for how quality can be observed on each step of the data analysis process, from the transcription to the writing stage. This included giving all data equal attention early in the analysis process, checking themes against the original data, and ensuring that the analysis told a convincing well-organized story about the data and the topic.

Chapter 2: Reasons for household food waste: how the good provider identity impacts surplus food generation across the family life cycle

Abstract

This paper investigates the first step in the journey of food to waste: the preparation and generation of surplus food. It reveals the reasons for surplus generation, how it can be necessary for the competent enactment of the good provider identity, and how such an identity and the requirements of its enactment vary across the family life cycle: from the early stages of married life to the later stages when children leave home. The paper argues that the outcome of such an enactment cannot be taken as evidence of a lack of concern about surplus and food waste; rather, such concerns are sometimes outweighed by the social and emotional costs of identity damage that are associated with lower surpluses. The paper draws on interview data with 28 Saudi women to reveal how food provisioning facilitates the performance of the good provider identity. Food provisioning is seen by participants as an opportunity to demonstrate their homemaking skills, meet their perceived obligations to ensure that younger children are well-fed, and nurture the social bond with their adult offspring. The paper reveals, too, how food surplus generation is influenced by providers' varying abilities to execute meal plans across different stages of family life. The paper concludes that public messages that encourage providers to reduce surplus food and do more food planning will only be effective if they consider how food provisioning is deeply rooted in wives' and mothers' identities as nurturers and how food planning is related to the stages of family life.

2.1 Introduction

"They recommended mixing dates with oats and my daughter immediately spat it out. While I was throwing it out, my tears were falling because wasting food is

haram (forbidden) and the second thing is that I feel sorry for my daughter because she does not eat well"

[...]

"Sometimes in anger, I spill the soup in the drain. I have a moment where I feel, I don't know, crazy, and I throw it out. Then, when I calm down I say 'what did I gain? How is that related to feeding! They are two separate things but in anger, at such moments, I throw out the food". (Dana - 20s – mother of a toddler)

These excerpts from Dana's interview illustrate the contradictory pressures mothers face simultaneously to be good providers and to control surplus and food waste in their homes. This paper aims to reveal such moments of everyday life in which surplus minimization contradicts the wish to be a good provider. As illustrated in this paper, how the social role of the good provider is performed seems to be socially patterned, particularly by the stages of family life. The successful performance of such a role often entails the generation of surplus food and potentially food waste.

This paper demonstrates how the good provider identity is expressed and maintained throughout the family life cycle and the impact of that on surplus generation. It is part of a household food waste study that aims to understand how food becomes surplus, how this surplus in turn becomes unwanted, and the trajectories of such unwanted food in Saudi households. The analysis reported here provides insights into the first step of the journey of food to waste: surplus food generation.

In the food waste literature, there is a tendency to relate particular sets of factors directly to the generation of food waste. Overprovisioning, for example, is a main explanation given for household food waste; however, as Evans (2014) argues, over-provisioned food rarely crosses the line to directly become waste. Evans draws attention to the journey taken by food in the household, from surplus to excess to waste. Surplus is food that exceeds immediate needs and excess is food that cannot be imagined as useful, whereas waste is a consequence of how food is disposed of (Evans, 2014). Considering the movements of food, factors that are associated with surplus generation are different from those associated with the rejection of surplus food and with food waste. Hence, there is a need to separate the stages of the journey of food to waste.

The rest of the introduction (section 2.1.1) reviews the relevant food waste literature on the good provider identity and highlights the paper's approach and contributions. This is followed by an overview of the research methodology (section 2.2). Section 2.3 provides the empirical analysis of the data. Section 2.4 discusses the paper's contributions to the food waste literature and provides concluding remarks.

2.1.1 Provider identity in the household food waste literature and this paper's approach

The good provider identity has been identified as a precursor to overprovisioning and food waste (Barone et al, 2019; Chammas and Yehya, 2020; Graham-Rowe et al, 2014; Evans, 2014; Porpino et al, 2016). Studies suggest that the desire to be a good parent or partner is often fulfilled by overprovisioning food (Graham-Rowe et al, 2014; Porpino et al, 2016; Visschers et al, 2016). For example, mothers tend to express love

and care for their families in ways that involve preparing and serving meals in large portions (Chammas and Yehya, 2020; Porpino et al, 2016). Serving food for the family, as such, serves social functions beyond nutrient intake. It is an appropriate mode of expressing care towards family (Evans, 2014) and so providing ample food can be interpreted as an expression of the good provider identity (Graham-Rowe et al, 2014).

Such good intentions to take care of family can conflict with the desire to minimize food waste. Studies suggest that the good provider identity can result in a dilemma among those who are concerned about food waste but also want to serve plenty of food to others (Barone et al, 2019; Visschers et al, 2016). The latter concerns about under-serving often win over those about food waste, leading to overprovisioning (Graham-Rowe et al, 2014). Surplus food and waste, as such, can be viewed as a consequence of providers' good intentions to take care of their families (Porpino et al, 2016), rather than a careless disregard for the food that they over-provisioned.

Taking the discussion above into consideration, the FAO's recent definition of food waste is problematic. FAO (2017: 2), referred to food waste as the removal of food "that is fit for consumption, by choice, or which has been left to spoil or expire as a result of negligence by the actor, predominantly, but not exclusively, the final consumer at the household level". Individuals, as such, are expected to solve social problems by changing their food-related behaviors (Evans, 2014) and making informed decisions to reduce food waste in their homes. This paper argues that while food consumption is personal, it is also influenced by social relationships in important ways. Household food waste should not be read as a careless disregard for food and waste. The role of food exceeds that of feeding and sustaining bodies; food

consumption has a key role in facilitating the performance of social identities and nurturing social relations.

This paper argues that surplus food generation, and so food waste generation, is not a result of "negligence"; rather, surplus is generated after serving social and emotional purposes such as supporting the good provider identity. The paper also takes a cue from food waste studies that adopted a practice-based approach. These studies (e.g. Evans, 2014; Southerton and Yates, 2014) call for moving beyond blaming consumers and for examining food practices within the contexts in which they are located. Food waste is not seen as a function of consumers' food choices because "it makes little sense to think that people make deliberate and irresponsible choices to purchase too much food when they know that they may end up wasting it" (Evans, 2014: 27). Rather, these studies view food waste as a consequence of the ways in which practices of everyday life are carried out.

This paper investigates the generation of surplus food in Saudi households using a practice-based approach. It contributes to the scarce literature on food waste in Arab and other Islamic countries. Most of the research reported above has been carried out within a western cultural context. Systematic reviews of food waste in Arab countries (Abiad and Meho, 2018; El Bilali and Hassen, 2020) point to the lack of research on the causes of consumer food waste in these countries. Studies from this part of the world identify socio-demographic characteristics, attitudes, and behaviors related to food waste (Abdelradi, 2018- Egypt; Aktas et al, 2018- Qatar; Mattar et al, 2018- Lebanon) and adopt a behavioral, individualistic approach to study such an issue (although see Chammas and Yehya, 2020). However, domestic food provisioning occurs in a network

of social relationships that extend beyond the individual; and so a practice-based approach will enable apprehending underlying social relations that connect people (Delormier et al, 2009) and their impact on surplus food generation.

The main contribution of this paper is in capturing the complexities and nuances of the good provider identity through the lens of the family life cycle. There is a tendency in previous food waste studies to conceptualize this identity as one broad concept; it is often used to refer to the wish to be a good host and a good parent. This paper argues that concerns associated with preparing food for the family are different from those associated with serving food for guests. The latter is influenced by hospitality norms prevalent in society (Shryock, 2012 – see also Chapter 4 for a detailed discussion); whereas feeding the family is an expression of parenthood motivated and deeply rooted in the good provider's identity, as this paper illustrates. Moreover, although food waste studies point to the significance of such an identity, little is known about how it evolves and is expressed and maintained with family growth. Such insights will reveal how the enactment of this identity varies across the family life cycle and how that in turn influences food provisioning and surplus generation.

In the food waste literature, several scattered findings indicate changes in food waste levels across different types of families. For example, the presence of children is associated with more food waste (Parizeau et al., 2015; Visschers et al., 2016). The reasons could be related to the difficulty of predicting children's appetite and that they are often selective in what they are willing to eat (Cappellini and Parsons, 2012; Evans, 2014; Kansal et al. 2021). Single households tend to waste more per capita (Jörissen et al., 2015), which could be related to their unstructured lifestyle

(Ganglbauer et al., 2013; Nikolaus et al, 2018). The age of household occupants also correlates with the amount of food waste: a higher number of younger people in the house is associated with more food waste (Tucker and Farrelly, 2016). Moreover, setting plans for shopping and meals is more difficult at some stages of life than others (Hebrok and Boks, 2017; Nikolaus et al, 2018). This paper goes beyond reporting sociodemographic factors and illustrates how surplus food is generated at different stages of family life.

2.2 Methodology

This paper is part of a study that examines the journey of unwanted food in Saudi households, undertaken between July 2018 and January 2019 in Riyadh, the capital of Saudi Arabia. It reports analyses related to the first step of the journey of food to waste: surplus food generation.

The paper focuses on studying surplus related to one meal: lunch, the main meal of the day in Saudi households. Lunch is often the only home-cooked meal eaten together by Saudi families. It is an opportunity to spend time with the older members of the family and to ensure the younger members are well-fed. Studying surplus associated with lunch is a good opportunity to reveal the ways in which the daily recurrent practices characterizing family feeding symbolize, reinforce, and reproduce social relations.

Twenty-eight interviews were conducted with female, Saudi citizens that were at least partially responsible for food in their households. To recruit participants, a snowballing strategy was used. Snowballing is recommended for hard-to-reach,

private groups (Magnusson and Marecek, 2015), such as Saudi females, for whom trust can help facilitate access. An invitation letter was shared with friends and acquaintances to send to people they know and the researcher then was approached by people who were interested in participating in the study. Invitation letters were also given to interviewees to send to others who might be interested in taking part in the study.

Interviews lasted between 30 and 120 minutes and for 70 minutes on average. It covered a range of topics about food management at home, including the circumstances that led to surplus food generation, and emotions associated with food provisioning. A responsive interviewing style was adopted (Rubin and Rubin, 2012). This style of interviewing encourages the use of follow-up questions and probes during the interviews to capture each participant's unique perspective. This allowed investigating the meaning of food and feeding for each participant and in relation to the stages of life that they had gone through and were going through.

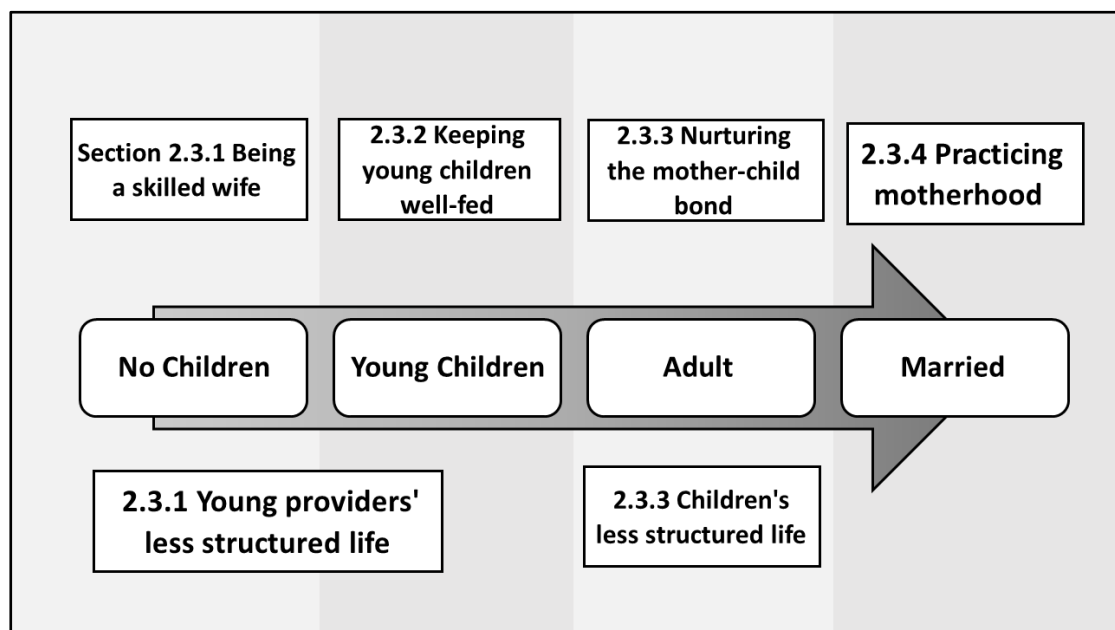
Data analysis was conducted in accordance with the thematic analysis approach proposed by Braun and Clarke (2013). This method enables going beyond the surface-level content of the data to notice patterns, meanings, and underlying ideas (Braun and Clarke, 2006). After familiarization and coding, the researcher went through cycles of reading the verbatim transcripts and doing initial coding. Transcripts were coded in several coding cycles and similarities and patterns across the data were recorded in analytical memos. One of the key patterns across the data set was of how surplus food generation can be explained by the good provider identity and how this varies between the stages of family life.

Table 2.1 shows participants' profiles in accordance with these stages. These were determined, in part, by the birth and maturation of children, because their impacts on family dynamics and food provisioning were noticeable in this study. The stages reported in this study are a result of inductive analysis and represent variations in meanings attached to food and feeding that were noticed in the data.

Table 2.1: Participants profile

	Children			
Participants names	None	Young	Adult	Married
Ashjan, Jameelah				
Basmah, Dana, Hanan, Lama, Qamar, Yara		Toddlers		
Ghada, Hasna, Nihad, Rahma, Sharifa, Taghreed, Walaa		School-age		
Aljazi, Fatema, Faouzia, Modhi, Suaad				
Amani, Fariydah, Hayla, Maha, Muneera, Rana, Somaya, Zaineb				

Figure 2.1: The underlying reasons for surplus generation across the family life cycle



2.3 The analysis

This section explores how the good provider identity evolves as the family grows and the implications of that on surplus food generation. It explores the family life cycle from the early stages of married life to the later stages, when children get married and leave home, as illustrated in figure 2.1.

2.3.1 Managing food early in married life

This section explores how the enactment of the social role of young wives and their less structured lifestyles impact surplus food generation in the early stages of married life.

As the data in this study shows, the wives enter marriage knowing that they are expected to manage food in their homes so they know the challenge ahead of them: proving that they are *sanaa* (skilled in homemaking). One way to show their *sanaa* status is by preparing appetizing and varied meals. They often end up with surplus food because their lives at this stage are full of many unknowns; they do not know their new routines, their husbands' eating preferences and how much they would eat, so do not know how much to cook and buy, and how to manage food in their homes.

Yara (20s) is among the wives that experienced this journey of surplus generation early in her marriage. She reported her efforts to be "*sanaa*" and her "excitement" and desire to impress her husband with her "cooking skills". She prepared "a new dish every day" and so using new ingredients; for example, she opened a can of beans, used it, and placed the rest in the fridge and the next day she opened something else,

without having plans to use what she already had. She described this as "poor planning". Although she was able to show her cooking skills, she felt "depressed", "guilty" and "afraid" of God's punishment because the large amounts of food that went uneaten signified that she and her husband had "thrown away the blessing" of food. It took her a year or so to act on her religious beliefs and fears and to start limiting surplus at her house. The change occurred after knowing her husband and his preferences better, hence being able to meet the demands of her social role as a *sanaa* wife.

Rahama (20s) is a similar case to Yara. During the first two years of her marriage, Rahama felt stressed about the amount of surplus and feared that she would be punished because of her wastefulness:

"Sometimes I felt that God would take away the money from me if I continued in this way: buy and throw away, buy and throw away. And also whenever we went shopping [...] it is at least a thousand riyal; a thousand riyal all for leaves and fruits and vegetables. I mean something that a sane person doesn't accept. But you know, we were at the beginning of our lives and didn't know yet what we needed and did not need. And I didn't know his eating habits yet and he did not know mine too. "

Although Rahma felt "guilty" because of her wastefulness, she only started to limit surplus after being "aware" of her small family's needs. As the story of Yara and Rahma illustrates, religious and financial concerns about surplus and food waste resurface when wives settle into their new lives and become less occupied with adjusting to the

challenge of being *sanaa*. This suggests that concerns about surplus for financial and religious reasons are significant but not enough to overcome the desire to be *sanaa* in the early stages of married life.

The examples above illustrate that surplus is an unintended consequence of these young wives' attempts to meet the expectations of their *sanaa*'s role. Interviewees described food preparation at the early stages of marriage as challenging (e.g. "stressful"; "chaotic") because of the amount of surplus they ended up with and the lack of organization in their food management. After a year or so of marriage, they started to limit spending and surplus by making food provisioning more planned and structured by, for example, writing meal plans and shopping lists.

While young providers' use of planning limited surplus that resulted from the lack of organization, surplus still arises because of their less structured lifestyle, with more spontaneous activities. In the initial phases of marriage, women are between two stages of life. On one hand, they are not single anymore and have to enact their role as providers and so they purchase food at relatively fixed intervals. At the same time, the young wives in this study described cooking as an unpleasant and mundane chore and so occasionally choose to order food from outside the home or go out to eat. In addition, interviewees felt that they do not have to maintain a strict routine and stay at the home more often, compared to families with older children. This stage of life seems to last until children join school and family life becomes more structured.

For example, Basmah (mother of a two-year-old) mentioned that she is conscious of food waste and tries to plan for meals but her plans "do not go well 100% of the time"

as she "is not perfect" and sometimes feels "stressed" because of work and so "not in the mood to come home and cook". As such, instead of using the ingredients that are already purchased, she and her husband eat from outside "so what should have been cooked stays uneaten". Similarly, Jameelah (no children) writes weekly meal plans to avoid buying unnecessary items. While her food provisioning is structured, her life is not: "I don't have children so I feel I don't have a certain routine as a large family have". So the family outings tend to be spontaneous. Her husband sometimes decides to go out with his friends after work and so she goes to her family or friends. Ashjan (no children) pointed out that "unexpected circumstances", such as when her husband is caught up with work, are chances for her to rest from kitchen work and enjoy a takeaway meal. These young wives felt that juggling their new roles as providers with their busy work and social life is overwhelming. Therefore, food that they already acquired is displaced by something that requires less effort to prepare and so moves into the category of surplus.

As explored here, the social role of young providers involves structuring food provisioning. However, for reasons of being tired or bored, or wanting to go out and socialize or relieve themselves from mundane chores - young providers opted for out-of-home meals or something that requires minimum preparation. This in turn interrupts meal plans. If these young providers were to commit to their perceived role of cooking more often, hence sticking to their meal plans, they would miss out on opportunities to go out, socialize, or simply rest at home. As such, these young providers want to enjoy the flexibility of their lives, before their routine becomes more fixed as their children join school.

To the author's best knowledge, no previous studies have focused on surplus food generation and food waste at the early stages of married life. The food-related studies that have investigated such a stage suggest that food plays an important role in expressing the identity of providers (Bove and Sobal, 2006; Bugge and Almås, 2006). Norwegian (Bugge and Almås, 2006) and US (Bove and Sobal, 2006) studies argue that cooking and food are ways of expressing love and affection. The Norwegian study suggests that food preparation becomes an identity work; new wives consider their efforts in preparing food as an important indicator of "a woman's womanliness", which has the same connotation as the *sanaa* skills referred to in this study. The US study's findings are less gendered but also suggest that the partner who does the cooking feels responsible for satisfying the significant other's preferences. These two studies also point out that couples go through a period of adjustment, similar to the one mentioned in this section, during which their eating patterns gradually merge into a new collaborative food system. In this study, these two factors: the way in which food practices are changing and converging, and the role of food in expressing the provider's identity - are identified as the main reasons for surplus generation early in married life.

2.3.2 Keeping young children well-fed

This section explores how surplus rises with women's attempts to feed their young children. As the children started to eat solid food, mothers in this study felt overwhelmed with worries about the standard of nutrition they were providing. Their attempts to introduce their children to new food and keep them well-fed often resulted in surplus.

Dana, Yara, and Hanan experienced such a struggle with their toddlers. Dana described her two-year-old daughter as “the most wasteful one (laughs)” as she often refuses to eat the food prepared for her. Similarly, Yara noticed that surplus started to increase as her family grew: “before I had my daughter, the waste was very, very small. It has increased slightly because of my daughter”. For these young mothers, surplus is an inevitable part of efforts to feed their toddlers. Hanan too mentioned her attempts to feed her three-year-old son. She first pointed out that, unlike her mother, she tries to have no surplus after lunch. Hanan's mother, as her daughter explained, cooks large amounts of food and several dishes so each of her children eats what they want and as much as they want. When Hanan was asked how her household is different from that of her mother's, she described her efforts to limit surplus but she recently has started to prepare a different meal for her son “because he doesn't eat well, I try to prepare for him what he might eat. But he doesn't eat and the food stays uneaten”. The daughter, Hanan, seems to follow in her mother's footsteps in that worries about her child's wellbeing are winning over those about surplus.

As children grow old enough to eat main meals with their families, providing cooked meals becomes an ingrained part of mothers' role as providers. For example, Aljazi (40s) only comes home from work after lunchtime so cooks “large”, “heavy” dinners to “compensate” her children for not cooking them fresh lunches – keeping the leftovers in the fridge for them to eat the next day:

“Even my husband always says ‘make extra dinner so when your children come home, they find something to eat’. This is my way; whoever wants to eat, can

eat and whoever doesn't want to eat, doesn't have to eat. It is ok. It is enough for whoever wants to eat".

As a mother, she is expected by her husband to keep her children well-fed. Keeping a meal in the fridge is done with the purpose of fulfilling such a role. Whether it is eaten or not is not as important as having such food "for whoever wants to eat", until she comes back from work. The extra dinner routinely produced helps to contain Aljazi's worries about not fulfilling her duty of providing cooked food readily available for her family.

Mothers of young children mentioned that the main reason for having mealtime surpluses is the children's unpredictable appetite. For example, Taghreed (30s) prepares lunch while her children are at school but they sometimes do not eat it because they had a snack at school or do not want what is cooked for them. Ghada (30s) and Hasnaa (30s) come back from work after lunchtime so prepare lunch for their children the night before and leave it in the fridge. The children sometimes do not eat that food. These mothers feel they cannot leave their children without a home-cooked lunch even though that lunch might not be all eaten. Therefore, when preparing food, concerns about children's wellbeing and fulfilling their role as providers occupy mothers rather than those about being left with a surplus

The stories of these mothers illustrate how surplus starts to rise with the presence of children in the family. Their arrival marks a major shift in women's roles and feeding them becomes deeply ingrained in a mother's identity as the primary food provider. The role of feeding in expressing a mother's identity and its association with the

generation of surplus food and food waste are well-documented in the food waste literature (e.g. Porpino et al., 2016; Urrutia et al, 2019). Porpino's et al, (2016) US-based study suggests that mothers show affection to their children by preparing a healthy meal along with a less healthy option that the children prefer. The study refers to this as the 'compensation effect' which often leads to the generation of surplus and potentially food waste. In this study, mothers often provide the healthier option first, knowing that their young children might refuse it. The food waste literature mention such factors of children's unpredictable appetite and highly selective eating as reasons for food waste (Dobernig and Schanes, 2019; Hebrok and Heidenstrøm, 2019). Such unpredictability makes aligning food preparation with children's preferences challenging, leading to surplus.

