



LUND UNIVERSITY

# Food Waste in Everyday Life

*The Power Relationship between People and Food Waste*

---

Jiang Xinyi

Master of Applied Cultural Analysis  
Department of Arts and Cultural Sciences  
TKAM01 – Spring 2010

Supervisors  
Lynn Åkesson  
Charlotte Hagström

## Abstract

---

### Food Waste in Everyday Life: The Power Relationship between People and Food Waste

Xinyi Jiang

Domestic food waste is a concept that recently has gained a lot of interest in the waste management industry. While people's daily practices have converged more cultural and social symbols with food waste and keep re-defining and re-constructing the domestic food waste system, food waste then has emerged as a way to explain the real meaning hidden behind the everyday practices.

By studying literature, conducting ethnographic fieldwork, as well as using cultural and anthropological theory to analyze empirical materials, my ambition is to answer the following questions:

- What and how do people define food waste?
- As the subject, do the human beings have a power over the domestic food waste?
- Though being generated by humans, does domestic food waste hold power over people?
- How does this power relationship influence people and domestic food waste in the daily practice?

This study focuses on domestic food waste as an ethnographic symbolic material and reflections of unnoticed meanings behind people's daily interaction. The study further emphasizes the presumption that the power relationship between people and domestic food waste is interactive. The thesis shows that food waste is an outcome of people's systematic reconstruction of their own life environment. During the daily interaction with it, the rules of hygiene become an important intervention influencing people's behavior. The study also points out that food waste is powerful since it reveals lifestyle and cultural identity.

The general conclusion is that both human being and food waste have power over each other. The study finally argues that cultural circumstances should be taken into consideration.

Keywords: power; relationship; domestic food waste, definition, identity.

## **Acknowledgments**

---

I would like to offer my heartfelt thanks to my dearest tutors Lynn Åkesson and Charlotte Hagström, all the teachers and students from the Master Programme of Applied Cultural Analysis, for their continual encouragement and patience and contributions to the thesis. I have learned so much from them which I believe will accompany me within the whole life. Without them, the thesis couldn't be accomplished like this.

I am also grateful to VA SYD, the fantastic Swedish waste management company, for offering me such a great internship experience. I feel so lucky to conduct the food waste project in Western Harbor which now becomes the biggest inspiration for this thesis. Thanks to Marie Castor and Henrik Aspegren, who has given me so much freedom, so much to think on, and whose social passion continues to inspire me.

Lund, 2010-05-27

Xinyi Jiang

## Table of contents

<b>Abstract</b> .....	i
<b>Acknowledgments</b> .....	ii
<b>Table of contents</b> .....	iii
<b>1 Introduction</b> .....	1
<b>1.1 Background</b> .....	1
<b>1.2 Purpose and Goal</b> .....	2
<b>1.3 Applicability</b> .....	2
<b>1.4 Limitation</b> .....	2