2.3.3 Nurturing the bond with adult children

This section explores how mothers' desire to keep and nurture the bond with their adult children is expressed and the implications of that on the creation of surplus food.

Mothers of adult children reported having surplus mainly because of their children's erratic, busy lives and/or overprovisioning. This research suggests that as children become adults and less dependent on their mothers as the primary food providers, home-cooked meals become less about wellbeing and more about maintaining social bonds of connectedness. In Saudi Arabia, most children live with their parents until they get married. Before then, as children grow and have their own commitments outside the home, their routines drift away from that of the rest of the family and they do not always show up for lunch. However, for their mothers, the main meal of lunch

is an opportunity to nurture the social bond between them and their adult children, so they cook large amounts of food for the children.

Mothers of adult children in this study start cooking at a certain time so lunch is ready for the husband and children. While they are cooking, the adult children are often working or studying outside the home, so the opportunity for them to socialize with their peers and eat outside the home occasionally arises, hence missing lunch at the home. In Suaad's (40s) household, most surplus happens when one of her three adult sons goes out with friends after university and misses their home-cooked lunch. Fariydah (50s) ends up with a large surplus when one of her four adult children is busy and misses lunch with the family. These mothers could choose only to cook for their partners and younger children so as to be less affected by the erratic schedule of their adult children; however, they worry that their children would be disappointed were they to come home to eat and find no lunch. Hanan's account of her mother sheds light on these worries. While comparing her household to her mother's, Hanan pointed out that there is often a great deal of surplus lunch in her mother's adults-only home:

"Do you know what my family problem is? Their problem is that no one is guaranteed (to have lunch). For example, my mother makes lunch; my brothers might come and sleep and my sisters might already have eaten [...] So the food stays as it is"

Hanan added that her mother prefers to make lunch, in case the children want to eat, "rather than them coming and not finding any lunch". Therefore, when preparing

meals, concerns about adult children not finding lunch override those about being left with a surplus. Furthermore, the mothers' keenness to prepare lunch is related to nurturing the social bond of connectedness between them and their independent children.

For example, Rana mentioned that her mother started to cook large amounts of lunch when her sons, now in their 20s, became older. She added that her mother always worries about the sons wanting to eat more so any surplus lunch is kept in the fridge for them. This rarely happens as the sons spend much of their spare time outside the home with friends. On the days when the mother fasts and takes a break from cooking, most of the family eat leftovers but the sons prefer fresh food and so go out to eat. Preparing a home-cooked lunch allows Rana's mother to take care of and bond with her independent, adult sons who spend most of their time outside the home, apart from lunchtime.

In this study, overprovisioning is more prevalent in households with adult children. This is related to the manners of considerate eating in which family members stop eating to leave food for others. For example, Modhi (40s) had a domestic helper who used to adjust the amount she cooked for lunch in order to reduce overprovisioning. The family ate only some of the lunch because each one of them thought that the rest wanted to eat more:

“I left the dinner table hungry and said 'You finish the food' and my children left hungry so that their father could finish the food but their father also left hungry (laughs) [...] so eventually there were leftovers”

The domestic helper thought the family did not finish lunch because they were full and so she made less food the next day until the mother started to notice that and told her to make more food. This manner of considerate eating is common among adults and learned through socialization. As young children start to participate in daily meals, they are taught the manners of eating. For example, Faouzia (40s) used to correct her children when they ate fast: "I always say 'hmmm the food won't fly'"; and she felt that now they started to consider each other when eating. At this stage, the mothers' concerns seem to shift from worrying about their children not eating well (as explained in section 2.3.2) to not having enough food for them to eat (as Rana's and Modhi's stories illustrate). Therefore, food overprovisioning relieves mothers from the guilt that comes from underserving and not fulfilling their roles as providers.

Previous studies that pointed to food overprovisioning as a main reason for food waste and surplus generation do not often associate it with certain stages of family life (e.g. Graham-Rowe et al, 2014). In this study, while mothers of younger children (section 2.3.2) reported having no surplus when everyone eats as expected, mothers of adult children reported having surplus mainly because of overprovisioning, which can be explained by their desire to connect with their children and by the manners of considerate eating.

Given the increasing numbers of adult children living with their parents in countries like Australia (Vassallo et al, 2009) and the UK (Statista, 2020), not much attention has been paid to studying the parent-child relationship (Vassallo et al, 2009) and how food and meals are organized in these households. Studies conducted in the UK (Carrigan et al, 2006) and Lebanon (Chammas and Yehya, 2019) point out that it can be difficult

for families with older children to eat together because they tend to pursue their external activities. These findings suggest that adult children are likely to miss meals at home; a factor that can lead to the generation of surplus food, as this section shows.

2.3.4 Enacting mothering in later life

At later stages of family life, food provisioning becomes not only a way for mothers to express care and affection but also to feel that they are still being mothers. This research suggests that when adult children leave home to establish nuclear families, maternal care and affection are expressed through the provisioning of weekly family feasts. Mothers want to be part of their children's lives and cooking becomes a means by which they attempt to do this. It is a source of pleasure and allows them, if only temporarily, to be providers and nurturers, roles that they have been performing for years. Surplus, as such, arises as a result of mothers' good intention of ensuring that every child and grandchild has their share of their mother's home-cooked meal.

For example, Hayla (50s) enjoys her offspring's weekly visits and prepares several lunch dishes that suit every taste. She has surplus only on Fridays, when her family gather, because they do not all show up at the same time; each daughter comes at a different time and some of them have already eaten. She, nevertheless, prepares enough lunch for all her family, knowing that there is likely to be surplus. Preparing a home-cooked meal provides a medium through which Hayla performs mothering and expresses affection toward her married children. She described how her children love to eat "their mother's food" and so she makes sure that there is enough lunch for everyone just in case they all wanted to eat.

The example of Hayla illustrates that creating a meal is deeply rooted in mothers' identity as nurturers that take care of their children throughout the children's life course. If there is no one to cook for, cooking loses its value for identity maintenance and is no longer perceived as worthwhile. Muneera, a grandmother in her 60s, confessed that it does not seem worth spending time over meals preparation just for herself:

“Now the family have shrunk there is no one except me [...] I don't cook unless someone with me. I don't have an appetite when I'm alone”

If no one will eat with her, Muneera eats "anything" that requires minimal preparation – such as cornflakes. A home-cooked meal is only made when her married children and grandchildren visit on weekends; her “home becomes alive” and she happily cooks for them.

While Muneera only cooks when her family visits, Ashjan's mother cooks lunch and sends it to her married daughter's house, as Ashjan pointed out. The mother "feels upset" because she has no one to cook for at her home:

“my eldest brother doesn't eat that much. [...] And we have two teenagers; one eats lunch outside the home [...] and the youngest orders takeaways [...] or says, for example, 'I don't fancy rice, I want eggs... I want cheese or halloumi' [...] So she feels upset [...]. She tells me 'So I won't make lunch then! [...] I will make your lunch. Ashjan, don't make lunch tomorrow' [...] She wants to live the feeling that she still makes lunch. She wants that feeling”

As a caregiver and nurturer, providing home-cooked meals seems to be an embedded part of Ashjan's mother identity; it is a way to enact mothering at a distance and still be part of her child's life. In addition, the mother seems to get "that feeling" of being a provider only when providing large amounts of cooked food so Ashjan always ends up with surplus because the mother "feels that we don't eat well".

The purpose of cooking at later stages of family life extends beyond duty; it is a way for mothers to enact motherhood and pour their care into creating a feast, and so ensuring that everyone has a generous share of their mother's food. A Lebanese study has also found that mothers cook large amounts of food during family gatherings (Chammas and Yehya, 2019). This study adds depth to such insight by illustrating the underlying reasons for such overprovisioning and the deep connection between food provisioning and motherhood. This connection is explored in a study that draws on data from England, Northern Ireland, and the US (Hogg et al, 2004). The study discusses how mothers miss the feeling of being needed and simple acts of mothering such as cooking when their children leave home. As such, children's visits to home become opportunities to recreate the mothering role. Mothers in that study found new ways of mothering by, for example, making phone calls and care packages. In this study, in which the focus is on everyday meals, mothers connect with their children that have left home by creating a feast during family gatherings and sending food to their children. These ways of enacting motherhood often involve the creation of surplus.

2.4. Concluding discussion

This paper provides a fine-grained analysis of the ways in which the enactment of the good provider identity varies across the family life cycle; this reveals different underlying reasons for surplus food generation at the household level. Two points can be drawn out from such an analysis.

Firstly, the analysis presented in this paper provides insight into how surplus generation can be necessary for the competent enactment of the good provider identity. The outcome of such an enactment cannot be taken as evidence of a lack of concerns about surplus food and food waste; rather, such concerns are sometimes outweighed by the social and emotional costs of identity damage that are associated with lower surpluses. Therefore, food overprovisioning and surplus generation, and eventually food waste, are not a result of "negligence", as FAO's definition of food waste suggests (see section 2.1.1); rather, the provisioning of surplus is an appropriate mode of expressing care towards family (Evans, 2014). Considering that, public messages that encourage mothers to reduce surplus food will only be effective if they consider how food provisioning is deeply rooted in mothers' identities as nurturers and caregivers.

A **second** point to draw from this paper is about the ways in which disruptions to meal plans influence surplus generation. Such disruptions are likely to occur more often in some stages of family life. The paper shows that adult children living in their families' homes have a less structured lifestyle which seems to continue after they get married and until they have school-age children. Such a flexible lifestyle can disrupt meal plans.

These findings take us a step closer to understanding the inconsistent findings of previous studies regarding the connection between food planning and food waste. Several quantitative studies found a significant association between these two factors (Bravi et al, 2020; Diaz-Ruiz et al, 2018; Quested et al, 2013; Stefan et al, 2013), but others (Stancu et al., 2016; Visschers et al., 2016) found such a relationship insignificant. The insights from this study can be helpful to clarify such inconsistencies by pointing to the stages of family life in which putting meal plans into action might not be always possible. This echoes Hebrok's and Boks (2017) and Nikolaus's et al (2018) remarks about how food planning is more difficult at some stages of life than at others.

In addition to the stages of family life, the time lag between planning and consumption is another factor that shows how disruptions to meal plans influence surplus generation. In situations where the time lag between cooking and serving is short, such as in breakfast or dinner, mothers in this study reported ending up with a much lower amount of surplus food because the family are already at home so they can align the prepared food to their preferences. In such situations, disruptions (in terms of changing in appetite or someone not showing up) are less likely to happen. Lunch, however, unlike breakfast or dinner, is often prepared well before lunchtime when other family members are likely to be outside the home; as a result, the consumption of cooked meals is more likely to be disrupted. These insights - which show how the time lag between preparation and consumption leads to surplus - contribute to the previous literature that suggests that food waste can be less when the time between buying and preparation is short (Chammas and Yehya, 2020).

Given these insights, public messages need to consider the provider's ability to execute meal plans when encouraging people to do more food planning. This study shows how the stages of family life and the organization of everyday meals influence food planning and so the generation of surplus. Further research is needed to inform practitioners about how different levels of flexibility in meal plans might affect surplus and food waste generation. Such research can build on the insights from this paper by investigating the stages of family life at which putting plans into action can be subject to more disruptions.

In conclusion, this paper has answered calls to enrich the scarce food waste literature in Arab countries (Abiad and Meho, 2018; El Bilali and Hassen, 2020). It also has responded to the call (Evans, 2014) to study each step of the journey of food to waste in its own right. While some surplus food might end up being wasted, the reasons for surplus generation are different from those related to categorizing surplus as unwanted and then discarding it. This paper focused on the surplus generation stage. The following stages, the categorization of surplus food as unwanted and the trajectories of unwanted food, are addressed in the next empirical chapters.

Chapter 3: How and why mealtime surpluses become unwanted: A step in the journey to food waste*

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Abstract

This paper explores how and why Saudi householders designate mealtime leftovers as unwanted, thereby making them more likely to become waste. The paper argues that although overprovisioning is cited as one of the main antecedents for food waste, food becomes unwanted before it becomes waste and the designation of over-provisioned food as unwanted is an important but neglected driver of food waste. The study draws on in-depth interviews with 28 Saudi women to reveal four main reasons for the classification of leftovers as unwanted. **First**, food touched by others, such as plate leftovers, is perceived as unclean because it fosters feelings of disgust. The causes of this disgust are related to changes in social norms of eating. **Second**, clean leftovers are seen as less desirable for hedonistic reasons because they do not provide the same sensory eating experience as fresh food. **Third**, the rejection of leftovers might be related to the implications of rising levels of affluence for the attractiveness of leftovers. **Lastly**, food becomes unwanted as a result of social norms regarding eating home-cooked food outside the home. This highlights the possible influence of norms on the wider issue of food waste. These findings illustrate the circumstances in which food is categorized as unwanted and underline the significance of social and hedonistic factors. Such findings help us to better tackle the issue of food waste by providing in-depth insights into an important part of the journey between overprovisioning and food waste. The findings also strengthen the scarce literature on food waste in Arabic and other Islamic countries and highlight underlying normative and cultural aspects in such countries that are relevant to the issue of household food waste.

3.1 Introduction

This paper explores the journey of meal leftovers in Saudi households and asks how they end up becoming unwanted. Although the rejection of surplus food is one of the main antecedents of food waste behavior (Clark and Manning, 2018; Porpino et al, 2016; Quested et al, 2013; Romani et al, 2018; Schmidt and Matthies, 2018; Stancu et al, 2016), the food waste literature rarely pays much attention to the creation of surplus, treating it, rather, as just one part of the overall process of provisioning, storage and meal preparation (Andrews et al, 2018).

The seminal work on the creation of surplus food is Evans' (2011; 2012; 2014) UK ethnographic study into how and why households end up wasting food. Evans (2014) provides "a theoretical sketch" that explores the journey of food to waste. Relevant to this paper is Evans' remark regarding "the gap in disposal" in which he unpacks the process through which surplus food crosses the line to become waste. He points out that surplus food is rarely disposed of immediately. It enters *a gap* where ambiguities and anxieties surrounding its residual value render that food neither useful nor useless. The food is surplus to the immediate need, but still has potential value because it is edible. Most surplus that enters the disposal gap is first stored but not eaten within the timeframe required. As such, "the gap can be viewed as something that extends the process of ridding" (Evans, 2014: 54) and reduces anxieties about food waste (Evans, 2012), but without necessarily reducing waste.

Postponing the act of discarding leftovers until they become inedible is a key driver of food waste (Blichfeldt et al, 2015; Heidenstrøm and Hebrok, 2021). While leftovers are

sometimes stored with the intention of consuming them later (Cappellini and Parsons, 2012), the possibility of using leftovers decreases over the course of their short lifespan (Evans, 2014). This can be illustrated by examining how people handle leftovers. Previous research suggests that the value of leftovers is often ambiguous because they are not as desirable as fresh food (Blichfeldt et al, 2015; Evans, 2014; Waitt and Phillips, 2016). As such, the disposal of leftovers is often enacted via a two-stage process of storing then binning. After finishing a meal, surplus is stored in order to open up the possibility of later consumption. However, it usually deteriorates before it can be eaten, so is binned for reasons of taste and smell (Waitt and Phillips, 2016). Accordingly, procrastination over the use of leftovers is a key cause of food waste (Porpino et al, 2016; Blichfeldt et al, 2015).

The successful consumption of leftovers depends, in part, on finding future use occasions for that food (Evans, 2014; Hebrok and Heidenstrøm, 2019). This notion of classifying surplus not based on the intrinsic value of the different parts, but rather on their possible reuses and future meals plans, is also evident in Cappellini (2009) and Cappellini and Parsons' (2012) papers on meal leftovers. However, as pointed out by other authors (Andrews et al, 2018; Cappellini and Parsons, 2012; Evans, 2014; Romani et al, 2018; Watson and Meah, 2013), plans to eat or use surplus food in the future can be confounded by unexpected events.

Other sets of factors that prevent food from becoming unwanted are thriftiness, household economics, and a sense of responsibility (Graham-Rowe et al, 2014; Watson and Meah, 2013). Motivations to minimize waste by consuming surpluses

seem to be rooted in the desire to save money (Lazell, 2016). Cappellini and Parsons (2012) point out that eating leftovers is seen as a thrift act, in terms of saving time and work in the kitchen and freeing up resources for future consumption. However, eating leftovers is a sacrifice that not every member of the family is willing to take; mothers often oblige themselves to eat leftovers so other family members can enjoy fresh food (Cappellini, 2009).

The relative unattractiveness of leftovers is one of the main reasons they become waste (Clark and Manning 2018; Porpino et al, 2016; Romani et al, 2018). With the exception of particularly "flavoursome leftovers" (Andrews et al, 2018) such as special food prepared for guests (Southerton and Yates, 2014), leftovers are often seen as less tasty than fresh food and, having appeared in a previous meal, as having lost their novelty (Cappellini, 2009). Surplus is also rejected because of the perceived health risks associated with eating food that is not fresh (Andrews et al, 2018; Farr-Wharton et al, 2014; Hebrok and Heidenstrøm, 2019; Soma, 2017) and because the "multiplicity of choices" available in some countries makes the consumption of leftovers less necessary (Porpino et al, 2016).

Although the reasons uncovered in the above studies help explain how surplus becomes waste, they do not explain how food becomes unwanted in the first instance. It is important to note that our term "unwanted" is different in important regards to Evans' term, 'excess'. In Evans's study (2014: 65), excess "cannot be imagined as useful or valuable" and "the slip from surplus to excess marks the point at which food is no longer food"; as such, excess often ends up in the bin. In the present study, unwanted

food refers to any surplus that families do not want to eat but consider valuable and not to be wasted. As this implies, food becomes unwanted before it becomes excess or waste. As suggested by the data collected in this study, unwanted food does not necessarily end up being wasted; in Saudi at least, households try to deploy its remaining value in a manner that respects the religious teaching of Islam.

The guidance of Islam states that Muslims should live their life in moderation and prohibits waste in every aspect of their life. References to the “waste” and English-language synonyms occur up to 50 times in translations of the Holy Qur'an (Yoreh and Scharper, 2020). Muslim participants in Soma's (2016; 2017) study of food waste in Indonesia used the Quaranic term *mubazir* to relate to the sinful act of being wasteful. Another Quaranic term, *musrifūn*, refers to those who waste by extravagance:

"eat and drink, but waste not by extravagance, certainly He (Allāh) likes not AlMusrifūn" [The Noble Qur'an, Sūrat Al-An'ām, verse 31]

The former term (*musrifūn*) refers to waste in general, while the latter (*mubazir*) refers to the waste of money. In general, Muslims tend to use both terms to refer to waste and excessiveness (Yoreh and Scharper, 2020). In Islam, food is considered a blessing and a gift from God, so to waste food is a sin and act of ingratitude:

"Eat of the provision of your Lord, and be grateful to Him" [The Noble Qur'an, Sūrat Saba', verse 15]

Although the prohibition of wastefulness and excessive consumption is clear in the Holy Qur'an and Sunna (Prophet Muhammed's way of life, sayings and actions), a large amount of unwanted food and waste is generated in Islamic countries (COMCEC,

2017; Soma 2016; Soma; 2017; Yoreh and Scharper, 2020) including Saudi Arabia (COMCEC, 2017). The Saudi Grains Organization (2019) conducted a major study to establish a national food waste and loss baseline across the supply chain. The study reveals that about 19% of food purchased by households is wasted each year; this equates to 2.3 million tons of food – 105 kilograms of food per person.

Taking inspiration from previous studies, this paper seeks to contribute to the current food waste literature by focusing on how and why mealtime surpluses become unwanted in Saudi households. In doing so, we have chosen to focus exclusively on lunch, which in Saudi is the main meal of the day. In the UK, 33% of all domestic food waste is generated at the main evening meal (WRAP, 2014) and in Saudi, the fact that one-third of purchased rice is wasted (Saudi Grains Organization, 2019) suggests that lunch, the main meal at which rice is consumed, is a significant source of waste here as well. Lunch is usually the only home-cooked meal that all members of Saudi families are expected to attend; it is the meal that requires most planning and preparation; it is the meal for which the bulk of groceries are bought, and, as pointed out by interviewees, it is the meal from which most surplus is generated. Furthermore, lunch is the only meal that is prepared almost every day in Saudi homes; that is served at a fixed time, and for which a certain set of dishes are prepared. The study of such a mundane and routinized meal is a good opportunity to reveal (ir)regularities, patterns, and taken-for-granted norms.

This paper aims to help ascertain the relevance to the global debate of cultural contexts outside of the Western World. The paper draws on fieldwork conducted in Saudi Arabia, an Arab and Islamic country. Apart from Soma's (2017) study of

Indonesia, most previous research was conducted within a western cultural context. Little previous research has been conducted in Arab and/or Islamic countries and what research there is has often limited itself to the identification of attitudes, determinants and behaviors associated with food waste – such as poor planning and overprovisioning (e.g. Abdelradi, 2018; COMCEC, 2017; Mattar et al, 2018; Saudi Grains Organization, 2019). Whilst such studies added to the understanding of food waste behavior in Arab, Islamic areas, they do not address what happens in the stage between 'surplus' and 'waste' and how surplus is handled and rejected at the household level.

In addition, many existing studies present food waste as primarily a matter of individual action. We argue that approaches that focus on individuals as a unit of analysis underestimate the extent to which food consumption is embedded in social practices. As such, the inquiry into surplus generation in Saudi households is informed by social practice approaches: we examine the handling of surplus as a social rather than individual phenomenon. A practice-based approach enables the analyst to examine individual behaviors within the social contexts that shape them (Delormier et al, 2009). Such an approach is consistent with the view that although practices are social, individuals retain some freedom in how they perform them (Schatzki 1996; Warde, 2005). In our study of how surplus becomes (un)wanted, we look at how people categorize surplus food within the context in which food practices are located.

This paper examines two types of surplus: food that is left on individual plates and food that is cooked but not served. This distinction will uncover how perceptions of

cleanness and edibility, and feelings of disgust, impact the handling of surplus food and the classification of food as unwanted. In the food waste literature, there is limited mention of plate leftovers and how that food is assessed and handled. However, in the UK around 1 million tons of plate leftovers – worth £3.3 billion – are wasted, making plate leftovers one of the main sources of domestic food waste (Wrap, 2008). In Saudi, a 2017 survey study estimated that 13% of food wasted in homes comes from plate leftovers (COMCEC, 2017). Accordingly, it is important to understand when and why plate leftovers become unwanted. In regard to the second type of surplus discussed in this paper, food that is cooked but not served, previous research has revealed how this form of surplus becomes waste as a result of the complex rhythms of everyday life and because of the two-stage process of food-handling mentioned earlier. Whilst the findings of such research are important, they do not address two of the questions tackled in this paper: how disgust sensitivity (section 3.3.1.) and seeking sensory eating experience (section 3.3.2.) influence whether surplus food becomes unwanted. This paper also addresses the influence of societal affluence and the availability of fresher alternatives on the attractiveness of leftovers (section 3.3.3.) Lastly, the paper highlights how useful surplus might become unwanted because of social norms that discourage eating leftovers outside the home (section 3.3.4.)

3.2 Methodology

This paper reports one set of findings from a study that used qualitative methods to explore the journey of unwanted food in Saudi households. In Saudi, women usually

handle most food-related tasks such as cooking and the management of surplus, with men helping with shopping and taking out unwanted food. Hence, all participants were females who were at least partially responsible for food in their households.

A snowballing strategy was used as a means of establishing the trust necessary for the recruitment of these females, because this is a suitable method for gaining access to a population that is generally so reluctant to participate in research (Magnusson and Marecek, 2015) and it would have been impossible for the author to recruit householders without first being introduced by someone they know. Recruitment involved asking friends and acquaintances to send the research invitation letter to people they know. The author then was contacted by women who were interested in being interviewed and with whom she has no prior relationship. At the end of each interview, participants were given an invitation letter that they were asked to send to others who might be interested in participating in the research.

A total of 28 interviews were conducted between July 2018 and January 2019 in Riyadh, the capital of Saudi Arabia. Interviews lasted between half an hour and two hours and for 70 minutes on average. The interviews covered a range of topics related to food management at home and the food cycle from shopping to ridding – with a particular focus on mealtimes. A *responsive interviewing* style (Rubin and Rubin, 2012) was adopted as it was critical to establish trust by creating an atmosphere that was relaxed and friendly. Responsive interviewing is a style of qualitative in-depth interviewing that treats the interviewee more as a partner than as a subject of research. It emphasizes the importance of building a relationship that is based on trust – for example, by reacting to what interviewees say and revealing the interviewer's

emotions. This approach "will usually elicit better answers" than more neutral questioning (Rubin and Rubin, 2012: 165). As in all good quality interviewing, questions were kept open and it was made clear to interviewees that there were no expected answers, right answers or wrong answers. Responsive interviewing is adaptive and acknowledges each participant's unique experience; as such, although each interview covered the same topics, follow-up questions and probes were devised during the interview.

To analyze the interviews, thematic analysis was applied (Braun and Clarke, 2013); a systematic, six-stage process of analysis aimed to identify themes and patterns of meaning across the data. This method was chosen because it enables the analyst to go beyond the semantic content of the data and identify underlying ideas and assumptions (Braun and Clarke, 2006) – thereby addressing the research aim of identifying underlying factors and meanings. The initial phase of the analysis involved multiple readings of the verbatim transcripts. These were then coded comprehensively, looking for chunks of data that were relevant to the research questions. This was followed by a search for patterns, variabilities and consistencies across the data set in an iterative process that took the analyst back and forth between transcripts, codes, and patterns. Themes then were identified at the manifest and latent levels. At this stage, the literature was revisited to inform the final version of the analysis and the themes were reviewed to ensure they were grounded in the data and told a coherent story. The study was granted ethical approval by the Kingston University Research Ethics Committee. All participants signed informed consent forms.

3.2.1. Participants

All participants were female and lived in Riyadh, the capital of Saudi Arabia. All were Saudi

Table 3.1: Profile of participants								
Age	20s	30s	40s	50s	60s			
	8	11	6	2	1			
Household number	2	3	4	5	6	7	8	9
	2	6	8	2	4	2	1	3
Employment								
Work full day							8	
Work half day							14	

citizens. Amongst Saudi citizens, there is a fair degree of cultural and ethnic homogeneity (Metz, 1993; Nyrop, 1977), with almost all being Muslims and nearly 90% being ethnic-Arabs (IOC, 2006). The relative cultural homogeneity of the citizenry indicates a homogeneity of values that is reflected in the triple foundation of Islam, family, and tradition (Nyrop, 1977) as well as in the common mother tongue of Arabic (Al-Seghayer, 2011).

A summary of participants' profiles can be seen in Table 3.1. Of the 28 interviewees, 22 worked either full- or half-time. In the past, working hours in Saudi were shorter and most jobs ended between 1 pm and 3 pm, so lunch became established as the main meal of the day. While workers in the education sector work half days of five or six hours and finish at 1-2 p.m., those in the private sector or health sector usually work 8-hour a day that end at 4-5 p.m. These changes in working hours have affected meal timings. Our data suggest that although lunch is still the main home-cooked meal, it is only eaten after work or school has ended – even if this is as late as 7 p.m.

Households' economic situations were discussed during the interviews. Interviewees raised the topic when talking about their effort to save money and cut spending, the financial difficulties they faced, or when asserting that money was not a concern for

them. In the analysis, the analyst was interested in exploring whether households' perceived economic situation had an influence on the ways interviewees and their families handle surplus food. The data suggests that norms and preferences are more important factors than economic situations as predictors of the classification of food as unwanted (see section 3.3.3). It is important to point out, however, that our sample did not include any participants who rely on food banks or receive social benefits.

3.3 Findings and discussions

3.3.1. Inedible surplus: Cleanness boundaries and disgust

This section focuses on how interviewees classify which elements of lunch surplus are clean and which are not. Surplus that is perceived as clean is often put in the fridge whereas unclean surplus is perceived as "disgusting" and therefore as inedible and unwanted. However, these boundaries of cleanness varied among interviewees, with more surplus being classified as unclean among families whose members eat from individual plates than among those that eat from communal plates.

Eating from communal plates and the use of hands to eat were usual in Saudi prior to the discovery of oil in the 1980s. With the discovery of oil and the resulting influx of foreign workers and growth in foreign travel and foreign television, Saudis had a greater opportunity to learn about other cultures. As a result, new tastes were acquired and manners of eating started to change. The use of cutlery and individual plates began to replace eating by hand and from communal plates (Al-Othaimeen, 1991).

These changes in eating manners seem to relate to the heightening of food-related disgust observed in the data. Those interviewees that grew up using individual plates conceived of eating from someone else's plate as "disgusting" and classified food that had been touched by another person as *not natheef* (unclean) and untouched food as *natheef* (clean). In contrast, interviewees whose families continued to eat from communal plates did not use the phrase *not natheef* to describe surplus from plates and asserted an absence of disgust when sharing food with family. Falling between these two categories are families who mainly use individual plates and only eat from communal dishes when eating certain traditional meals; such families tended to classify less plate leftovers as unclean compared to the first group but more plate leftovers as unclean than the second group.

These differences are highlighted in the reports of people that grew up in families that ate from communal plates but married partners that grew up using individual plates. These differences in ways of eating and handling food surplus alerted them to feelings of disgust that they had not experienced when growing up. An example of this is Faouzia (40s- in work¹- mother of five children) who, unlike her husband, grew up in a family that only used communal plates. After a few years of marriage, she noticed that her children felt it was disgusting to eat from a communal plate. She therefore decided to serve food on a communal plate in order to teach her children to be one "united" family: "I feel we are a family, so I don't like the attitude, 'don't touch my plate'. I like

¹ The term "in work" refers to women who work outside the home for income

togetherness". As a result of this instructional practice, Faouzia's family do not have unclean plate leftovers; lunch leftovers are generally kept in the fridge and eaten later without feelings of disgust.

Qamar (20s- in work- mother of a toddler), who also grew up eating from a communal plate but married a man whose family used individual plates, recalled an awkward encounter during a visit to her in-laws:

"I had food on my plate and I did not want to throw it away because I did not know what they would do with it. So I gave it to my husband and said 'eat it' (laughs). They opened their eyes wide as if to say, 'give him from the clean food'"

Qamar felt anxious about her plate leftovers being thrown away. However, her in-laws, she explained, felt it was "disgusting" to share touched plate leftovers – even between husband and wife. Such food was seen as having been contaminated by the other person's spoon or hand, so as an unacceptable offering to another person.

The data suggests that families that only occasionally eat from communal plates have different perceptions of cleanness from those that do so regularly. When Somaya's (30s- in work- single and lives with her parents) family eat from a communal plate, food that is likely to have been touched is treated as unclean ("no one would accept it after your hand"), but food in the middle of the communal plate is considered clean and put back in the fridge. Suaad (40s- in work- mother of four children), whose family eat only the traditional *kabsah* (red rice) dish from a communal plate, does not keep any *kabsah* plate leftovers when her family eat from one plate because food that has been touched by others and mixed with side dishes "it is not the same as when you serve it". Despite eating food from communal plates, these families consider it

unacceptable and disgusting to eat food that has been touched by others while on the plate.

A third category of family provides an individual plate for each family member so they can use communal spoons to put food on their own plates and keep the rest of the food clean. Rana (20s- in work- single and lives with her parents) and Yara (20s- in work- mother of a toddler) pointed out that using individual plates makes handling surplus food straightforward: plate leftovers are automatically unwanted because they are considered unclean, messy, and unpalatable, while food in the main pots is put back in the fridge. However, the disgust sensitivity seems to depend on how food was touched and by whom. Fariydah (50s- housewife - mother and grandmother), Fatema (40s- in work, mother of six children), and Muneera (60s - mother and grandmother) put plated items of food (e.g. zucchini or pastries) back with the clean food if they are fairly certain that the items remained untouched by diners' fingers and spoons. However, they do not classify plated rice on individual plates as clean because it is difficult to assess whether it has been touched. For Nihad (40s- in work, mother of two children) and Aljazi (40s- in work- mother of seven children), whether a plate leftover is considered clean depends on who ate from that plate: Nihad does not mind eating her children's plate leftovers, but will not eat those of other relatives or strangers; Aljazi eats leftovers from the plates of her older children but not from those of the younger, messier eaters.

Few studies in the food waste literature have directly addressed the handling of different types of plate leftovers. Evans (2014) points out that, unlike food that is not

served, served food is often removed and does not enter the gap of disposal discussed earlier (Section 3.1). Andrews et al (2018) refer to such leftovers as "used or second-hand" and point out that, though they are edible, people are unwilling to eat them because they are "unappealing" and may have been "slobbered on". This study goes further and extends previous findings by contributing toward a better understanding of the underlying reasons for the rejection of plate leftovers. It highlights the cultural significance of sharing food and the role of disgust in classifying plate leftovers as clean/unclean, thereby wanted/unwanted. Such classification involves the rejection and removal of inappropriate elements that are classified as (in the terms of Douglas, 2002) *dirt*. Dirt, as Douglas (2002) argues, is matter "out of place" and by-product of a classification that defines what is dirty or clean. This section has revealed key insights into the classification of what is clean surplus and the consequent rejection of what is unclean.

This study also examines the visceral elements of surplus handling practices. Previous research highlight the role of the visceral response of disgust in the cultural classification of food as waste (Waite and Phillips, 2016; Watson and Meah, 2013). Visceral disgust can be fostered by effective experience or the physical deterioration of matter (Waite and Phillips, 2016; Watson and Meah, 2013). In both cases, disgust draws the boundaries between categories of clean and dirty. In this study, the variations in disgust sensitivity and perceived edibility of plate leftovers among the three categories of families suggest that disgust is socially learned rather than biologically based (see Blichfeldt et. al, 2015; Graham-Rowe et al, 2014; Waite and Phillips, 2016). For example, before their mother intervened, Faouzia's children had

accepted their father's view that sharing food is disgusting. Returning to the changes Saudi Arabia has witnessed, it seems that these cultural variations between the three categories could be related to the adoption of foreign manners of eating. Those interviewees who still used a communal plate, such as Qamar and Faouzia, felt that they had strong bonds with their families and so did not mind sharing food with them. Other interviewees felt that it was neither acceptable nor palatable to eat food touched by another diner. Accordingly, keeping the tradition of eating from a communal plate or adopting new manners of eating has implications for which food is considered disgusting, unclean and therefore, unwanted.

This paper argues that disgust operates as a rejection system. It is defined as "revulsion at the prospect of (oral) incorporation of an offensive object" (Rozin and Fallon, 1987: 23), where the offensive objects are "contaminants" (Rozin and Fallon, 1987) that are perceived as dangerous or dirty (Waitt and Phillips, 2016). In this study, 'the offensive objects' are conveyed by the touch of a hand or spoon and rejection is on the basis that these render food unsuitable for consumption, even if not necessarily dangerous (Andrews et al, 2018). Disgust makes people step back and draw a protective line between the self and the threat (Haidt et al, 1997) and that line functions as a rejection system to separate the edible from the inedible. However, the ways families in this study dealt with plate leftovers suggest that there is no universal, clear or fixed line of edibility (Waitt and Phillips, 2016; Watson and Meah, 2013); rather, edibility is related to cultural factors as well as biological ones (Blichfeldt et. al, 2015). The visceral response of disgust, the data suggests, is not primarily triggered by the sensory properties of food, such as smell or taste, but by ideational concerns about

who touched it (Haidt et al, 1997; Rozin and Fallon, 1987). As such, the ways in which interviewees draw the virtual line of edibility suggest that disgust is a socially constructed concept that evolves through changing patterns of socialization.

3.3.2. Edible surplus: hedonism and sensory experience

This section explores how 'clean' lunch leftovers become unwanted after they have been put away for future use. Amongst Saudis, cooked food that is kept for at least one night is known as 'bayt'. Food commonly moves from being 'bayt' to being 'unwanted' for hedonistic reasons related to *sensory experience*. In this study, sensory experience is related to two hedonistic factors: the sensory properties of food, such as taste, texture, smell and sensory variations which refer to the desire to avoid eating the same food on consecutive days.

3.3.2.1. *Sensory properties and variations*

For some interviewees, re-using and transforming bayt food is enjoyable and fulfilling if its sensory properties have not been compromised. For these interviewees, the sensory properties of taste, texture and smell are key when deciding whether to use bayt food. FariyDAH enjoys cooking and creating new dishes from bayt food: "If you open my fridge, you would see a variety of things but I use all of them". She uses chicken leftovers to make shawarma or soups and lamb leftovers to fill samosa, but does not use leftovers whose texture has changed and are perceived as no longer appetizing. In the latter cases, the pleasure from re-using bayt food is outweighed by the disadvantages of eating and serving to her family unappetizing food. A common example in the data of bayt food losing its

appeal is the traditional meals of jareesh and qurasan. Jareesh is crushed wheat mixed with yoghurt and qurasan is wheat-based bread saturated with gravy. Most often, these dishes become mushy and lose their textures and taste the day after they have been prepared, so are deemed unwanted even though they are safe to eat. As used by interviewees, the adjective 'bayt' has a negative connotation; it describes food that has lost some of its original sensory properties. For example, Hayla (50s- housewife - mother and grandmother) explained how she adds other ingredients to bayt food to transform it into a new meal that "does not taste bayt". She only keeps bayt food that can be transformed without sacrificing its sensory properties; she re-uses rice that is a few days old because it can be flavored with other ingredients, but she does not re-use meats and vegetables because they become flavorless, their smell changes and "it is obvious they are bayt". Therefore, food becomes unwanted through surplus classification practices, rather than innate material qualities (Cappellini 2009; Cappellini and Parsons, 2012; Waitt and Phillips, 2016). The ways Fariydah and Halya classify leftovers suggest, as Evans (2011) points out, that there is nothing careless about the acts of handling surplus. Before bayt food becomes unwanted, it is handled with care to assess the possibility of making it less bayt. If that is not possible, bayt food becomes unwanted and is replaced with food that interviewees enjoy cooking and serving to their families.

As well as being deemed unwanted because of loss of sensory properties, leftovers are sometimes deemed unwanted because of the desire to avoid eating the same food on consecutive days. It is considered "boring" to eat bayt food because this would be

to repeat a recent meal and the food would have lost its novelty. For example, Hanan (20s- in work- mother of two children) and Walaa (40s- housewife- mother of two children) felt they had to serve a fresh lunch every day because their husbands did not like “repetition” (Walaa) and would feel “bored” (Hanan). Similarly, Nihad argues that her family should be provided with a different meal each day because eating should be joyful. Previous studies recognize that the taste for variety in food consumption means that some people are not willing to eat the same food more than once within the timeframe that the leftovers command (Cappellini, 2009; Evans, 2011; Urrutia et al, 2019). This paper highlights the significance of food enjoyment in the unwillingness to repeat the same food on consecutive days. The Interviewees Nihad, Walaa and, Hanan argue that variety in the type of meals served is an essential determinant of food enjoyment. For this reason, bayt food usually becomes unwanted.

3.3.2.2 Between Duty and Desire

Although bayt food is perceived as less desirable, it is considered edible and so it is *haram* (forbidden) to waste it. Some interviewees communicated their dilemma over whether to maximize their families’ enjoyment by serving fresh food every day, or to perform their perceived duty as Muslims by reusing edible bayt food. Interviewees condemned the act of wasting food and described such waste as “haram”, “abhorred”, and “a sin”. As mentioned earlier, food is seen as a blessing, so to throw away food is a sin and an act of ingratitude. To escape the sin of waste, some interviewees reported passing unwanted food to their house staff or forcing themselves to eat it. For example, Nihad offers the unwanted leftovers to the house staff and if the staff do not want them, she avoids committing the sin of waste by forcing herself to eat the

leftovers. Another example that illustrates the struggle between duty and hedonism is Modhi (40s- in work- mother of five children). She described the leftovers in her fridge as lentils, liver, rice, and fish. The lentil and liver were her husband's breakfast leftovers and the rice and the fish were left over from lunch on the previous day. She complained that her children did not want any of these leftovers, as they preferred something more appetizing:

"There is no cooperation at home. No one preserves. [...] for example I told you there was a bit of rice and fish left from yesterday... 'Ok... Instead of ordering a takeaway... you have not had lunch; instead of ordering from outside, eat what is in there.' They have not eaten all day. (But my children said) 'No, no we want this'. (My daughter) wanted fried chicken [...] the boy wanted shawarma. 'No, we don't want to eat [the leftovers]'"

Modhi initially wanted to order a takeaway with her children but changed her mind when she opened the fridge and saw all the bayt foods. She threw away the lentils because they had gone bad, did not want to eat the fish and rice, and took a few bites of the liver and put it back in the fridge:

Modhi: I put the liver in the fridge. I don't know; I might throw it away today.

Interviewer: Why did you put it in the fridge?

Modhi: I felt it is a loss to throw it away: Haram; it is new. "Let me take it out." I ate a little. I ate two pieces for that not to be haram. You would say "why it is haram" (laughs) but for that not to be haram... let me take two pieces for that not to be haram and I put the rest in the fridge.

Interviewer: While you were putting it in the fridge, did you expect that it would

be eaten the next day?

Modhi: I said, "my husband might eat it in the morning. He might see it. He might feel sorry for it and eat it" (laughs). Sometimes you see the blessing in the fridge saying to you "eat me eat me" (laughs) but you don't eat it.

[...]

Modhi: I said I will eat the liver (laughs) and I won't buy fries and throw away the food that already is there. I mean at least if I throw away the leftovers that I have (after eating a few bites), I won't be sinning. I ate something.

Modhi's story exemplifies the dilemma between sin and desire. She, like her children, wanted the more appetizing option, but by forgoing that option, eating a few bites of the unwanted bayt food and only throwing some of it away, she hopes to avoid sin. In addition, by taking a few bites and placing the rest back in the fridge, she keeps open the possibility of eating that food and thereby also escapes the sin of wasting edible food. As the stories of Nihad and Modhi illustrate, the waste of unwanted food is not taken lightly; to avoid the sin and the guilt of throwing away edible food, it is sometimes eaten joylessly or placed in the fridge until no longer edible.

The idea that good food should not be wasted was reported by participants of previous food waste studies. Studies conducted in the UK (Graham-Rowe et al, 2014; Evans, 2012), Australia (Waite and Phillips, 2016), the US (Porpino et al; 2015), Denmark (Blichfeldt et. al, 2015) and, Norway (Hebrok and Heidenstrøm, 2019) reported that none of their participants viewed food waste positively or were carefree about the acts of binning. Therefore, unwanted surplus is often placed in the fridge

and enters the disposal gap until it becomes no longer edible and so the uncomfortable feeling of wasting is reduced (see Blichfeldt et al, 2015; Evans, 2014; Hebrok and Heidenstrøm, 2019). However, in this study of Saudi households, most unwanted food does not follow the trajectory noted in previous studies. The data of this study suggest that, even if the food is initially placed in the fridge, unwanted food often ends up outside the waste stream (Modhi, for example, passes most of the unwanted food to animals). Although this goes beyond the topic of this paper, it is worth pointing out that deeming food as unwanted is not an end point, but can begin a complex trajectory that ends in directing unwanted food to a variety of routes outside the waste stream. In this way, our interviewees were able, to some extent, to negotiate the tension between desire and duty. This issue will be addressed more fully in Chapter five which discusses the trajectories of food that is deemed surplus and unwanted.

3.3.3.3 (less) ordinary meals

It is instructive to compare quotidian homemade lunches to less ordinary meals such as restaurant meals and food made during the month of Ramadan. Such a comparison further illustrates the significance of sensory properties and variations in the generation of unwanted food.

Of relevance to the use of bayt food is the inter-generational difference, amongst the families in this study, in preferences for restaurant food compared to home-cooked food. The introduction and the expansion of fast food establishments and restaurants are a relatively recent phenomenon in Saudi Arabia and resulted from the oil-fueled

economic boom (Hamdan, 1990). Today, restaurants and food courts are common in Saudi high streets and malls, and ordering a takeaway is becoming easier with the availability of home delivery services. The interview data suggest that younger people have a greater taste for outside/restaurant foods than older people, who tend to prefer home-cooked meals.

Outside food seems to provide an enhanced sensory experience for younger generations. When Muneera re-heats lunch leftovers for her family, her grandchildren sometimes order a takeaway instead. Muneera explained this by saying that "youngsters [...] want combo meals (a sandwich and fries)" while she, a representative of the older generation, does not like "these stuff". Similarly, Ghada (30s- in work - mother of two children) complained that her six-year-old and thirteen-year-old children prefer fast food such as pizza or burgers over "the routine food" she cooks. What Muneera and Ghada complain about suggests a generational difference in perceptions of the sensory properties of home-cooked and outside foods. As a result, outside food is preferred over bayt food by younger people and bayt food is more likely to become unwanted.

Preference for restaurant food is also common among the young couples in our sample, who even set aside their dislike of bayt when it concerns takeaway food. Ashjan (in her 30s - work – wife) and Qamar both reported that their husbands prefer the taste of restaurant food, whether fresh or bayt, to that of home-cooked food. Ashjan explained that while her freshly cooked food might be comparable to outside food, it does not keep its taste the next day as well as outside food does.

Qamar pointed out that compared to restaurant foods, her lunch is "ok" but not "brilliant" and that when re-heated, "it is not like the fresh one that is just cooked. It is not the same quality". In Qamar and Ashjan's households, outside bayt food is eaten joyfully, but bayt home-cooked food is deemed unwanted. The taste of outside food seems to bring pleasure and joy. For example, Rana said that she loves fast food and described it as irresistible: "the day I have dinner from outside, I feel happy (laughs), like a child". Although these interviewees enjoy restaurant foods, home-cooked meals are appreciated in their households because they are healthier and more wholesome. Restaurant food, in contrast, is seen as a treat: an occasional indulgence rather than a staple. Therefore, when households bring food from outside, leftovers are highly "valued", as Ashjan mentioned, and enjoyed the following day. Outside food, as such, provides a higher sensory experience compared to home-cooked food, so any bayt from the latter is more likely to become unwanted.

Before concluding this section, it is important to explain why lunch is kept overnight to become bayt, rather than eaten later in the same day. This could be illustrated by comparing main meals in the month of Ramadan with those eaten during the rest of the year. During Ramadan, many Muslims fast from dawn until sunset and, instead of lunch, eat *iftar*, the main meal eaten after sunset. The data suggest that less surplus food becomes bayt and unwanted in the meal iftar, in comparison to lunch. This is for two main reasons. First, iftar dishes are described by interviewees as lighter than lunch dishes, and therefore as suitable to be eaten at any time of the day or night (as suggested by Zaineb: 30s- in work- single and lives with her

parents) and are suitable to be “nibble[d]” (Amani: 30s- in work- single and lives with her parents). Lunch leftovers, on the other hand, are described as heavy and are usually not eaten as a snack or late at night for dinner because “you do not fancy lunch at night” (Hanan). Therefore, food left after lunch is usually kept to the next day, by which time it is categorized as bayt and is vulnerable to becoming unwanted.

The second reason for less iftar food becoming bayt is related to food novelty. Iftar dishes are described as novel and particularly appetizing and, as such, iftar leftovers are often eaten the same day as the original meal. Qamar has less bayt food in Ramadan because she prepares “innovative” dishes that her husband loves and she rarely makes the type of “rice and pasta” dishes cooked for lunch on “typical days”. This is because “the atmosphere in Ramadan is different” and “one got used” to making new dishes. In addition, Qamar pointed out that cooking one meal for lunch fits neatly with her busy schedule but that during Ramadan she has more time to search for and make new and special recipes. As pointed out by Waitt and Phillips (2016), it is important to understand food practices within everyday household routines and rhythms. During Ramadan it is both socially normal and feasible to prepare a variety of new and appetizing dishes that enhance sensory variation and perceived sensory properties. Hence, iftar dishes are less likely to become bayt and unwanted than meals prepared outside of Ramadan.

Previous research suggests that less surplus food is usually generated by special meals than by everyday meals (Cappellini and Parsons, 2012) and that leftovers from such

occasions are more likely to be consumed (Southerton and Yates, 2014). The insights from this study support these findings by showing how surpluses from iftar and outside food are considered special, novel and tastier – and hence, as worth saving. Taste, being an important influence on waste (Andrews et al, 2018; Graham-Rowe et al, 2014; Nikolaus et al, 2018; Southerton and Yates, 2014), is one explanation for less waste resulting from special meals. This study explores generational differences in perceptions of the sensory properties of food and the implications of that for the classification of food as (un)wanted. In addition, by comparing ordinary and less ordinary meal occasions, this study helps explain when surplus is consumed the same day and when it is kept overnight to become bayt. Ordinary lunch meals are considered less exciting and hence are more likely to become bayt than special meals that are consumed less often. The study also addresses the reasons why these more appetizing and novel dishes are not served more often. Those dishes that are less likely to become unwanted are perceived as less wholesome and healthy (as with outside food) and as requiring the investment of a degree of time and effort that would disrupt the rhythms of everyday life (as with iftar). The findings illustrate the importance of moving beyond individual choices to examine food practices within the contexts in which they are located.

Overall, Section 3.3.2 contributes to the food waste literature and towards understanding the sensory dimensions of household surplus handling practices and the implication of these on the classification of surplus as (un)wanted. The findings of this study illustrate the role of sensory properties and variations in enhancing the sensory eating experience. The repetition of any experience is said to diminish the

pleasure it produces (Alba and Williams, 2013) and the sensory properties of food are enhanced if the same dish has not been served recently (Andersen and Hyldig 2015; Rolls, 1986). This suggests that sensory variation enhances the perceived sensory properties of food and offers one explanation for why bayt food is often categorized as unwanted.

3.3.2 Societal affluence and the attractiveness of leftovers

The previous section highlighted the importance of sensory properties and variations on the categorization of surplus food as (un)wanted. This section focuses on the influence of societal affluence on the generation and attractiveness of leftovers.

The discovery of oil in Saudi in the 1980s marked a rapid shift in all aspects of life: food became more affordable, and new types of food outlets, such as supermarkets and restaurants, arrived and expanded in numbers. Most Saudi citizens became more affluent and having surplus became culturally normative.

Affluence in Saudi has impacted both surplus generation and the attractiveness of leftovers. Growing up, Muneera (now in her 60s) used to have limited access to food:

"We used not to have these blessings. She (her mother) put a communal plate.

If there was meat or they put fenugreek to flavor foods; A plate of markook (a traditional dish). And we sat all together. Nothing stayed [i.e. there were no leftovers]".

In her childhood, her family made use of whatever food they had available. Now, on the other hand, she reported that her children and grandchildren often refuse to eat bayt food:

“It is a clean blessing. Nothing wrong with it [...] A blessing, thank God, but from the abundance of the blessing (her children say) ‘we don’t want re-heated food’ (in a mocking tone) [...] They don’t want bayt food because of the abundance of the blessing. But for those in need, it is like it has been just cooked”

Muneera's present family do not need to eat bayt food out of necessity, so have the luxury of enjoying takeaways or fresh food instead. This suggests that the rejection of leftovers for the hedonistic reasons mentioned earlier (section 3.3.2) might be related to prosperity.

Similarly, Yara, in her 30s, pointed out that her mother's generation want to enjoy food and are less worried about surplus than that of her grandmother:

Yara: I feel the generation – not my grandmother's generation; she was old – I mean the generation who had lived those days when the blessings entered...

Interviewer: The [economic] boom?

Yara: The boom. That generation have a problem [...] They have not experienced hunger like the generation before.

She further explained that people like her mother tend to overprovision food and do not want to be "frugal" because they consider food as a “blessing” that is to be enjoyed. Yara and Muneera's accounts suggest that the preference for abundance and the multiplicity of choices, having the option not to consume leftovers, are related to

the rise of affluence. Hanan also felt that the affluence encourages Saudi citizens to enjoy food in abundance and not worry about money:

Hanan: I consider the Saudi nation, for me, as very profligate; we don't appreciate the blessing. Although my family do not throw anything away; at the same time, I say my family do not appreciate the blessing because they make extra.

Interviewer: Tell me more about this.

Hanan: I mean, I feel that there is a little bit of profligacy with food. There is affluence. We have affluence in the Saudi society. There is great affluence. [...]

People say "it is ok, it is ok. let's just eat".

For Hanan, Saudi citizens are mainly concerned with enjoying food and not with surplus generation or being economical. However, she and Yara do not suggest a total lack of concern about food waste; as they explained, their mothers are keen on not throwing away any food, despite the routinely generated surplus in their households. Interviewees clearly expressed their concerns about food waste but it seems that these concerns are more prominent after the generation of surplus than during its generation, when the desires to enjoy food and serve attractive food are more prominent. Less variety and volume of food, by suggesting frugality, can prevent families from enjoying the blessing of food.

Another point to add is that the changes to social norms prompted by the rise in affluence also seem to impact Saudi citizens with a lesser share of that affluence. Social norms, as the data of this study suggest, are more important than economic status in the rejection of surplus food. In Saudi, eating flavourless food was once

common (as Muneera's story illustrates); today, however, it is no longer the norm to eat and serve such food – even amongst less affluent interviewees. For example, Lama's late mother used to freeze rice and serve it during the week but, as Lama pointed out, people now consider such food as inedible. She (20s- housewife- mother of a toddler) tries to follow her mother's footsteps by reusing surplus because "life is hard" financially. However, despite income constraints, she and her husband sometimes "do not fancy eating" leftovers and eat something else instead. Another example is Aljazi, who occasionally has no money to buy food but who nevertheless often throws away leftovers because her children refuse to eat them. Similarly, although Fatema's "budget is bad" and "limited", her family sometimes "do not fancy" bayt food and eventually throw it away.

The findings discussed above contribute to the literature that on food waste among those with limited income. There is no consensus on the relationship between income and food waste. While some quantitative studies found a link between these two factors (e.g. Abdelradi, 2018- Egypt; Gaiani et al, 2018- Italy), others found no statistical relationship between them (e.g. Koivupuro et al, 2012- Finland; Williams et al, 2012- Sweden). Qualitative research by Porpino et al (2015; 2016) in Brazil and the US supports the latter findings by suggesting that overprovisioning and the unwillingness to consume leftovers are the main reasons for food waste among lower-income households. This study's data indicate that, in order to make sense of the apparent contradiction of surplus generation and rejection in households with limited income, it is important to recognize the social contexts of food practices. In this study, the practices of reusing surplus are influenced by the social norms that dictate what

is acceptable to eat and serve and that are important for both affluent and less affluent interviewees.

The examples in this section illustrate the influence of societal affluence on both the generation and the attractiveness of leftovers. They show that the desire to eat and serve desirable food takes precedence over concerns about surplus generation. This demonstrates the significance of both affluence and hedonism (section 3.3.2) on the overall generation of surplus and the attractiveness of leftovers.

3.3.3 The norm of taking inside food outside

Interviewees reported that when plans for eating lunch are disrupted by the family taking their meal outside the home, the home-cooked food that had been intended for lunch is categorized as unwanted. These implications of the arrhythmic of everyday life were recognized in previous research (Andrews et al, 2018; Cappellini and Parsons, 2012; Evans, 2014; Romani et al, 2018; Watson and Meah, 2013).

One solution could be taking and consuming the home-cooked lunch to wherever the family is going. However, interviewees' comments suggest that this would be to break social norms. In comparing her previous life in an English-speaking country to her current life in Saudi Arabia, Ghada noticed that other nationalities "don't rely on restaurants" like Saudis do and instead bring cooked lunch and leftovers from home. Having first "imitated them" in this regard, on returning to Saudi she felt embarrassed about bringing home-cooked food to work, because she felt people would "criticize" this behaviour and label it as "strange". The reason, as Ghada explained, is that society

is "lazy"; people "mock" those who go to the trouble of bringing and reheating leftovers at work and assume that such efforts are unnecessary when one can order a takeaway instead. They would say: "do you have nothing to do! Oh sister, buy from a restaurant, buy".

Interviewees argued that any attempt to defy this social norm and take home-cooked lunch outside the home might have negative consequences. For example, Sharifa (30s-in work - mother of three children) used to give her son lunch leftovers to eat in his nursery but that made him feel "embarrassed" and exposed him to "bullying" when he went up to elementary school. Sharifa herself had faced bullying at work on this issue. She described how an erstwhile colleague would make negative comments every time Sharifa brought lunch leftovers from home rather than eating the usual work-fare, takeaway or sandwiches:

"It is the culture. You have to eat bread [...] for example if [her colleague] saw you eat anything wrong [she would say mockingly] 'oh here is the healthy one'."

The fear and embarrassment of being criticized or bullied can deter some people from taking lunch leftovers to eat outside the home. Even though Sharifa now feels "comfortable" about taking her home-cooked lunch to work, it is still only "tolerated" rather than fully accepted. The only food that Sharifa and Ghada feel it is culturally acceptable to bring from home to work or school is sandwiches. A possible reason could be that sandwiches do not need heating (as Ghada pointed out) and are considered a light snack rather than a lunch – which, as the data suggest, is a family meal that should be eaten at home. Although Sharifa brings leftovers to work, they are only enough to tide her over until she comes back home and cooks her family a proper

lunch. As such, food that is eaten at work seems to be typically considered a casual meal that requires minimal preparation; therefore, it is "strange" for someone to eat lunch dishes outside the home. Accordingly, considering the norm of not taking inside lunch food outside, it is less likely for leftovers to be eaten outside the home when plans for eating them are interrupted by absence from the family home. Leftovers then become *bayt* and possibly unwanted, given the hedonistic factors discussed earlier (section 3.3.2.).

While the issue of taking food outside the home might not be shared by all cultures, previous studies have highlighted the influence of other social norms on the generation of food waste. In the UK, for example, the sharing of unwanted food is limited by cultural norms around the acceptable sourcing of food (Lazell, 2016) and the perceived risk that this will open up a householders' taste in food to scrutiny (Evans, 2012). In Indonesia, the norm is for upper-income households to only gift each other food that is new, so unwanted leftovers are either given to the poor or stored and then thrown away (Soma, 2017).

3.4 Conclusion

By focusing on how mealtime surplus food becomes unwanted, this paper takes us one step closer to understanding the complex nature of household food waste. The findings extend the food waste literature in three ways. **First**, they highlight the importance of the stage in the journey that takes food from *surplus to unwanted*, and demonstrate that food becomes unwanted before it becomes excess and is wasted.

Second, in the food waste literature, most accounts of food waste attribute this phenomenon to overprovisioning. This paper argues that an often-overlooked reason for food becoming unwanted at the household level is the rejection of overprovisioned foods rather than overprovisioning itself. The circumstances in which food is rejected and deemed unwanted underline the significance of social norms and hedonistic factors. These norms and factors are related to wider societal changes and shifts in eating preferences. In Saudi, these changes impacted on: factors that provoke disgust; the desire for out-of-home food; and the availability and affordability of fresh foods. Therefore, leftovers sometimes become unwanted and are replaced by fresh food that delivers a superior sensory experience. Additionally, the social norms around taking home-cooked meals outside the home help push surplus across the line that differentiates 'useful' from 'unwanted' surplus. **Third**, the rapidity with which Saudi culture has changed since the 1980s, and the opportunity for local people to interact with other cultures, expose norms and normative changes that are less visible in more static societies.

If households' reasons for rejecting surplus are not taken into consideration, efforts to *convince* them to re-circulate and re-use surplus food are likely to be unsuccessful. We demonstrate that those wishing to encourage the consumption of surplus food and limit food waste would do well to better understand the reasons underlying householders' designation of surplus as unwanted and to acknowledge the importance of this stage of the journey taken by food in the domestic setting.

Chapter 4: Household food waste in domestic gatherings – the negotiation between social and moral duties

Abstract

This paper reports a qualitative analysis of household food waste at domestic gatherings. It reveals two main insights about how hosts negotiate the conflicting demands of their social duties to be generous and moral duties to avoid food waste. **First**, using theoretical concepts taken from Goffman, the paper shows how hosts perform their social duties by staging the dinner table in line with the prevalent hospitality norms. Such staging requires using food to manage guests' impressions of the host and avoid conflict and criticism, but this almost always results in large amounts of surplus. **Second**, while the performance of social duties requires the generation of surplus, the enactment of moral beliefs helps to divert surplus food away from waste toward charitable giving and, thence, to other forms of consumption. Participants enacted their religious beliefs by donating surplus food to others, thereby ensuring that the generation of surplus promotes charity rather than the sin of waste. Together, these two insights illustrate the social and moral purposes that surplus food serves. Surplus does not only enable people to be generous hosts but also to be charitable. Such insights provide guidance to practitioners and policymakers who design interventions to reduce food waste. Surplus food can be kept away from the waste stream by providing mechanisms for people to enact their existing moral beliefs. These insights are drawn from in-depth qualitative interviews with 28 female, Muslim Saudi citizens. The paper highlights the relevance of these insights to cultural contexts outside of Saudi. Investigating Saudi domestic gatherings,

where hospitality norms are strong, provides a fruitful context to reveal factors that are less visible in other cultures.

4.1 Introduction

This paper investigates household food waste at domestic gatherings. It reports a fine-grained qualitative analysis of why large amounts of surplus food are produced at Saudi gatherings and how such surplus is diverted away from waste toward alternative modes of consumption. Currently, a significant number of studies have dealt with issues such as attitudes and behaviors associated with food waste (e.g. Romani et al., 2018; Stancu et al., 2016), reasons for rejecting surplus food (e.g. Aleshaiwi and Harries, 2021; Evans, 2014), and the disposal of such food (e.g. Evans, 2012; Soma, 2017). However, most of these studies focus on everyday food consumption and waste and they overlook domestic hospitality in which guests are welcomed into homes and partake in food consumption.

Even when these studies mention the topic of food waste at domestic gatherings, it is treated briefly as a part of studying ordinary, everyday consumption. These studies suggest that meals served to guests at domestic gatherings are more likely to involve surplus compared to everyday meals (Aktas, et al., 2018; Southerton and Yates, 2015). The term 'domestic gatherings' covers practices as varied as hosting dinners for formal occasions or special family gatherings. Such gatherings offer the opportunity to make a good impression on guests and to demonstrate the host family's good taste and cultural knowledge (Mellor et al., 2010). As such, leftovers are excluded from the dinner table and only the best food the host family can offer is served (Cappellini, 2009). In addition, to demonstrate that they are hospitable and generous, the host

family often serve more than the guests are likely to eat (Aktas, et al., 2018; Graham-Rowe et al., 2014). Overprovisioning is also a way to avoid the fear and embarrassment of running out of food (Aktas, et al., 2018; Romani et al., 2018; Visschers et al., 2016) and feelings of guilt resulting from any failure to meet cultural norms and expectations (Graham-Rowe et al., 2014). Moreover, the desire to avoid these negative feelings and to be good providers seem to override any concerns people might have about food waste (Graham-Rowe et al., 2014; Visschers et al., 2016). Accordingly, domestic hospitality is often associated with overprovisioning and the generation of surplus food and food waste (Graham-Rowe et al., 2014; Visschers et al., 2016).

Although previous studies uncover important insights about food waste at domestic gatherings, key aspects of the topic remained under-investigated. One such aspect is the factors that inform domestic hospitality practices and the structure of the meal offered to guests. Understanding such factors will offer insights into how meals are organized and how that in turn impacts surplus food and food waste generation. In addition, little is known about how hosts negotiate their social duties to be generous and hospitable and their moral duties to avoid food waste and the implications of that on food waste. Exploring how hosts negotiate such tension will provide new insights into the potential role of moral beliefs in diverting surplus food away from the waste stream.

The overall body of literature on domestic food waste and moral beliefs is limited. Quantitative research points to a weak connection between environmental concerns and the intention to avoid food waste (Quested et al., 2013; Stancu et al., 2016) and neither do people make the link between these two factors in qualitative studies

(Evans, 2012; Watson and Meah, 2013). This is perhaps because of the belief that food waste is biodegradable and so does not have a negative environmental impact (Graham-Rowe et al., 2014). One factor that might be influential is religious belief. Studies suggest that religious beliefs are strong drivers in reducing food waste (Chammas and Yehya, 2020) and encouraging its recycling (Intahphuak et al., 2017; Pakpour et al., 2014). However, reasons for having surplus food and waste go beyond religious beliefs. A study conducted in Saudi Arabia, a majority Muslim country, points out that reasons for rejecting surplus food are related to social and hedonistic factors and the organization of everyday life (Aleshaiwi and Harries, 2021). In a domestic gathering context, it is not yet clear how people negotiate their moral beliefs to avoid waste and their social duties as hosts to be generous and hospitable.

The present paper brings to the fore the topic of food waste at domestic gatherings by unpacking the different hospitality practices people engage in while preparing the all-important guests' dinner table. It also examines the ways participants handle surplus food generated in domestic gatherings and divert it away to other forms of consumption; this reveals how hospitality norms and moral and religious beliefs are negotiated at the practice level. To do so, the paper deploys the concepts of impression management, proposed by Goffman (1959), in relation to domestic hospitality and surplus generation. Using Goffman's theatrical concepts, impression management involves staging the dinner table by using food as props to manage guests' impressions and pass personal properties (e.g. generosity) and intent (e.g. honoring guests) from the host to the guests. The concepts, as discussed further down (section 4.1.1), explain motivations behind complex human performances (Dillard et

al., 2000) and analyze surplus and food waste generation as parts of social interactions occurring between the host and the guests. This analysis of social interactions reveals the dynamic intersection of different practices, the specific social norms and expectations that hold in a particular context (Hargreaves, 2016), and their influence on the generation of surplus food and food waste.

This paper draws on data from Saudi Arabia, an Arab country in the Gulf region. In this region and nearby Arab countries, the Bedouin's values of hospitality and generosity are widely shared in the community (Halim, 1993). Domestic hospitality in these regions is strongly ritualized with high adherence to the traditional norms of hospitality (Sobh et al., 2013). Moreover, food is inextricably linked to conceptions of Arab hospitality (Stephenson and Ali, 2018). It is used as a prop to create favorable impressions, show appreciation, and avoid shame. Such token of appreciation, however, can be problematic. The norm in Arab countries is serving large amounts of food, much more than the guests could eat (Shryock, 2004), which is associated with higher surplus food and food waste (Aktas, et al., 2018).

The contribution of this paper is fourfold. First, the paper seeks to contribute to the current food waste literature by investigating how and why surplus food and waste are generated at domestic gatherings. The issue of household food waste is context-specific and so there is a need to address the lack of literature on such a topic. Second, the paper identifies the social and moral purposes that surplus serves and their relevance to cultural contexts outside of Saudi. Investigating Saudi domestic gatherings, where hospitality norms are strong, provides a fruitful context to reveal social factors that might be less visible in other cultures. Third, the paper reveals how

social duties to be a good host and moral duties to avoid food waste are negotiated by householders. Such insight provides guidance to practitioners and policymakers who design interventions to reduce food waste. Lastly, its use of Goffman's concepts adds theoretical and analytical depth to the understanding of household food waste, an area that remains under-theorized. The concepts help expose the complex nature of the social interactions involved, and of the practices and the meanings behind them. Moreover, compared to previous approaches, which often focus on practices alone, Goffman's approach provides a new lens to look at food waste-related practices as they are embedded within social interactions.

The following section (4.1.1) presents those of Goffman's theoretical concepts that are especially helpful in understanding domestic hospitality. This is followed by an overview of this paper's methodology (section 4.2). The starting point for my discussion is an effort to explain the practices that underpin the normality of having surplus at domestic gatherings (section 4.3); this reveals the underlying reasons for surplus generation at such gatherings. Section 4.4 examines the role of moral concerns and religious beliefs in connecting surplus food to different alternative modes of consumption and the importance of "preserving the blessing" by not wasting food (section 4.4). To conclude, I consider this paper's contribution to the food waste literature and discuss the practical implications of my analysis (sections 4.5).

4.1.1 Applying Goffman's theoretical concepts to domestic gatherings

The work of Goffman provides a useful lens to understand surplus generation and food waste at domestic gatherings. Using a dramaturgical perspective, Goffman (1959: 23) suggested that when individuals enter the presence of others, they put on a

performance intended "to offer their observers an impression that is idealized" and avoid making unfavorable impressions. Goffman presented several theatrical concepts to explain such social interactions in everyday life, of which this study employs five: *staging, impression management, idealization, regions, and props*. First, there is the **staging of a performance** in which a person uses various **props** to manage the audience's **impression** during social interactions. Staging domestic gatherings involves choosing the right set of props (e.g. foodstuff) to create a favorable impression about the host family's hospitality and avoid giving a bad impression that could hurt the family's reputation.

The performance of hosting domestic gatherings is undertaken in two distinct **regions**: the front stage and the backstage. The front stage is where the social interaction takes place and includes the physical elements surrounding and used in the performance. In this study, the focus is on an important physical element: the dinner table. The study examines how the host stages the dinner table and the impact of different levels of staging on the production of extra food.

When engaging with staging, people adjust their performance based on the prevailing norms as a way to create a favorable impression of themselves. The types of props are modified to fit into society's understanding and expectations, which Goffman referred to as Idealization. **Idealization** is the incorporation of the values of the society in the host's performance. This study unveils the hospitality-related norms that influence the staging of the dinner table.

The final concept is **backstage** where the host prepares for the front stage performance and where the handling of surplus food takes place. The performance backstage tends to be less formal and so often only intimates (e.g. family and close friends) are invited to such a stage; whereas, on the front stage, individuals try to present an idealized version of themselves according to their specific roles, such as being hosts. In section 4.4, the paper uncovers practices occurring backstage, where the host family handle and manage surplus food, and their implications on food waste.

The concepts discussed here reveal a new way of looking at practices that generate food waste. In this study, hospitality practices are examined in the context of social interactions occurring at the front and backstage. These practices, whose main goal is impression management, are negotiated and performed through social interactions. Studying these interactions will reveal the prevailing norms in different contexts and their impacts on surplus food and food waste generation.

Although Goffman's work suggests that social interactions such as domestic gatherings are mere performances, this is not necessarily the case as pointed out by Dillard et al. (2000) and Raffel (2013). Hosts might have mixed motives for being hospitable; they might serve a particular dish out of vanity and to impress guests but they might also be influenced by their desire to take care of their guests (Telfer, 2000). Moreover, some situations in which people interact with just anyone can be mere performances because they might not want to expose themselves fully, but people tend to behave more authentically whenever together with intimates (Raffel, 2013). This is evident in the ways participants in this study staged different social occasions,

with a high level of staging required when inviting formal guests compared to more intimate guests, as discussed further down.

4.2 Methodology

The analysis draws on 28 in-depth interviews from a study conducted to investigate the journey of food to waste in Saudi households. It reports findings specific to domestic gatherings, in which guests are invited into homes and partake in food consumption.

A snowballing sampling strategy was used for recruitment. I approached personal contacts to send invitation letters to women

Table 4.1: Profile of participants								
Age	20s	30s	40s	50s	60s			
	8	11	6	2	1			
Household number	2	3	4	5	6	7	8	9
	2	6	8	2	4	2	1	3

that might be interested in taking part in the study and used personal referrals from participants to gain additional interviewees. This process of recruitment is recommended when approaching a private population (Magnusson and Marecek, 2015) such as Saudi females. Table 4.1 shows a summary of participants' profiles.

Women in Saudi are in charge of most food-related chores, so interviews were conducted exclusively with women. All participants were Muslims and Saudi citizens. There is a relative cultural homogeneity amongst Saudi citizens (Metz, 1993), which indicates a relative homogeneity of prevalent social norms and moral beliefs.

The interviews were conducted between July 2018 and January 2019 in Riyadh, the capital of Saudi Arabia. They lasted between half an hour and two hours and for 70

minutes on average, covering a range of topics related to food management at home. The topic of domestic gatherings came later during the interviews when participants were asked to compare their everyday food-related routine to that of domestic gatherings. Follow-up questions were devised during the interviews to gain in-depth insights into how participants manage gatherings hosted in their homes. Devising additional questions during the interview is part of the responsive interviewing style (Rubin and Rubin, 2012). It is an adaptive style of qualitative in-depth interviewing that recognizes each interviewees' unique experience. Such a style of interviewing encourages thoroughness by following new leads and looking for further examples to reach detailed, in-depth explanations.

To analyze such rich data, Braun's and Clarke's (2013) approach to thematic analysis was used. This approach is useful for systematically identifying and offering insights into patterns of meaning across the data and so appropriate to address the research aim of identifying underlying factors and meanings. Verbatim transcripts were read multiple times and then coded comprehensively. The transcripts were iteratively analyzed, both individually and together. This process involved reviewing the coded data to examine similarities, variations, and patterns of meanings. I then identified themes that represent underlying factors and explain the issue of surplus food and food waste generation at domestic gatherings. At this stage, the literature was consulted to provide insights into some interesting patterns. Goffman's theoretical concepts were then incorporated to explain the overall story identified in this study. The next section reports the analysis and interpretation of the collected data.

4.3 Surplus generation: The social duties of good hosts

The analysis suggests that the social duties of good hosts are dictated by prevalent social norms that influence how hosts stage the dinner table. It suggests that hospitality practices revolve around staging a "presentable" dinner table and this often requires a *variety* of dishes that are all served in *large amounts*, with a *specific type of red meat (thebiyha)* being the star of the table. The extent to which these three norms need to be observed depends on the host's assessment of the occasion's formality. Staging then involves providing suitable food props to manage the front stage in a manner that produces the desired impressions on guests.

Hosts who stage the dinner table in line with the social norms expected for the occasion are seen as generous and hospitable. Where there is non-conformity with these norms, hosts risk making an unfavorable impression, risking their reputation and social relationships. Conformity with these norms almost always results in large amounts of surpluses that end up uneaten but the more formal the occasion is, the more staging is required and the more surplus is generated. The next subsections explore the three connected aspects of hospitality in relation to surplus generation and provide a foundation for understanding the social purposes that food and surplus food serve.

4.3.1 Thebiyha, the traditional symbol of generosity

The first element of the hospitable dinner table is *thebiya*, red meat placed on a bed of rice: this is the most renowned traditional dish served at social gatherings in Saudi Arabia. When little resources were available in Bedouin areas, meat was one of the only ways to showcase hospitality; the host slaughtered one of his own livestock to

serve a large amount of meat in the honor of the guest. This tradition has survived and red meat has held its significance. This social and symbolic significance is clear from Muneera's (60s) account of the gatherings hosted by her sons:

Muneera: They like to serve a lot of rice. They like to place a whole thebiyha on the serving plate. That is a must. A man is considered less masculine if he does not serve mufatah (whole uncut meat- a type of thebiyha). This is when strangers visit but if they are relatives, they can serve pieces of cut meat.

Interviewer: What is the difference between them and strangers?

Muneera: For strangers, this is a must; serving a full mufateh is the way to honor them [...] What is served for you (the guest) signifies how much you are honored (by the host). But if it is their cousins or relatives, it is ok (to serve pieces of meat) [...]. These are the Bedouin habits.

It becomes apparent from the conversation with Muneera that the level of staging depends on who is the invited guest, but there is always the need for large amounts of thebiyha, whether the red meat is served as one piece or cut pieces. It is considered an important symbol of generosity and a way to communicate the host's appreciation for the guests, and a way for the guests to see how much they are valued and honored by their host. Any failure to adhere to the norm of serving thebiyha will likely damage the host's reputation, as Muneera mentioned.

Another story that illustrates the significance of red meat is shared by Taghreed (30s) when she talked about a recent gathering her husband hosted. The husband invited

six guests, that have not attended one of his dinners before, and insisted on serving a full thebiyha. She thought that a full thebiyha is a very large amount of food and so suggested to her husband to serve a part of it. Restaurants and butchers in Saudi offer the option to buy a full thebiyha (e.g. one whole sheep) or a part of it (e.g. half a sheep). The husband, as Taghreed mentioned, considers the serving of anything but a full thebiyha as "shameful" because what is served signifies how much he, the host, values his guests. She then pointed out that her husband is not wasteful and only does so on formal occasions: "he does not throw the blessing away. He appreciates the blessing". I will discuss in section 4.4 how participants and their families deal with the tension between the desire to be generous hosts and to avoid food waste, but it is important to point out here that hospitality in some Arab countries, including Saudi Arabia, is strongly ritualized and hosts are expected to observe hospitality norms. Accordingly, to create a favorable impression, as hosts, Taghreed's husband and Muneera's sons try to put an idealized performance by incorporating one of the traditional symbols of hospitality, thebiyha, which is often served in large amounts, as discussed later in section 4.3.3. Adhering to such norms is more important when hosting less intimate, more formal guests. Therefore, when the occasion is formal, a high level of staging by serving a full thebiyha is a norm that the host often adheres to and that carries important messages of generosity and honor.

As the examples above illustrate, thebiyha is sometimes considered an essential element to serve at gatherings; however, it is not always the preferred option to eat. This is especially evident at gatherings held for female guests, as Hasnaa (30s) explained:

“you do not live alone; I mean serving one thebiyha is shameful so it has to be two thebiyha plates [...] but who would eat thebiyha meat! not women. And the amount that people eat nowadays is not as much as people used to eat in the past [...]. People now eat smaller amounts and also now we have to serve side dishes too: salads [...] People nowadays love salads more than the main dish (thebiyha) [...] Their consumption of rice and meat is very little; but at the same time, it is shameful not to serve thebiyha”

In recent years, hospitality practices have become more infused with modern influences. While thebiyha remains the star of the hospitable table, serving other side dishes is expected too (as discussed further in section 4.3.2). Her guests prefer modern dishes but not serving thebiyha would bring shame to Hasnaa. As Hasnaa’s case illustrates, this tension results in the latter being served but not eaten, leading to the generation of surplus.

Not only can the absence of thebiyha be a source of shame, but it can also create a rift in the relationship between the host and her guests. Taghreed shared a story of her cousin who hosted a gathering and wanted to serve dishes that were more likely to be eaten so she served burgers and kebab:

"Oh, poor her. Her face was cut off (idiom; she felt intense embarrassment and shame). (the guest's daughters said) 'is this our value? My mother had not visited you in a long time'. [...] They did not criticize her directly. They did not eat and then she heard it later from someone else”

The host considered the occasions informal, as Taghreed mentioned; such gatherings do not require high levels of staging (in the form of serving thebiyha) as formal gatherings do. However, the guests and their families saw the occasions as formal because they had not visited the hosts for a long time. As such, the guests, from Taghreed's account, found serving less formal food (e.g. burgers and grills) offensive and signaled how little they were valued and honored by their hosts. Such stories illustrate that domestic hospitality performances are risky; guests can be strong agents of gossip, potentially damaging the host's reputation. The host needs to consider the right level of staging carefully. Therefore, although Taghreed "detests" the "Bedouin" norms of serving thebiyha because such food "won't be eaten and is just a décor", she often follows such norms to avoid conflict:

"I'm forced to do so because one does not live alone. [...] you have to do things to please society, even if that does not please you [...] They would criticize you if you don't honor them in certain ways. Conflict might arise [...] So I serve thebiyha, even if this is against my conviction [...] in order to maintain my social relationships"

Serving food is loaded with symbolic value; choosing the right props communicates meanings and messages to the guests. A wrong choice can bring shame to the host family and can cause conflict. Hence, despite her preference for not serving thebiyha, Taghreed often follows the norms and serves such food to maintain her relationship with her guests. On occasions where Taghreed expects no risk of offending guests, she prefers a less elaborate staging. For example, when a close friend visited her, she served grilled burgers: "a simple set up and the food was eaten".

These examples of Taghreed illustrate how staging varies considerably depending on the social significance ascribed to the social interaction and the host-guest relationship. As Goffman (1959: 142) pointed out, "care will be great in situations where important consequences for the performer will occur as a result of his conduct". In such situations, actions can be highly symbolic and the hosts pay much attention to their performance not only to create favorable impressions but also to avoid creating unfavorable ones. Therefore, when the social stakes are perceived as high, the hosts follow social norms and seek an idealized performance by serving a full thebiyha in order to show their generosity and appreciation for the guests and avoid conflict.

4.3.2 Variety, a modern symbol of generosity

The second aspect of hospitality and staging a "presentable" dinner table is serving a variety of dishes, a relatively recent way of showing generosity. Hospitality rituals in Saudi Arabia are highly ritualized but are not fixed. New norms are emerging and starting to gradually influence hospitality practices. The data of this study suggest that hospitality rules at men's gatherings remain to a large extent traditional with thebiyha is still expected to be the star of the dinner table. Women's hospitality practices, on the other hand, are more infused with modern influences. Although thebiyha is expected to be served on many occasions, serving more than one dish seems to have become a new norm of hospitality. For example, Ghada (30s) explained that "nowadays, it is not ok to serve one type of food or one dish" and so the host needs to serve several dishes, otherwise the guests would feel that the host "did not honour them. These are the norms and habits".

As Gahda suggests, serving several dishes is becoming a new norm; which participants in this study often follow. For example, when Ashjan (30s) hosted her in-laws, she served several dishes because she "did not know their preferences well. Someone might like white soup and the other one might like red soup, meat, chicken. So I took all that into account to please all parties". Ashjan could ask her guests beforehand what they prefer to eat, but doing so might suggest that she, the host, does not want to put effort to honor her guests:

Ashjan: Sometimes one wants to serve nice things. One wants to serve everything and wants to... you know, brighten her face, as they say.

Interviewer: What do you mean by 'brighten her face'?

Ashjan: I mean I won't host a gathering and serve two dishes or three! No, I will serve, I will cook, and I will order. And my mother will help me and my sister will help me.

Hosting a gathering is a family affair; Ashjan's in-law would judge her based on what is served so to brighten her face, or present an idealized version of herself, she and her family put efforts to stage a nice, presentable dinner table. Similarly, Fariyadah (50s) considers the practice of serving several dishes as part of the host's social duty toward her guests:

"This guest prefers this dish, the other guest prefers that dish. We, as Arabs, try to satisfy our guests' preferences".

A table full of different dishes is a presentable table that brings pride to the host, FariyDAH, and makes the guests feel valued. Such a presentable table often has more food than the guests would eat, as Ashjan and FariyDAH mentioned, leading to surplus.

Before proceeding, it is important to point out that the norm of serving variety has not replaced that of serving thebiyha. FariyDAH mentioned that hospitality norms have started to change as "now there are a variety of dishes" and more people are opting for buffet-style catering; yet, serving "a large piece of red meat" makes the dinner table more "presentable". To seek a more idealized performance, some participants chose to follow both norms, as Hasnaa's story illustrates (section 4.3.1). Since her guests like side dishes more, Hasnaa serves them along thebiyha because "it is a shame not to serve" the latter. Such a level of staging in which both several dishes and thebiyha are served results in serving large amounts of food and so the generation of large amounts of surplus.

4.3.3 Overprovisioning, better safe than sorry

The third aspect of staging a hospitable performance is serving large amounts of food, much more than the guests are likely to eat. Although participants' views vary on whether to opt for the traditional meal, thebiyha or serve several dishes, or both, they all agree that a presentable dinner table should have large amounts of food.

Participants often referred to the proverb "more (food) is better than less". It represents the norms and the expected standards of hospitality; the more food is served, the more presentable the dinner table is. Serving large amounts of food is part of the hosts' social duties toward their guests so the guests can eat to their

satisfaction. Moreover, serving smaller amounts would bring "shame" to the host. Since the social stakes are high, participants prefer to serve much more than the guests would eat and sort it out later, rather than serving "just enough" (or even a little more than needed) and risking running out of food, as the following excerpts illustrate:

"My father and mother have the same habit; they honor guests by serving extra food" (Zaineb, 30s)

"I don't ever remember in my life going (to a gathering) where the food was just enough [...] it is always extra" [...] "I guess all Saudi families serve extra" [...] "We have a rule: 'to have extra and sort it out later is better than having too little' " (Ashjan, 30s)

"I cannot serve small amounts. I feel it won't be enough. I would feel nervous and embarrassed but eventually, I end up with a surplus. So I like to serve extra to avoid ending up with too little." (Nihad, 40s)

"We, as Arabs, have to be generous. No matter what the situation is, you cannot serve just enough food for the guests" [...] "there will be a surplus [...] But this is better than not having enough and the food runs out and then I feel embarrassed. I know, if God will, that I will sort out the surplus. I won't throw it away or waste it" (Fariyadah, 50s)

These excerpts illustrate the important social purposes of serving large amounts of food and so having surpluses. It is part of Saudi hospitality norms and conformity with

norms is important to pass personal properties (e.g. generosity) and intent (e.g. honoring guests) from the host to the guests, as discussed in the previous sections. Therefore, surplus is not only expected but also welcomed as it signals the hosts' generosity and relieves them from the potential embarrassment and worry of food running out before the guests are full. For example, Rana (20s) feels anxious and nervous when the amount of surplus left after gatherings her family host is not large:

"How do you know that people have eaten? [...] if there is food left on the serving plates that means the food was enough"

As such, surplus serves an important social purpose of assuring the host that guests were served well and according to the expectations and the norms of hospitality. A small amount of surplus would not assure Rana as it could mean that guests had stopped eating before being full, to leave more food for others or to avoid embarrassing the host. As such, hosting guests involves fears of not living up to the expected standards of idealized performances, and therefore surplus is created.

Accordingly, hospitality can create contradictory emotions- pride and honor but also embarrassment and fears. In order to get domestic hospitality right, participants often engage in a significant staging of the dinner table by serving large amounts of a variety of dishes along with red meat. For example, Hayla (50s) often observes these three norms because it is "nobility in front of the guest":

"We don't serve just enough food for guests; it has to be extra [...] a large thebiyha divided into two very large plates, and also jareesh and qursan (traditional dishes) and salads and desserts. And before serving all of that, the

guests are served something with the coffee. So they don't eat that much (at dinner). But all of that food has to be served at gatherings. If someone did not do so, the guests would say 'oh this is shameful' [...] Serving more than the need is a must, otherwise they would say 'the host is mean'."

Hayla's excerpt reveals both hospitality's dark (shame) and bright sides (nobility). Managing hospitality requires a knowledge of the appropriate extent of staging- in terms of variety, amounts, and serving red meat. Choosing the wrong props, such as serving grills and burgers when thebiyha is expected (see section 4.3.1), might suggest low character, a quality that attracts criticism.

Not all occasions, however, require the high level of staging Hayla mentioned. For example, when Suaad (40s) hosts close friends, the amount of surplus is often enough for her family to eat the next day but "on formal gatherings, one has to serve amounts of food that are definitely more than the need". Hayla, another example, described how she prepares for different occasions to demonstrate her knowledge of the appropriate level of staging. When her sister-in-law visits, Hayla serves a near-to-everyday dish of rice and red meat or chicken and the amount of surplus left is often small. But when the sister-in-law visited their new house for the first time, such an occasion required a more significant staging and so Hayla "brought a large plate (of rice and red meat) and made jareesh (a traditional dish) and other dishes. It was formal". As the stories of Suaad and Hayla illustrate, the extent of the occasions' formality influences both staging and surplus. Although surplus is expected in both cases, an idealized performance is more important in formal settings. Such settings

require a strong adherence to hospitality norms as a means to manage guests' impressions, make them feel welcomed, and/or avoid criticism and conflict.

Taking the stories in the previous sections together, what is served is far more important than what eventually gets consumed. Staging the dinner table to please the guests' eyes is a practice that participants in this study engage in, as Walaa (40s) explained:

"you always worry about the eyes before the stomach. The stomach will be filled; one or two bites will fill it. One won't die from hunger! But you say 'it is served for the eye'. So for the sake of the eye, the amount served, especially if there is a stranger, is triple, not twice, triple the amount that is likely to be eaten. And then the handling of surplus stage starts because the food was much more than what fills the stomach. So I only feed the eye "

As a highly symbolic item, food is an important prop and a showpiece for the eye to feast on rather than the stomach. The eyes of strangers require more to be impressed because they have not witnessed the host's hospitality performance before. This echoes Goffman's remarks mentioned earlier (section 4.1.1) about how performers pay much attention to interactions with important consequences. Moreover, people might not behave as authentically as they do when together with intimates (Raffel, 2013). Hosting less intimate, more formal guests requires a higher level of staging to present a more idealized performance and create a favorable impression.

It is important to point out that participants were aware of the consequence of seeking such idealized hospitable performance: having large amounts of surplus. To avoid

committing the sin of waste, participants' efforts are often directed toward distributing surplus food generated at their gatherings, rather than minimizing it, as discussed in the next section.

4.4 Avoiding food waste: The moral duties to preserving blessings

This section explores how participants handle surplus and avoid food waste and the moral motivations behind such avoidance. Although participants expected and indeed wanted to see surplus at the domestic gatherings they hosted, none of them were careless about food waste. Phrases like "but nothing goes to waste", are often heard from participants when speaking about surplus, followed by a detailed explanation of their efforts to "preserve the blessing" of food and ensure nothing, or as little surplus as possible, is wasted.

Preserving the blessing is a term used by participants to explain their efforts to avoid food waste. The term also appears frequently in Saudi charities' communications, as Etaam, the first food bank in Saudi, states: "our main goal is to preserve the blessing". In Islam, food is considered a blessing and a gift from God, and so Muslims are asked in the Holy Qur'an to not be wasteful:

"Eat and drink, but waste not by extravagance, certainly He (Allāh) likes not Al-Musrifūn (those who waste by extravagance)" [The Noble Qur'an, Sūrat Al-An'ām, verse 31]

Concerns about food waste become more dominant as guests leave the dining area and it becomes a backstage for sorting out surplus food. While the physical space of both the front stage and the backstage are often the same, each stage witnesses a

different performance. The front stage is where hospitality practices take place and where the presentable dinner table is staged. As such, concerns about hospitality and feelings of pride and honour dominate the front stage. At backstage, moral concerns have the main influence on the ways participants handle and separate surplus food, with one exception as illustrated further down.

After the guests leave the dining place, the process of handling surplus starts. Surplus food is separated based on who is likely to receive it. There is food that is acceptable to be shared with guests and relatives, donated to others in need, and fed to animals.

First, "clean" and "presentable" surplus is shared within the host's social circle. Food that no one touched (e.g. food left on the serving plates) is considered clean whereas food touched by others while eating (e.g. guests' plate leftovers) is deemed unclean. Clean surplus, which is considered suitable to share with others, has also to be presentable to be acceptable to share within the host's social circle because it represents the host's "image", as Walaa pointed out. Walaa explained that sharing small amounts of food left from different dishes with relatives might appear as a way to get rid of food rather than gifting, which could hurt her image. Therefore, "instead of this being seen as a nice thing", the recipient might "gossip" about her. This suggests that sharing can be an extension of hospitality performances in which impressions should be managed carefully. As such, participants shared surpluses mainly with intimate guests. This reflects Goffman's remarks that the backstage tends to be a less formal space and so often only intimates are invited to such a stage.

While sharing can be part of hospitality, donating food to others in need and feeding other living beings is seen as a charity and a moral duty motivated by religious beliefs. Donated food is a clean surplus that is left after sharing or considered unacceptable to share; whereas food given to animals is often unclean food (e.g. plate leftovers), inedible food (e.g. bones and peels), or clean surplus that no one wants. For participants, food is a blessing that they are gifted with and so their responsibility as Muslims is to "preserve the blessing" by ensuring it is eaten by themselves or others. By preserving the blessing, participants hope to avoid the sin of waste and to be rewarded in this life and the hereafter:

"I see its impact on a lot of people who are well off financially because if one is thankful for the blessing, it will last" (Saaud)

"There is a reward for serving any animate (living being)" (Hadith- Prophet Muhammad sayings) (Muneera)

"When the Doomsday comes, God will ask us about everything we ate and drank, if we were thankful to Him " (Fariydah)

These excerpts represent the three reasons participants mentioned for their efforts to preserve the blessing of food. Donating food is a way to preserve and have more of the blessings one has in this life, as Suaad pointed out. It is also considered a good deed that participants hope to be rewarded for in the hereafter. In addition, donating food is a way to avoid the sin of waste, an act that is punishable both in this life and the hereafter.

These three reasons illustrate the moral purposes that surplus food serves. By preserving the blessing of food, surplus food becomes a charity rather than a waste or a sin. Surplus food, therefore, serves key social and moral purposes of enabling people not only to be good hosts, but also to be charitable.

Despite participants' efforts and desire to avoid food waste, some surplus ends up being wasted. For example, before having pets, Taghreed used to throw away unwanted meat. Walaa and Nihad, other examples, pass clean surplus to others in need but throw away unclean leftovers because they do not have access to animals. This suggests that access is an important factor in diverting surplus food to alternative modes of consumption. Such a topic is beyond the paper's scope and is explored further in Chapter 5 which discusses the trajectories of unwanted food.

4.5 Concluding discussion and implications

This paper brings to the fore the under-investigated topic of food waste at domestic gatherings. It reveals how social duties to be a good host and moral duties to avoid food waste are negotiated at the practice level. While concerns about hospitality dominate the front stage performance of domestic gatherings, concerns about food waste are hidden backstage. Moreover, the performance of social duties requires the generation of surplus food, which the enactment of moral beliefs diverts it away from waste toward charitable giving and, thence, to other forms of consumption. As such, surplus serves social and moral purposes. In the rest of this section, I revisit the main four contributions of this paper.

The **first** main contribution of this paper is that it points to the importance of treating food waste at domestic gatherings separately from waste generated during ordinary, everyday food practices. The paper provided a fine-grained qualitative analysis of issues that are only treated briefly in previous studies. For example, unlike previous literature (e.g. Graham-Rowe et al., 2014; Visschers et al., 2016), this paper draws a distinction between the good parent and the good host identity, arguing that motivations and concerns associated with the preparation of the guests' dinner table are different from those associated with feeding the family.

Staging a presentable dinner table is part of normalized hospitality performances. It is a way to take care of guests, manage their impressions of the host, and avoid conflict. Preparing meals for the family, on the other hand, is an expression of parenthood motivated by concerns about the family's wellbeing (Evans, 2014; Watson and Meah, 2013) and the desire to connect with family members (Hogg et al., 2004 – see also Chapter 2). Although the consequences of the desire to be a good host and a good parent can be similar (i.e. ending up with surplus food), the paper argues that the underlying reasons in each case are different. This calls for a specific focus on domestic gathering as a separate case of household food waste.

The **second** contribution of this paper is to highlight the manners in which hospitality standards influence surplus food and food waste generation beyond the Saudi context. The paper revealed how hospitality norms in Saudi Arabia can lead to the generation of surplus food. Such surplus serves the key social function of demonstrating the hosts' care and hospitality and avoiding embarrassment and criticism. These insights are relevant in other cultural contexts. One such example is

Poland. Surplus food in Polish gatherings is also taken to show the host's thoughtfulness and care (Rancew-Sikora and Żadkowska, 2017). Polish hospitality is similar to that of Saudi; it is elaborate and involves serving plenty and a variety of food. This results in surplus food that is often kept on the table as an invitation for the guests to eat as much as they want. Surplus is also expected in cultures where hospitality standards are less rule-bound than in Poland and Saudi. For example, amongst the British middle-class, gatherings are more intimate (Mellor et al., 2010) and informal (Fox, 2003) but the host is nevertheless expected to serve special (Fox, 2003; Mellor et al., 2010) and large amounts of food to avoid feelings of embarrassment and anxiety (Graham-Rowe et al., 2014). As these examples illustrate, although the nature of hospitality varies across cultures, hospitality standards inform the host performance in manners that often involve the generation of surplus food and food waste.

The **third** contribution of this paper is providing insights into how people negotiate moral and social duties, which are relevant to researchers and practitioners. The paper suggests that campaigns aiming to divert food away from waste toward alternative modes of consumption will be more successful than those aiming to minimize surplus food. The reason, as this paper argues, is that these alternative modes of consumption (e.g. donating surplus food to charity and those in need) enable people to enact their moral and religious beliefs; whereas reducing surplus involves changing hospitality practices that have high cultural significance. Changing such practices is a complex and challenging task (Hargreaves, 2011). As such, it can be more successful to intervene backstage, where the host's concerns about food waste are aligned with campaigns' missions of minimizing food waste, rather than at the front stage, where entrenched

hospitality rules demand the generation of surplus food rather than its minimization. A key way of doing so is by providing mechanisms for people to enact their moral beliefs. Studies suggest that providing access to structured recycling programs enables people to enact their religious beliefs (Intahphuak et al., 2017) and environmental concerns (Derksen and Gartrell, 1993) and so increases recycling rates for different materials including food waste. Without access to appropriate physical facilities, people struggle to enact moral duties that demand the reduction of food waste. Therefore, providing contexts within which people can enact their perceived moral beliefs can be a fruitful way of diverting surplus food away from the waste stream.

The **fourth** contribution of this paper is its demonstration of the benefits of using Goffman's theoretical concepts to look at the practices that generate food waste. Compared to previous approaches, which often focus on practices alone, an approach that looks at practices as they are embedded within social interactions has the advantage of providing a holistic approach to identify different staging elements and practices occurring at the front and backstage. It explains the norms that inform them and the motivations and meanings behind them, and reveals how all these factors interact to influence surplus food and food waste generation. Future food waste research would benefit from using this approach for it generates a richer understanding of the motivations behind the complex human performances associated with household food waste.

Chapter 5: Food waste and the trajectories of unwanted food in Muslim households: the role of morality in achieving circularity within the domestic sphere

Abstract:

This paper illustrates how the domestic sphere can be a significant site in achieving circularity. It investigates a range of circular practices aimed at avoiding food waste and highlights the passage of unwanted food and food waste. The paper specifically examines the circular practices of sharing and donating food and leaving it out for animals. It draws on parts of a study that traces the passage of food into waste at the household level, in which 28 qualitative interviews were conducted with Saudi women. The paper reveals the social and moral dimensions of unwanted food disposal, casting doubts on claims that people behave in ways that are inconsistent with their moral attitudes toward food waste and that household food waste can be reduced by bridging the attitude-behavior gap. This paper argues that the ways in which people enact the disposal of unwanted food and food waste show the complex network of moralities behind engaging in different circular practices. Such an engagement enables people to enact their moral and religious beliefs; thereby, the disposal of food becomes a charity rather than a sin. Morality also influences the ways in which people dispose of food after it becomes waste, showing the moral value of food even when it is no longer suitable for any form of consumption. The paper also illustrates how normative and access barriers can hinder the engagement in circular practices, and so the enactment of moral beliefs. It argues that in order to reduce household food waste, there is a need to address both values residing within people as well as normative and access barriers.

5.1 Introduction

This paper draws on a qualitative, in-depth investigation of the ways in which Saudi families enact the disposal of food once it is deemed unwanted. It draws on parts of a study that traces the passage of food into waste, from the generation of surplus food, the rejection of surplus food, to the disposal of unwanted food. The paper provides a fresh look into how people enact their values and beliefs to direct unwanted food to different pathways and away from the waste stream and instances in which that enactment can be hindered, resulting in food wastage.

The paper aims to illustrate the significance of the domestic context as a site in the enactment of a transition toward the circular economy. It highlights the circular practices that are already under way in people's homes, the motivations behind engaging in such practices, and how insights into these practices can aid efforts to understand and minimize household food waste.

The paper makes three contributions to the food waste literature. First, it responds to calls to study the circular practices that already exist in people's homes (Mylan et al, 2016; Schanes et al, 2018). In the circular economy literature, there is a lack of studies that investigate the consumer's side of the circular economy (Mylan et al, 2016). Proponents of the circular economy aim to design closed loops of resources in order to eliminate waste by using it as a resource (Borrello et al, 2017). This involves encouraging consumers to adopt circular practices - such as sharing and composting - so their unwanted food does not end up being wasted. This paper contributes to the food waste literature by revealing how the circular practices (sharing, donation, and

feeding animals) that take place in the domestic sphere dispose of unwanted food in a manner that prevents it from being wasted.

By focusing on food-related circular practices, the paper addresses a key step in the passage of food towards waste: the disposal of food that has been deemed as both surplus and unwanted. In this, the paper addresses what Evans (2014) refers to as "the gap in disposal". Evans draws attention to the process through which surplus food becomes waste and suggests that such food first enters a gap, where ambiguities surround its remaining value. This paper studies how food becomes or does not become waste after it enters the disposal gap, uncovering the various routes through which unwanted food flows out of the home. In the food waste literature, few studies have looked at this. One of those studies is Mylan et al's (2016) UK-based study of domestic circular practices. As the authors point out, most previous studies focus on organized, collective arrangements (such as food banks and supply chains) rather than small-scale, domestic practices. They argue that the circular practices of sharing food with family and neighbors, leaving food out for wildlife, and composting already take place at homes and can be key to the transition towards the circular economy. Borrello et al, (2017) explore consumer-related circular practices in Italy. They reveal that people who believed in the benefits of a circular economy and were motivated by environmental values were willing to participate in food recycling programs regardless of the effort involved.

This paper extends previous findings by providing an in-depth overview of the range of circular practices people adopt to enact the disposal of unwanted food. In that, it looks at how people handle, classify, and then pass unwanted food to specific

alternative forms of consumption. The paper does not only explore how food is managed before it becomes waste, but also the different practices to dispose of food waste. The two aforementioned studies, Mylan et al (2016) and Borrello et al, (2017), focus mainly on the destiny of unwanted food and rarely pay attention to the ways in which people manage food after it becomes waste. This paper goes beyond that to reveal the practices people adopt to dispose of food waste in a manner that assuages their anxieties and worries around waste.

The second contribution of this paper is uncovering people's motivations to engage in domestic circular practices aimed to avoid food waste. The paper highlights how food waste avoidance is underpinned by a variety of moral beliefs and cultural norms, including those about food sharing and donations. In Saudi households involved in this study, participants tried to deploy the remaining value of unwanted food by diverting it to alternative consumption paths in a manner that respects the teaching of Islam. While previous studies (Abdelradi, 2018; Chammas and Yehya, 2020; Pakpour et al., 2014; Zamri et al, 2020) suggest that religious belief is a strong motivator for engagement in food waste reduction practices, it is not yet clear how people's moral beliefs influence the range of practices they adopt in a daily basis to manage unwanted food and its disposal.

By investigating the impact of moral beliefs, the paper reveals the complex network of moralities behind adopting circular practices aimed at reducing food waste. Such a revelation casts doubts on claims about the existence of the attitude-behavior gap, in that people behave in ways that are not consistent with their moral attitudes. This paper argues that there are deep moral dimensions in the ways people dispose of

unwanted food and food waste. These insights are a result of investigating the disposal of unwanted food, a step that has received little attention in the literature.

The third contribution of this paper is to reveal normative and access barriers to the adoption of circular practices that reduce food waste. The literature indicates that the practice of sharing unwanted food with others is culturally unacceptable in some countries (Evans, 2014; Lazell, 2016). In the UK for example, cultural norms around acceptable sourcing of food (Lazell, 2016) and concerns about exposing culinary competence to others and social respectability (Evans, 2014) are barriers to adopting surplus food sharing practices as a means of preventing food waste. This paper also goes beyond identifying the normative barriers to illustrate how people adapt to them and adopt alternative circular practices to overcome these barriers.

Another barrier to adopting circular practice is access. Borrello's et al (2017) study suggests that people's participation in food recycling and composting programs depends on how much effort is required to access them – a finding that is echoed by quantitative studies (e.g. Mondejar-Jimenez et al, 2016; Stancu et al, 2016; Visschers et al, 2016). This paper goes beyond the identification of access barriers by analyzing the interplay between access and moral beliefs: how access limits the enaction of moral beliefs and how moral beliefs motivate people to overcome access barriers to dispose of unwanted food.

The rest of the paper is organized as follows. After discussing the methodology used to collect and analyze data (section 5.2), the paper presents a two-part in-depth analysis of the data (section 5.3). The first part, Section 5.3.1, discusses the nature of

the circular practices people adopt to dispose of surplus food: sharing it with others in their social circle, donating it to people they consider to be needy, and leaving it out for animals. This section also provides insights into why such practices do not always operate consistently to dispose of unwanted food. In that, it looks at the barriers to adopting circular practices. It then discusses the ways in which participants dispose of food after it becomes waste. The second part, Section 5.3.2, looks at the motivations to adopt and use circular practices that dispose of surplus food and food waste. It reveals how the moral concept of 'preserving the blessing of food' influences participants to devote effort and time to saving food from being wasted. The last section (5.4) discusses how the insights presented in this paper can change how the issue of domestic food waste is approached and addressed.

5.2 Methodology

This paper draws on a qualitative study that investigates the passage of food in Saudi households. The study examines the generation of surplus food, the rejection of such food, and its disposal. This paper reports analyses related to the final step: the management and disposal of unwanted food and food waste.

The study was undertaken between July 2018 and January 2019 in Riyadh, the capital of Saudi Arabia. Twenty-eight female, Saudi citizens that were at least

Age	20s	30s	40s	50s	60s			
	8	11	6	2	1			
Household number	2	3	4	5	6	7	8	9
	2	6	8	2	4	2	1	3

partially responsible for food in their households were recruited for in-depth interviews using a snowballing strategy. This strategy is recommended as a means of

establishing trust and gaining access to private groups (Magnusson and Marecek, 2015; Sadler et al, 2010), such as Saudi females.

The interviews lasted between half an hour and two hours and for 70 minutes on average. They covered a range of topics about food management at home including how participants handle food after it is deemed both surplus and unwanted and before and after it becomes waste. A responsive interviewing style (Rubin and Rubin, 2012) was adopted in which follow-up questions and probes were used during interviews to capture the unique experiences of each participant. This facilitated the exploring of the various practices participants adopt to manage unwanted food, the meanings they attach to these practices, and their motivations and beliefs.

A summary of participants' profiles can be seen in Table 5.1. They were all female and Saudi citizens. The Saudi society is considered culturally and ethnically homogenous (Metz, 1992; Nyrop, 1977), with almost all Saudi citizens being Muslims (IOC, 2006). This indicates a fair degree of homogeneity of values.

To analyze the data, the reflexive thematic analysis approach proposed by Braun and Clarke (2013) was adopted. The approach encourages recursive engagement with the data to produce a robust analysis. The analysis process started with data familiarization and coding in multiple coding cycles. The circular practices identified in the data were treated as categories under which sets of codes were organized. Then codes were examined further through constant comparison where coded parts were compared across categories to develop broader patterns of meanings. The constant comparison allows grouping similar incidents together, identifying their dimensions

and properties, and relating them together (Corbin and Strauss, 2008; Glaser and Strauss, 1999; Seale, 2004). The following steps were to develop and refine the identified patterns and themes to ensure they tell a coherent story about the dataset and then to write up the analysis, which is presented in the next section.

5.3 Analysis

5.3.1 Circular practices aimed to reduce food waste

5.3.1.1 Sharing food within social circles

This section explores the practice of sharing food with people within households' social circles, revealing norms about what types of surplus food are acceptable to share and with whom. In this study, the term social circle refers to people with whom the person shares personal relationships and has social associations such as relatives, friends, and neighbors. Shared food has to be special and to appear as a carefully prepared or selected gift rather than an unwanted excess. As such, sharing is often limited to that surplus from social gatherings, as participants point out, because on these occasions, only the best food the host family can offer is served (see Chapter 4 for a detailed discussion).

Since sharing is limited to certain types of surplus food, sharing practice does not operate consistently to dispose of unwanted food. The shared surplus must be "presentable" and should not appear as an unwanted excess. For example, Walaa points out that any food she shares with relatives would represent her "image":

"I share (with relatives) large amounts of rice and red meat (that are left after gatherings) but I won't share smaller amounts! [...] if there is a little pasta, a little

soup, a little stew, or a little of this and that, I put it in containers and, if possible,
I call a needy family to take it”

The shared surplus has to appear as a presentable gift that the host has specifically selected for the recipient. Therefore, if the surplus is "not presentable", it is passed to others for whom it is a necessity rather than an indulgence (as discussed further in section 5.3.1.2). In addition, some participants hesitate to share surplus food with less intimate contacts within their social circle. Suaad, for example, shied away from sending surpluses to her neighbour until the latter had sent her some of her own surpluses. Hayla, another example, shares gathering's surplus with close guests but too is shy to offer it to "formal guests". She discussed how, in the past, guests welcomed the host's invitations to take surpluses from gatherings because they often did not have access to such a special food. Hayla added that nowadays, people have access to different types of food and no longer need to take surpluses. So she feels "shy" to offer surpluses to others when she is not sure whether they would see it as a nice gesture or as offensive.

The discussion above gives a hint as to why the practice of sharing surplus food from gatherings is acceptable, while that of sharing everyday mealtimes surpluses is not. Surpluses from family mealtimes are often deemed unwanted for reasons related to the loss of the food's sensory properties and/or to the desire to eat something different (for a detailed analysis, see Aleshaiwi and Harries, 2020). In gatherings, food is often served in large amounts so there is a common understanding that leftovers are not unwanted or rejected by the family but rather new, special food that is served in abundance. Hence, hosts are not shy about sharing such surplus food with people

from their social circles. Considering that, sharing food within the social circle does not operate consistently as a pathway to dispose of surplus food. It is culturally unacceptable to share mealtime surpluses and some types of gatherings' surpluses (as Walaa pointed out) and so participants in this study rely on other pathways to dispose of these types of food.

5.3.1.2 Donating food to others in need

This section discusses how donating food to needy others operates as a pathway through which unwanted food flows from home, and highlights the instability of such a pathway. The term 'donating' is used here, rather than sharing, because participants considered the act of passing food to those who are less well-off as a charity and good deed motivated by religious beliefs, as discussed further in section 5.3.2 which highlights the motivations behind adopting circular practices.

The data of this study suggest that more types of food can be channeled through donations to others in need, compared to sharing within the social circle. Food that is acceptable to donate includes (1) mealtime surpluses that family do not want and are seen as unacceptable to share with others within one's social circle; and (2) gatherings' surpluses that are left after sharing and/or are seen as unpresentable for sharing (e.g. small amounts of food). For it to be acceptable to donate these types of food, surpluses have to be clean, which excludes plate leftovers that are touched by the person while eating (see Chapter 3 for a detailed discussion).

Although more types of surplus food are acceptable to donate, the food needs to be an appetizing and complete meal. To keep the food appetizing, participants try to pass

it promptly before it loses its appeal. For example, Ashjan gives any lunch surpluses to her neighbor's driver on the day they become leftovers:

"food should not be left for too long as it will go bad and there is already someone (the driver) that fancies it and will eat it. Also, one intends it as alms"

As Ashjan pointed out, food is often donated the same or the next day because it is given as alms, hence needs to be in a good condition. Otherwise, the act of donating food might appear as an insincere ridding of unwanted food, as Rana pointed out:

"my father always says 'be sincere, be sincere. Don't be careless with food and say 'oh someone will take it [...] your intention should be feeding the poor' "

In Rana and her family's case, sincerity involves presenting food "in the best possible shape". Before passing food to others in need, they ensure that it is clean, heated, and in a ready-to-eat container with utensils, tissues, and a drink. In addition, when Rana's mother has only unwanted rice left, she takes some meat from her newly cooked lunch and adds it to the rice to make the meal "complete". Donating food that is not complete or not presentable, as participants explain, can suggest that the giver's motive is to get rid of food with no consideration of the recipient's needs. Such an insincere act in Islam is not rewarded in this life or the hereafter, as detailed further in section 5.3.2.

The discussion above highlights when donation can be an unsuitable pathway through which unwanted food flows from home. For example, when Ghada has incomplete surplus food left, such as rice only with no meat, she gives the surplus to birds and not

to her building keeper: "I like to give out something that is worthy". Similarly, Jameela only passes "presentable" food to her building keeper, so small amounts of leftovers that are not enough to feed one person are given to animals instead.

Another illustration of the instability of donation as a way to pass through unwanted food is access to people that will accept food donations. Zaineb explains that some low-paid workers "don't take food while others feel happy when you give them something"; as such, she has to travel far looking for someone that accepts donated food. Modhi, on the other hand, cannot travel that far, so when the nearby workers do not accept her unwanted food, she passes it to animals. Participants also pointed out that sometimes the male members of the family do not take unwanted food out to others in need. In this sample, food is handed out by male rather than female members of the family as the latter does not go out as often and as the recipients are often males and it is common for people of the same sex to deal with each other. For example, Lama donates lunch surpluses only when her husband "is willing to take it out", but otherwise she gives it to animals. Hanan, another example, mentioned that until a new female helper accepted her unwanted food, she felt that donating food was out of her control because her husband did not always take it to others in need. She added that it is much easier for her mother to donate unwanted food because her family has a male driver who is able to distribute it when Hanan's brothers fail to do so.

The discussion in this section illustrates when donation does or does not operate effectively or consistently to enact the disposal of unwanted food. Certain types of food are perceived as unsuitable for donation and access to needy others, or to

someone who can gain access to them, are seen as obstacles to getting rid of food through such a pathway.

5.3.1.3 Putting food out to animals

This section discusses the ways in which putting food out to animals operates as a pathway to dispose of unwanted food; it also highlights the instability of this pathway. Putting unwanted food out to animals operates as a last resort to save food from wastage for those who have access to such a pathway. Food that is unacceptable to share or donate is given to other living beings, along with unclean surpluses (e.g. plate leftovers) and inedible food parts (e.g. peels and bones).

Participants in this study adopt the practice of putting food out to animals as part of their domestic food management. Muneera, Suaad, and Taghreed freeze food in bags and pass them later to animals. Muneera collects food left on utensils and guests' plates, and inedible food parts (e.g. chicken tail, bones, peels) in bags in her freezer and hands them out to her sons to put in a nearby valley for stray cats and dogs and birds. Suaad does the same and pointed out that "having empty lands nearby helps her as it is easy to put [the unwanted food] there". Taghreed also enjoys easy access to animals through her family-in-law's farm but that access has changed over the years and so has her ways of managing unwanted food. Since the farm's animals do not eat meat, she used to give it to her father's dogs but when they were sold, she had to throw unwanted meat away. She now has cats that are fed any unwanted meat: "poor them those who don't have access to animals; honestly what do they do with the food!". These participants recognize that having access to animals enables them to avoid food wastage and so assuages their anxieties and worries around waste.

Considering the examples above, as with food donation, access to animals can be a barrier to passing unwanted food to them and avoiding wasting such food. For example, Shariyfa and her husband put bread in neighborhood bread containers placed by the council but they have to look around to spot one as the containers' place is changed frequently. They also put other unwanted food on empty lands but they have to travel far as there are none near where they live. Other participants also complain about the difficulty of passing food to animals. Hanan and Busmah freeze the unwanted food in bags in their small freezer to take them to their mothers that put the bags with their own unwanted food for animals. They complain about forgetting to take the bags sometimes, and so their freezers get crammed with food and they have to throw some of them away. While Shariyfa, Hanan, and Busmah still have relative access to animals, others in this study can only place unwanted food next to local councils' bins to avoid food waste. For example, Modhi puts unwanted food in a partially open bag next to the street bin for stray cats or livestock owners. Rahma hangs the unwanted food, that her father-in-law's chicken do not eat, on the street bin for those who roam neighbourhoods looking for food for their livestock. It is not clear from the data of this study if the unwanted food put next to councils' bins ends up being eaten by animals or collected by councils, hence ending up in landfill. Nevertheless, some participants put it near bins hoping that it would be saved from wastage, as Zaineab mentions "I pray... 'oh God, inshallah (if God will) animals will eat the food".

Another key illustration that highlights the importance of access in determining the destiny of unwanted food is for public bread containers. These containers are

organized by some charities and livestock owners and are the only formal way for the collection of unwanted bread. They seem to be an effective way to dispose of bread as none of the participants, apart from one, throw it away because they have access to these containers in their neighborhoods. Hence, containers provide access to dispose of bread and so even participants who throw away all other unwanted food reported putting bread in these public containers. The only participant that throws away the unwanted bread, Walaa, reported the lack of bread containers in her neighborhood. This further illustrates that access is a key determinant in diverting food away from the waste stream. It also suggests that people's willingness to avoid food waste can be aided, or hindered, by the availability of accessible pathways to get rid of unwanted food in ways that save it from wastage.

5.3.1.4 Managing and disposing of food waste

This section starts with explaining why surplus food ends up being wasted and then discusses the practices participants adopt to manage and dispose of food after it becomes waste. As the data of this study suggest, food waste results from the lack of access to alternative pathways to dispose of unwanted food and from the difficulty of managing the demands of everyday life. In addition, food waste can be an emotional response to the pressure some participants in this study experience.

In this study, despite participants' expressed desire to avoid food waste, lack of access was the main reason for food waste in their households. For example, Aljazi put unwanted rice on an empty nearby land but when that land was developed, she began to throw much of it away. In Amani's and Nihad's households, only bread is put in public containers and the rest of the unwanted food becomes waste as they do not

have access to other pathways to dispose of unwanted food. Amani pointed out that putting the rest of the unwanted food next to the street bin, as others in this study do, is not a reliable way to avoid food waste as no one would pick it up and it would eventually end up in landfill. Nihad, on other hand, thinks that although the food might be eaten by some stray cats, such a way of disposing of unwanted food is unhygienic and might bother her neighbors.

Another reason for food waste is related to managing the demands of everyday life. Some participants see that ending up with food waste that is not suitable to pass to animals is an inevitable part of managing their busy lives. For example, Fariyda and Sharifya pass most unwanted food to animals, apart from rotten food that is harmful to them and so has to be thrown away. When she is busy for a few days, Fariyda occasionally finds some rotten food in her fridge "it slips away from me!". Sharifya also mentioned finding some rotten food and added that she is "not perfect" and "no matter how good I am, I am still human not an angel".

Other participants pointed out that food waste is an emotional response to the pressure they experience in their lives. When Dana feels stressed by her toddler's refusal to eat, she throws away her child's food but then "calms down" and regrets what she did. When Basmah is tired and has a small amount of unwanted food left, she feels "lazy" and "not in the mood" to open the freezer and put it in a bag for animals, so she throws it away instead:

"most often I do that (giving food to animals) but I cannot say to you that my life is one hundred percent perfect. Sometimes I may put it in the bin [...] I know it

is wrong. I know I am wrong”

This suggests that Basmah, and also Dana, Fariydah, and Sahriyfa, believe that having zero waste is an ideal that no one can attain given the demands of managing a busy home and the emotional toll of coping with life.

One interesting point to mention is that participants' intentions to adopt practices to reduce food waste seem to be influenced by their perceived responsibility for generating it in the first place. For example, Dana and Basmah who throw away some edible food for emotional reasons felt guilty about and responsible for such a waste. They also reported acting on their guilts more often by passing more food to animals and so their food waste, as they reported, is much less than it used to be. On the other hand, Sharifya and Fariydah, who pass most of the unwanted food to animals apart from rotten food, felt satisfied with the way they manage surplus food in their homes. Their waste, as they pointed out, is unintentional and infrequent. This suggests that perceived control over food waste generated at home can be a key factor in its reduction. People are more likely to attempt to reduce food waste if such waste is perceived as under their control. This includes, as mentioned in the previous section, having access to alternative pathways to pass unwanted food in a way that saves it from wastage.

In instances where it is not possible to give unwanted food to animals, participants adopt certain practices to enact food disposal. These practices are: storing unwanted food until it becomes inedible, therefore waste; putting rotten food out to animals, knowing that they will not eat it; and separating food waste from "impure" waste. The

rest of this section discusses how these practices are carried out, and section 5.3.2 explains the motivations behind carrying them out.

Participants that have limited access to animals often keep unwanted food stored until it is no longer edible. Postponing the decision to throw out food becomes a way to legitimize wasting it, as it poses possible health risks, and to manage moral concerns about wasting good food. For example, Amani's family, who only have access to bread containers, store any other unwanted leftovers in the fridge until they become no longer safe to keep because no one in her family wants to throw good food away. Another practice adopted to avoid throwing food away is putting rotten food with that given to animals, aware that the animals were likely not to eat it. Placing rotten food on empty lands assuages Dana and Qamar's anxieties and worries around committing the sin of waste. Another common practice to handle food waste is separating it from the rest of the household waste. For example, Lama, Rahma, Modhi, and Fariydah do not mix food waste with other types of unclean waste as they consider such an act a disrespectful way to handle food. These three practices of disposing of food waste illustrate that the passage of food into waste does not end, as commonly assumed, by placing food in the bin. Such food is handled in various ways to manage concerns about its wastage.

5.3.2 Moral motivations for adopting circular practices

This section explains the motivations behind participants' adopting the circular practices of sharing food, donating it, and putting it out to animals. It focuses on how the concept of 'preserving the blessing of food' influences participants to adopt a

range of circular practices to manage unwanted in ways that save it from wastage and dispose of food waste in ways that honour the blessing of food.

Before proceeding, it is important to highlight a key distinction between the practice of sharing and that of donating food. Sharing occurs within the social circle as a part of social life and courtesy. Walaa, for example, offers her neighbor surplus food from gatherings "to strengthen [her] relationship with the neighbor". Since sharing food serves key social functions of enhancing social bonds, surplus from gatherings and limited types of everyday food are considered socially acceptable for sharing. For example, Aljazi never sends her neighbor leftovers from mealtimes, but when she cooks a special dish, she sends some to her neighbor. Additionally, participants pointed out that gifting produce from farmers' markets and family farms is acceptable; but not sharing vegetables bought from supermarkets. The main reason for excluding some types of food from sharing is to avoid mistaken sharing with food donation, which is only acceptable to give to those outside one's social circle.

While participants often spoke about sharing as a part of social life, they considered the practices of donating unwanted food to other living beings and separating food waste as ways to "preserve the blessing" of food. These practices are motivated by their religious beliefs and perceived duty as Muslims to save food from being wasted. As the analysis of the data suggests, there are three reasons for seeking to preserve the blessing, and so adopting circular practices: to have a blessed life, to seek rewards in the hereafter, and to avoid the sin of waste and punishment.

The practices of giving food to needy others and other living beings are considered a

pathway to a blessed life. For example, Suaad mentioned "seeing the impact" of the practice of food donation "on a lot of people, donors, who are financially well off because if one is thankful for the blessing, it will last". Similarly, Jameela mentioned giving unwanted food to her building keeper because "one has to appreciate the blessing 'If you are grateful, I will surely increase you (in favor)' (a verse in the Holy Qur'an)." By passing food to others in need, Suaad and Jameela hope to preserve and have more of the blessings they have in their lives. Participants that pass food scraps to animals also express similar views about the impact of giving food out on their lives. When Fatema and Modhi put unwanted food out to animals, they feel "relieved" because preserving food in this way blesses their homes:

"Some people don't know it is barakah (blessing) in our house" (Fatema)

"I believe that the more you preserve the blessing, the more God will give you.

[...]; but throwing the blessing away causes all the diseases" (Modhi)

As the quotations above illustrate, giving unwanted food to other living beings is not seen as a way to get rid of unwanted food but rather as a moral act that would impact their lives favourably.

The second reason for adopting circular practices is to seek rewards in the hereafter. Participants often referred to the hadith (Prophet Muhammad's sayings) "There is a reward for serving any animate being" to explain why they give food to others and to animals. By giving food away, participants hope to be rewarded for such a good deed in the hereafter. For example, Rana and her family only pass complete meals to others in need for their actions to be "sincere" and rewarded in later life. When Suaad hands

over unwanted food to others in need she "intends it as charity". Muneera, another example, collects unwanted surplus food in her gatherings and the ones she attends and distributes it in her less-affluent neighbourhood: "This is my way of preserving the blessing". She hopes that her efforts will be rewarded in her afterlife: "May God not count it as ostentation or for reputation and accept it as a sincere act for the sake of God". Participants also consider feeding animals a charitable act. When Haiyla puts dry food in her backyard for stray cats and birds, she prays for her "Late mother-in-law, father, and mother and all Muslims". Similarly, when talking about putting food out to stray cats, Fawziya and Aljazi hope to be rewarded in their later life:

"One enters Heaven because of the mercy of God and then the good deeds they did". (Fawziya)

"I intend it as alms for me and my late father". (Aljazi)

The examples mentioned in this part show how donating food is deeply rooted in participants' religious beliefs. They also illustrate the moral purpose that food serves; it enables people to be charitable and enact their beliefs.

The third reason that explains why people adopt circular practices that aim to preserve food is to avoid the sin of waste. Participants considered wasting food as an immoral act that is punishable both in this life and hereafter. As Lama, Dana, and Basmah mentioned, throwing food away shows disregard for the blessing of food. Basmah explains that:

"God honors us and we are able to afford food. [...] so it is one of the worst

things to degrade the blessing in this way [...] God forbid, [...] we might experience poverty"

Therefore, by saving food from wastage, participants show their "thankfulness" and appreciation for having such blessings, and so hope to avoid the punishment and the sin of waste, as Fariydah explained:

"One fears that the blessing might vanish. [...] We will be held accountable for [food waste]; when Doomsday comes [...] You see those countries that have rain and everything but also have poverty. Why doesn't their land sprout? A punishment? God knows if this is because of wrongdoings that they committed [...] What is happening to them might happen to us if we don't appreciate the blessing. God says 'if you are grateful, I will surely increase you in favor' (a verse from Qur'an) "

The quotation illustrates several beliefs shared also by participants; to throw away food that one is blessed with while others suffer from the lack of food, is an ungrateful act that one will be held accountable for in the hereafter and might be punished for in this life. As such, participants felt responsible for the unwanted surplus they produced and tried to pass as much of it as possible to other living beings.

The concept of preserving the blessing does not only influence the ways in which participants manage unwanted food but also food after it becomes waste. The three practices of disposing of food waste discussed in section 5.3.1.4 illustrate such an influence. They are: storing unwanted food until it becomes inedible; putting rotten food out to animals; and separating food waste. The first two practices help to contain

participants' worries around committing the sin of throwing away food. Amani's family, for example, keep food until it gets rotten because no one in her family wants to "carry the sin" of putting good food in the bin; whereas Dana places rotten food with that given to animals as she "fears putting it in the bin. This is haram (forbidden)". The third practice of separating food waste from the rest of the household waste has a moral purpose. Lama views such a practice as a way to "honor the blessing by not mixing it with diapers". Similarly, Rahma mentioned that "to honor the blessing of food", she does not mix any inedible food parts (e.g. peels and shells) with bathroom bins that have unclean waste. Modhi and Fariyda also mentioned that mixing God's blessing (foods) with dirt is "haram (forbidden)" and "a sin". These examples suggest that food does not lose its moral value or meaning when it becomes waste.

The examples in this section show how moral beliefs influence the enactment of unwanted food and food waste disposal. Disposing of unwanted food in certain ways rather than others shows the morality in the ways food is managed. For example, the moral obligation towards those in need involves donating only good, presentable food, and so some food that is deemed unacceptable to donate might end up being fed to animals or wasted. Similarly, those who throw rotten food away instead of feeding it to animals consider it a moral act towards the animals. Even when food is considered no longer suitable for any form of consumption, it has a moral value; hence the practice of separating food waste from the rest of household waste, although that does not affect its final destination, namely landfill.

5.4 Concluding discussion: reducing household food waste

This paper addresses the lack of attention paid to those domestic, circular practices that aim to reduce and manage food waste. It uncovers the ways in which 'circularity' is enacted within the domestic sphere. In this, the paper discusses the various circular practices, of sharing and passing food to other living beings, that are already under way within people's homes. It also illustrates the reasons why such practices do not operate consistently to dispose of unwanted food and how in these instances people enact the disposal of food waste. The paper also explains the moral meanings that people attach to circular practices, revealing the moralities involved in the disposal of unwanted food and food waste. The rest of this section revisits the contributions of this paper.

The first contribution is the provision of an in-depth overview of domestic circular practices aimed at reducing and managing food waste at the household level. The paper highlights how participants engage in a range of practices to deal with different types of surpluses and channel them to appropriate pathways. In addition, the paper uncovers different ways of enacting food waste disposal and thereby shows the ranges of routes taken by surplus food, not all of which result in that food being thrown away. The explorations of these circular practices address the lack of research on how food is managed after it is deemed both surplus and unwanted. In that, the paper responds to calls to investigate the domestic side of the circular economy (Mylan et al, 2016) and the "disposal gap" (Evans, 2014) where food is classified as excess but not yet waste.

The second contribution of this paper is to show the complex network of moralities behind adopting circular practices. Revealing such moralities casts doubts on claims that people behave in ways that are not consistent with their moral attitudes; hence food waste can be reduced by bridging the attitude-behavior gap. The ways participants choose different types of surplus to be channeled to specific pathways demonstrate the morality of circular practices and how these practices are sustained by deeply held moral beliefs. Participants believe that it is their moral obligation to ensure that food is given to those who need it and in a presentable way. So any food that is deemed unacceptable to be donated is fed to animals, where possible. Similarly, those who throw rotten food away consider feeding such food to animals an immoral act. Nevertheless, that rotten food still has a moral value and needs to be dealt with respectfully; hence the practice of separating food waste from the rest of household waste. These examples demonstrate the moral dimensions of the disposal of unwanted food and food waste and also show that there is nothing careless or carefree in the ways participants enact such disposal.

The paper also contributes to the literature by demonstrating how sustaining circular practices requires going beyond the reliance on people's motivations to preserve food and avoid waste. This paper identifies both normative and access barriers to adopting circular practices to reduce food waste. Participants have certain standards about what food is acceptable to be given to other humans, beyond cleanness and edibility. In this study, it is not the norm to give incomplete meals such as leftover rice without meat to others, and so such food can end up being wasted when participants have limited access to animals that would eat the unwanted food. Access to pathways to

dispose of unwanted food is another barrier to food waste avoidance. Food ends up being wasted when participants are not able to find ways to pass unwanted food to other living beings before it becomes no longer edible. Given participants' willingness to engage in practices to manage food waste, connecting people to pathways to dispose of unwanted food in a timely manner, given that food is susceptible to spoilage, is a key to the success of efforts aiming at minimizing food that ends up in landfill and transitioning toward a circular economy.

This paper argues that in order to reduce household food waste, there is a need to address both values residing within people as well as normative and access barriers. It reveals that amongst Muslims, it is probably more important to provide them with the norms and the mechanisms to enact their existing beliefs than it is to target their conscience. Such insights demonstrate how the first step should be to examine the culture and whether people are already motivated to avoid food waste, before deciding whether to target people's conscience or to target normative and access barriers. In this regard, the paper echoes Herbok and Bok's (2017) remarks that food waste prevention campaigns targeting people's conscience only may have a limited effect. It argues that understanding the culture and tapping into people's existential beliefs by connecting them to pathways to manage unwanted food is essential to the reduction of household food waste.

Chapter 6: Conclusion - The Journey of food to waste: lessons from Saudi Arabia

6.1 Introduction

Why do families end up with surplus food that exceeds their needs and where does that food end up? These two questions were the focus of many previous studies that have approached the issue of household food waste from different angles. The most common method to study food waste in the literature is based on social psychology in which researchers look at factors associated with larger amounts of food waste using quantitative models (Boulet et al, 2021; Schanes et al, 2018). Fewer studies examine the topic from a qualitative perspective in which they look at how families manage food in their daily life and explain their food waste. Studies that used these two approaches have added to the knowledge of household food waste and shed light, sometimes indirectly, on what aspects need further study or studying from different angles. To this end, this thesis picked up from where others have left off. It studied topics that have not been addressed by the previous literature or where little is known and it revealed underlying factors that provide fresh explanations for why food becomes or does not become waste. Specifically, this thesis provided explanations for how surplus food is generated, how such surplus becomes wanted or unwanted, and how unwanted food is managed and becomes or does not become waste – in two settings: everyday meals served to family and meals served to guests at domestic gatherings. These explanations are the focus of the next section in which I tell the story of the data and how this story can inform efforts aimed to minimize surplus food and

food waste. In doing so, I answer the research questions posed in Chapter 1 and also highlight how future research can build on the findings of this thesis.

6.2 The story of the passage of food into waste

This section provides a reflection on the passage of food presented in the empirical chapters. It also answers four of the research questions posed in Chapter one about how surplus food is generated, rejected, and managed at both social gatherings and family settings.

How is surplus food generated?

The value of food extends beyond nutrition. Food is a means to express identities and communicate with people to whom food is served. Through food provisioning, providers, especially mothers and wives, can demonstrate their homemaking skills, take care of their young children, and nurture the social bonds of connectedness with their adult offspring. Food provisioning is also a means to take care of those who visit the home less often. Providing feasts to guests has a significant social meaning. Those feasts are a way to communicate the host's appreciation for the guests' visit, honor them, and equally important, avoid criticism and social conflicts. Considering the significant role food plays in people's social life, serving 'just enough' or little food for family and guests involves the risk of failing to be a good provider. When food is scarce, the family will not have enough to eat, which was a great source of worry for participants in this study. They worried about their children wanting to eat more and so they provided extra food, although that entailed the risk of ending up with surplus food. Running out of food for guests reveals a different kind of worry. Participants dreaded the idea of food finishing before the guests were satisfied and so provided

much more food than the guests would eat and they felt relaxed when seeing surplus food after the guests left the dinner table. Therefore, surplus food is created after fulfilling social and emotional purposes in supporting the good provider identity.

In the family context, the enactment of the good provider role, so the reasons for surplus generation, varies across the family life cycle and as the family grow. In the earlier phases of marriage life, the wish to be good wives and meet the social expectations of their role as skilled providers were the main reasons for surplus generation. Extra food was produced as a result of attempts to balance the wish to provide significant others with appetizing and varied home-cooked meals and the desire to enjoy a flexible lifestyle, socialize outside the home, or take a break from mundane food-related chores. Although wives expressed concerns about the surplus generated in their homes, for moral and financial reasons, these concerns were overridden by those about meeting the demands of their social role as good providers. The enactment of the good provider's role through food provisioning, and the consequences of that on surplus generation, became more noticeable as children join the family. Surpluses arose with mothers' attempts and struggles to provide nutritious home-cooked food to their younger children that tended to have an unpredictable appetites and whose eating tended to be selective. Concerns about surplus generation were not inexistence but they were overridden by those about children's wellbeing and fulfilling the role of being good mothers. As children grow and become more independent, providing meals becomes a way to practice motherhood and connect with the children, whether they live in or outside the parent's home. Mothers in this study preferred to have meals readily available for the children in case they showed

up wanting to eat, knowing that such meals might not be eaten. Although mothers expressed concerns about ending up with surplus food, they were more occupied with expressing their motherly love and affection for their now independent children through the provisioning of home-cooked meals.

In two stages in the family life cycle, providers felt that putting meal plans into action was particularly difficult. In the early stages of marriage life, it was not always possible for wives to prepare food as planned because of their unpredictable life. The life of young couples was less structured which interrupts the plans to eat the food they already acquired. In a similar way, adult children's unpredictable lifestyles influenced their mother's food plans. For providers in this study, having food plans, at least a rough one, was important to ensure that food was available for their families, but when things did not go as planned, this food often became surplus. This shows that food provisioning is deeply rooted in wives' and mothers' identities as nurture and primary food providers for their families. Surplus results from expressing such identities and out of care for family, rather than from carelessness about surplus food and food waste.

Surplus food is also generated as part of expressing the good provider identity in social gatherings hosted at homes. In such gatherings, the dinner table represents a front stage where hospitality practices take place and where the hosts communicate their appreciation for the guests. Staging the dinner table according to hospitality norms or practices serves the social purpose of showing the host hospitality and avoiding shame and embarrassment. In the Saudi community, abiding by hospitality norms is not only an essential quality of a good host but is also linked to the generation of large

amounts of surpluses. This thesis identified three hospitality practices or norms that hosts need to observe when preparing the dinner table that guests are invited to. The first practice is serving whole, uncut red meat (thebiyha), a meal that has a high social significance in Saudi society. Although red meat is a strong symbol of hospitality, guests tended to prefer eating more modern dishes, hence hosts often served several types of dishes along red meat, which is the second hospitality practice. To be a generous host and satisfy the guests' different preferences, hosts served various dishes in portions enough for each guest to eat from whatever dish he or she fancied. This is linked to the third hospitality practice: overprovisioning: a way to show generosity and avoid the shame of running out of food before the guests are satisfied. A hospitable dinner table has to have a variety of dishes served in large portions, with red meat being the star of the table. Staging the dinner table according to the three norms or practices of hospitality ultimately resulted in serving much more food than the guests would eat, leading to the generation of large amounts of surplus. Seeing such a surplus was important for participants as it assured them that their guests were served well and according to the expectations and the norms of hospitality. This shows that the dinner table is a showpiece for the eyes to feast on rather than the stomach. The resulting surpluses have important social purposes of enabling providers to be generous hosts and have a good reputation in their communities.

Why does surplus food become unwanted?

Surplus generated in homes went through a process of classification of its different elements as wanted or unwanted. Such a decision was largely based on two factors: surplus food cleanness and sensory properties and variations.

The perception of surplus food cleanness depended on the person's or family's disgust sensitivity which also depended on if and how food was touched and by whom. Guests' plate leftovers fostered feelings of disgust and were deemed unwanted except if the host was fairly certain that the items on the plate remained untouched by diners' fingers and spoons. By contrast, food left on the serving plate was considered clean and so suitable for human consumption. In regard to everyday meals, families who normally ate from a communal plate had lower disgust sensitivity, hence they often considered plate leftovers clean and kept them for future use. Those who were used to eating from individual plates, on the other hand, had higher disgust sensitivity and deemed plate leftovers unclean and kept them separated from the clean food left on the serving plates.

Such classification of food as (un)clean impacted how it was managed and disposed of. Unclean surplus was considered unsuitable for human consumption whereas clean surplus was given another chance, but only if it provided a superior sensory eating experience for the eaters. This experience was assessed based on two hedonistic factors: the food sensory properties and variations. Clean surpluses were kept if their sensory properties such as taste, texture, and smell had not been or would not be compromised. Even though they were safe to eat, some parts of the surplus food were deemed unwanted if they would lose (or had lost) some of their original sensory properties or when there was no possibility of improving such properties by adding other ingredients. Surplus food was also deemed unwanted for reasons related to sensory variations: the desire to avoid eating the same food on consecutive days. This

shows that variety in the type of meals served is an essential determinant of food enjoyment.

Considering the above, clean surpluses sometimes become unwanted and are replaced by fresh meals that deliver a superior sensory eating experience. This desire to seek a superior experience is influenced, to some extent, by the availability and affordability of fresh foods which would make consuming leftovers and surpluses no longer a necessity. Another factor that affected the possibility of consuming leftover food is related to social norms. Participants considered eating home-cooked leftovers outside their homes not culturally acceptable and so when their plans to eat leftovers were interrupted by absence from the family home, the food often became unwanted due to the loss of its sensory properties.

How is unwanted food managed?

While the story of how surplus was generated and rejected might suggest providers' lack of concerns about the surplus food created in their homes, the story of how providers manage unwanted surplus food counters such a claim. There was nothing careless or carefree in the ways participants managed the unwanted surplus food they had. After participants classified different surplus elements as (un)clean and (un)wanted, they engaged in domestic circular practices aimed to avoid food waste. Such an engagement was mainly motivated by their moral and religious beliefs that food waste is a sin that is punished in this life and the hereafter; while saving unwanted food from wastage is a charitable act that is rewarded in this life and the hereafter.

The domestic circular practices of managing unwanted food participants adopted are: sharing food within the social circle, donating food to others in need, and putting food out for animals. The practice of sharing food served a social purpose of connecting and nurturing relationships with people within one's social circle. As such, only certain types of food were socially acceptable to be shared: clean surplus food left after social gatherings and special meals prepared specifically for sharing. Sharing small amounts of surplus food from gatherings or sharing surplus from everyday meals might be misinterpreted as a donation and so the recipient might be offended by receiving such food. Therefore, participants donated some of the unwanted clean surpluses that could not be shared with others in need. They believed that such an act of donation is rewarded in this life and the hereafter. Therefore, they tried to be conscientious in the ways they presented unwanted surplus to the recipients: the surplus had to be clean, safe to eat, and was given as a complete meal (so no meat without rice). Surpluses that were unacceptable for donation were put out for animals. In this way, food becomes alms rather than a sin or waste. This showed the moral purposes that surpluses in their various conditions served; it enabled people to enact their religious beliefs, be charitable, and avoid sinning.

The process of managing unwanted food was not straightforward as sometimes participants were not able to access the pathways to dispose of unwanted food. Access to others who would accept food donations and finding places to put food out for animals was difficult for some participants. The lack of channels that connect these participants to pathways to dispose of unwanted food hindered the enactment of their moral beliefs that opposed food waste. For this, food waste was not a result of

careless or callous disregard for the food that participants ended up wasting. On the contrary, they often followed certain procedures in order to enact food waste disposal in ways that ameliorated concerns about its wastage. Food was sometimes kept until it was no longer safe to store, an action that justified its disposal. In addition, food waste was often separated from the rest of the impure household waste, a practice aimed at honoring the blessing of food. Moreover, to avoid throwing away rotten food, some participants put it out for animals, knowing that they would not eat it, to assuage the guilt of throwing food away. These examples indicated people's willingness to engage in practices that limit food waste, thereby enacting their moral beliefs. They also show that food, in both its edible and inedible state, has a significant moral value, bringing to the fore the issue of the morality of food waste, a main contribution of this thesis which is discussed in the next section.

6.3 The thesis contributions to the food waste literature

This thesis has contributed to a better understanding of the passage of food into waste, a topic that has received limited attention in the food waste literature. It has investigated each step of the passage in its own right, revealing different sets of factors that are associated with each step and avoiding linking factors directly to food waste generation, as is the tendency in previous research.

This thesis has presented several more specific contributions in the empirical chapters in which each step in the passage of food into waste was analyzed in two settings: everyday meals served to family and meals served to guests at social gatherings hosted at homes. The remainder of the section provides a summary of how this thesis enriches the food waste literature and informs future research.

Contribution 1: Broadening and deepening the understanding of the role of the good provider identity in surplus food generation

Previous food waste studies point to the link between the wish to be a good provider for family and guests and both overprovisioning and food waste (e.g. Barone et al, 2019; Chammas and Yehya, 2020; Graham-Rowe et al, 2014; Evans, 2014; Porpino et al, 2016). However, they treat the good provider identity briefly as one broad concept. This thesis broadens and deepens previous findings by illustrating how the good provider identity is expressed and maintained at social gatherings and the various expressions of the identity throughout the family lifecycle. Such findings contribute to the literature by revealing the complexity and dimensions of the good provider identity and the implications of that on the generation of surplus food. Therefore, the thesis provides new insights into the different underlying reasons for surplus food generation at social gatherings and different family contexts, a key step in addressing and tackling such an issue.

To the best of the author's knowledge, no study has attempted to investigate how the reasons for surplus food generation are connected to different expressions of the good provider identity in different meal settings and stages of family life. Having a robust knowledge of how such expressions can explain surplus generation at home helps to avoid targeting noticeable symptoms and to focus instead on underlying reasons and factors. The thesis illustrates how the reasons for surplus generation revolve around the various expressions of the good provider identity. Being a good provider when hosting a social gathering at home requires staging a presentable dinner table according to hospitality norms common in the community. Staging often

entails providing large amounts of food as it is a necessary way to take care of guests, manage their impressions of the host, and avoid conflict. In a family setting, surplus is generated as a result of providers' efforts to create meals that demonstrate their homemaking skills, meet their perceived obligations to ensure that younger children are well-fed, and nurture the social bond with their adult offspring.

This thesis focused on mothers' identity as the main provider in the family. Future research can focus on different family settings where food responsibilities are assumed by other members of the family or delegated to house staff. Such research could find different underlying reasons related to meeting the expectations of those to whom food is served.

Contribution 2: Untangling the complex relationship between meal planning and surplus food and food waste generation

While planning for shopping and meals is one of the most recommended strategies to minimize food waste, findings on the relationship between planning and food waste reduction are inconsistent in previous food waste studies (Diaz-Ruiz et al, 2018; Quested et al, 2013; Stancu et al., 2016; Stefan et al, 2013; Visschers et al., 2016). The findings of this thesis can clarify some of these inconsistencies. By using the lens of the family life cycle, the thesis reveals that putting meal plans into action can be particularly difficult in the stages of life where the lifestyle of the family or some of its members is flexible. In some stages of family life, participants found that they had more surplus when attempting to plan their shopping and meals because of their or their families' less predictable lives. This thesis points to an interesting future area of

research to further understand how different levels of flexibility in meal plans might affect surplus food and food waste generation in different life settings.

Contribution 3: Revealing the roots of surplus food rejection

This thesis provides multidimensional explanations for the reasons for rejecting surplus meals and points to the social, cultural, and hedonistic factors that influence such a rejection. Previous food waste studies identify the unattractiveness of surplus meals as the main reason they become waste (Andrews et al, 2018; Clark and Manning 2018; Porpino et al, 2016; Romani et al, 2018), as they are often seen as less tasty than fresh food and, having appeared in a previous meal, as having lost their novelty (Cappellini, 2009). This thesis explains the findings of these other studies by illustrating how food enjoyment and the need for superior sensory eating experience are societally and socially driven. It also contributes to the literature by discussing how inter-generational differences influence the perception of sensory eating experiences, and so deeming surplus meals as (un)wanted. Older generations grew up eating mainly home-cooked meals and felt content with consuming leftovers and preferred them to takeaways. Younger people, on the other hand, witnessed the expansion of food establishments in the country and so had a greater taste for restaurant food and preferred it to eating leftovers from home-cooked meals. These differences influenced the rejection of surplus meals as more surplus was deemed unwanted in households with a higher number of younger people compared to those with more older members.

Another contribution of this thesis is explaining how householders handle food touched by others while eating, such as plate leftovers. There is limited mention of how plate leftovers are assessed and disposed of in the food waste literature. This thesis fills such a gap by highlighting the influence of changes in eating manners on the heightening of food-related disgust, the perception of surplus as (un)clean, and the consequence of that on rejecting such food.

While this thesis has revealed the importance of superior taste in Saudi culture, in other cultures, other factors might be influential; this would require additional research. Future research could also pay attention to the concept of disgust sensitivity in other cultures and how disgust might influence the management of surplus food.

Contribution 4: Addressing household food waste in a different domestic setting

The topic of how surplus food and food waste are generated at gatherings hosted at home has been overlooked in the food waste literature. No study, to the best of the author's knowledge, has attempted to investigate food waste at domestic gatherings; it has only been treated briefly as a part of studying ordinary, everyday consumption (e.g. Aktas, et al., 2018; Cappellini 2009; Southerton and Yates, 2015). This thesis provides novel insights into the passage of food into waste at social gatherings. Its main contribution in this regard is to explain how one set of norms applies when preparing food and another set when managing surplus food. Hosts in this study had to stage the dinner table according to the norms of hospitality common in the society and this often involved serving large amounts of a variety of dishes. The ways participants dealt with surplus food showed the influence of moral beliefs in food

waste avoidance. They engaged in several circular practices (such as sharing food, donating it, and putting it out for animals) in order to divert the surplus food away from the waste stream to other forms of consumption, thereby avoiding the sin of waste. This illustrates that while observing social norms led to the generation of surplus food, enacting moral beliefs mandate avoiding food waste.

Another main contribution is in deploying the theatrical concepts taken from Goffman (staging, impression management, idealization, regions, and props) to understand food provisioning at domestic gatherings. Goffman's approach provided a new lens to look at food waste-related practices as they were embedded within social interactions. Such an approach was useful in analyzing surplus food and food waste generation as parts of social interactions occurring between the host and the guests and in studying the prevailing norms, different practices and the meanings behind them. This added theoretical and analytical depth to the understanding of household food waste, an area that remains under-theorized.

Future studies can look into how using Goffman's theoretical concepts can inform research in other contexts such as that in everyday settings, where impression management and performances are not as apparent as in social gathering settings. Also, employing Goffman's concepts to study household food waste in other cultures could help in discovering how the prevailing social and moral norms influence the performance of practices that people adopt to prepare and manage food and the consequences of those on food waste generation.

Contribution 5: Revealing domestic circular practices aimed at disposing unwanted food

Steps between having excess food and its disposal have received limited attention in the food waste literature (Evans, 2014). There is often the assumption that excess food is waste and disposed of in ways that connect it to the waste stream. This thesis sheds light on how people manage excess food that is rejected by family and the range of circular practices they adopt to divert such food to other forms of consumption. Moreover, it looks at the practices people adopt to handle food once they have designated it as waste, hence unsuitable for consumption, a topic that has been overlooked by previous studies.

Revealing the range of practices people adopt to manage unwanted food before and after it becomes waste contributes to a better understanding of the consumer side of the circular economy. Most previous studies focus on circular practices in the supply chain, outside the domestic sphere (Mylan et al, 2016). By studying the circular practices that already take place in people's homes, this thesis illustrates the significance of the domestic context as a key site in the enactment of a transition toward the circular economy.

In the population of this study, there is a strong moral imperative to engage in practices that are aimed to channel food away from the waste stream. Cross-cultural studies can add to the thesis's findings by looking at how different sets of motivations, or the lack of them, influence food waste avoidance and the ways in which people manage and dispose of unwanted food.

Contribution 6: Revealing the moralities involved in the generation and disposal of food waste

This thesis has argued that the existing discourse about food waste neglects some of the steps in the journey of food. Instead, it treats the whole journey as one step: food waste. Such neglect and narrow focus seems to contribute to the view that there is a gap between moral attitudes toward food waste and behaviors associated with it, in that people behave in ways that are not consistent with their moral attitudes.

This thesis refutes such an argument by revealing the complex network of moralities behind the generation of surplus food and food waste. The topic of household food waste has seldom been studied from a moral and faith perspective (Yoreh and Scharper, 2020; Zamri et al, 2020). This thesis fills such a gap by revealing how surplus food generation occurs in a network of social relationships in which food provisioning is considered a moral obligation towards family and guests. It also reveals how disposing of unwanted food in certain ways rather than others shows the morality in the ways food is managed. For example, the moral obligation towards those in need involved donating only good, presentable food, and so some food that was deemed unacceptable to donate might end up being fed to animals or wasted. Similarly, throwing rotten food away instead of feeding it to animals was considered a moral act towards them. Even when food was considered no longer suitable for any form of consumption, it had a moral value and needed to be dealt with respectfully: hence the practices of separating food waste from the rest of household waste.

These examples reveal a snapshot of the moral complexities behind the generation of surplus food and food waste, complexities that are somewhat neglected in food waste literature. This revelation is a result of the in-depth study of the movements of food in people's homes. In that, the thesis has focused on steps that have been neglected in previous studies, such as those between rejecting and disposing of unwanted food, to reveal the moralities behind adopting a range of circular practices aimed to dispose of food in moral ways. To this end, I argue that the food waste literature tends to give hegemony to environmental morality without giving enough consideration to religious morality and moral obligations towards others, contributing to the discourse that food waste is immoral and inconsistent with prevalent attitudes.

Future studies need to give more attention to these other moral dimensions of surplus food and food waste generation. Such a step would help to move away from blaming individuals for the food waste generated in their homes towards addressing how to help people to handle food in moral ways and to meet their wider moral obligations towards others.

6.4 Interrupting the passage of food into waste: challenges and opportunities

This thesis has approached the issues of household surplus food and food waste generation as social rather than individual phenomena. My views about how the topic needs to be addressed were mainly inspired by sociologically-oriented approaches to studying food waste. There are two broadly distinguished social ontologies and ways of studying food waste: psychologically- and sociologically-oriented approaches. The former employs social-psychological frameworks to provide insights into the role of

cognitive processes and determinants of food-waste-related behavior that are internal to the individual, such as attitudes, norms, knowledge and intentions (Schanes et al, 2018). The latter approaches revolve around social practice theory and have broadened the perspective on the generation of food waste as they acknowledge the individual as embedded in wider social and cultural facets of everyday life (Schanes et al, 2018).

Both ontologies have their own merits; however, framing food waste as only a problem at an individual level influences the ways it is approached in interventions aimed at reducing household food waste. Food-waste-related interventions are largely informed by social psychology in which the problem of food waste is thought to be solved by educating individuals and changing their behaviors (Evans, 2011). While such interventions can work in some individual cases, wider and longer-term effects need to address the underlying social and cultural factors in which behaviors and ways of doing things are embedded. Shifting the focus from studying attitudes and intentions toward studying the social contexts and relationships helps to identify the roots of social problems.

To this end, my recommendations are influenced by the view that household surplus and food waste generations need to be situated in the broader social and cultural contexts in which they are generated. The recommendations are concerned with two aspects: (1) identifying ways of interrupting the passage of surplus food to waste and (2) highlighting normative and practical issues that would make interrupting such a passage challenging. The section starts with suggestions on how to capitalize on practices that go along with social and moral norms, as for example those related to

unwanted food management, and ends by pointing to the challenges in addressing practices that have deep social meanings, such as those connected to the generation of surplus food.

Less food waste ending up in landfill: Connecting people to accessible pathways to enact the disposal of food waste

Breaking the passage of food waste to landfill requires providing access to pathways to dispose of food waste. This will enable people to enact their existing beliefs and so has the potential to reduce the amount of food that ends up in landfill. That being said, the availability of these pathways will likely not reduce food waste unless they are accessible to the target population. This involves being available at the times and places convenient to people. In Saudi Arabia, since the practice of separating food waste is both common and goes along with people's existing beliefs, the collection of food waste by local councils can divert more waste away from landfill.

It is important to point out that this recommendation assumes the existence of values or beliefs that condemn food waste. In this thesis, the issue was not related to the lack of motivation but rather the lack of access, which hindered participants' ability to enact their moral beliefs. This points to the importance, in other cultures, of: (1) understanding what influences the community to handle food and dispose of it in certain ways rather than others; (2) connecting people to accessible pathways to enact food waste disposal in a sustainable way; and (3) encouraging the adoption of food disposal practices in ways that divert food from the waste stream to alternative pathways.

Less unwanted surplus food being wasted: Connecting people to pathways to dispose of unwanted food to animals

Interrupting the passage of unwanted surplus food to food waste requires supporting the various circular practices that help to divert it to other forms of consumption. This involves creating and sustaining access to pathways that connect people with those that would consume the surplus. That being said, the thesis argues that connecting people to pathways to dispose of food to animals could be more successful than connecting them to other people in need.

In the case of food passed to other people, the main challenge is related to food safety. Any formal effort to collect food and distribute it needs to ensure that the food is safe to eat and keep it this way until it reaches recipients. In Saudi Arabia, there are attempts to connect recipients and donors via food banks and charities that collect surplus food, inspect it, and then distribute it to those in need. Such initiatives were particularly successful in saving significant quantities of surplus food generated at social gatherings from wastage (Etaam, 2020). The initiatives, however, do not target everyday meals because of their small amounts and the logistical challenges in collecting and inspecting such food. A small-scale initiative in some neighborhoods attempts to address such an issue by installing public fridges near mosques so the donors can deliver unwanted food and whoever wants that food can collect it from the fridges. The main challenges in this regard are related to hygiene and safety since the responsibility for those lies on both the donors and recipients, who might be vulnerable and in need of that food. Moreover, some neighborhoods in which these

fridges are installed are affluent hence food might not be collected, as one participant pointed out.

Given these challenges, stopping unwanted food from becoming waste would require providing accessible pathways to pass it to animals. In this study, public bread containers were the only organized way to collect bread for livestock, which seems to be effective as participants reported putting most of their unwanted bread in these containers, instead of bins. For other food types, the pathways that participants relied on were unstable (such as a piece of empty land that can be developed and so remove such access to animals) and so some of their unwanted food ended up being wasted. Rather than relying on individuals' efforts, there is a need to establish more sustainable ways to collect unwanted food that is suitable for animal consumption. This might involve supporting industries to manage the collection, treatment, and distribution of unwanted food in economical and more sustainable ways.

Less surplus food becoming unwanted: Introducing new practices to encourage minimizing unclean surpluses

Keeping as much surplus food as possible clean would result in less surplus food being unwanted. This would require minimizing the amounts of plate leftovers which can be achieved by encouraging the adoption of new practices of serving food. The data of this study show two successful examples of minimizing unclean surpluses. A participant in this study was able to minimize unclean surpluses at social gatherings by serving food on small, one-bite-size plates. In this way, the eaters can take as much as they want and whatever they do not consume remains clean and so suitable for

consumption by others. In their family meals, other participants brought the servings plates to the dinner table so each eater scooped as much as they wanted to keep food clean.

In this regard, learnings from social practice theory can help encourage the adoption of new practices aimed at reducing unclean surpluses. Practices can be defined by the relation of their three elements: materials, competences and meanings (Shove, 2005). Encouraging people to serve food in smaller portion plates would require linking material artifacts (i.e. plates) to forms of competence or know-how (e.g. having the required skills) and images (e.g. of being caring and responsible). A successful introduction of a new food-related practice was initiated by some councils in Saudi Arabia. They encouraged restaurants to serve thebihya (red meat placed on a bed of rice) on plates that have a hidden bend to reduce the amount of rice put on these plates, thereby surplus, without changing the way the plates look. This example illustrates that finding new ways to serve food would require thinking about the issue from a social practice perspective to learn how to successfully introduce new practices.

Less food becoming surplus: Introducing new practices and intervening at moments of change

Minimizing surplus food is particularly challenging as it requires challenging the existing social norms, expectations, and expressions of identities. Every participant believed that food waste is wrong: there were no moral or social justifications for intentionally throwing food away. In the case of surplus generation, however, there

were strong social justifications for its generation in everyday life setting and social gatherings.

That being said, there are two suggestions that could be helpful in the minimization of surplus food. The example mentioned previously of how councils were successful in encouraging the use of new serving plates illustrates how surplus food can be minimized. This initiative was successful in minimizing surplus at domestic gatherings since the image of food served is an important way to show hospitality. For that, it might not succeed in minimizing surplus from family meals as providers in this study were concerned about not serving enough food for the family to eat well. A possible way to tackle this issue of family meal surplus generation is intervening at moments of change; they are occasions where the circumstances of life change such as when people get married or have children (Thompson et al, 2011). People tend to adopt new practices at these moments of change, more or less spontaneously, such as those relating to food provisioning and consumption (Thompson et al, 2011). Moments of change could provide opportunities to intervene and encourage the take-up of new practices aimed at reducing surplus generation. Interventions need to take on board different concerns and motivations people have during different stages of the family life cycle and in different settings.

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Appendices

Appendix A – Informed Consent Form

Informed Consent Form

Consumer food-related practices in Saudi Arabia

I confirm that:

- I have been told about the purpose of the project and I understand this.
- I have been given the opportunity to ask questions about the project and my participation.
- I voluntarily agree to participate in the project.
- I understand I can leave the project and withdraw my data at any time without giving reasons and that I will not be questioned about why I have left the project.
- The procedures regarding anonymity and confidentiality have been clearly explained to me (e.g. not using my real name, so that anything I contributed to this project cannot be recognized; that only anonymized data will be shared outside the research team).
- I agree to the use of voice recording.
- The use of the data in research, publications, sharing and archiving has been explained to me.

Name

If you wish to be contacted for a follow-up interview, please leave your contact details here (**optional**):

Email/Phone

Signed Date

Alia Aleshaiwi

PhD Student

Kingston University

Contact details

[\[redacted\]](#)

Research Participant Information Sheet

Consumer food-related practices in Saudi Arabia

My name is Alia Aleshaiwi. I am conducting a research project on the above topic as part of my PhD at Kingston University, and would like to invite you to take part in this research project.

Aim

This research will help in understanding how households deal with food in general including excess food. Your participation is highly appreciated and your inputs can help to identify ways to help consumers, charities, and policy makers to limit excess food.

Interviews

The interviews will be recorded, transcribed, and analysed. The findings will be published in the PhD thesis and papers in academic journals, and presented at conferences.

Participation is voluntary, anonymous and confidential

Involvement is completely voluntary. You can withdraw your participation at any time during the project without having to give a reason. After your interview, you can withdraw from the research up to the time it has been used in the PhD thesis or a publication or report. I won't publish anything that will allow anybody to identify you.

Questions and ethical approval

If you have any questions/concerns, during or after the study, you can contact Ms. Alia Aleshaiwi using the details at the bottom of the page.

Approval for the research has been given by the ethics committee of Kingston University.

Alia Aleshaiwi, Kingston University

Contact details

[redacted]

Appendix C – The Topic Guide

Ask participants to tell you about:

- Their families and meals time in their households
- Different family eating occasions and settings (everyday meals – weekends - Ramadhan)
- Manners of eating (e.g. eating individual or communal plates)
- How they acquire food and their shopping routine
- How they prepare main meals
- Eating arrangements
- How they manage food left after main meals and handle food left on plates and pots
- Incidents when the family did not eat the food prepared for them
- Examples when they ended up throwing away food
- How the fridge is used to store food
- Comparing food prepared for family and guests (preparation, serving, handling extra food, disposing of food)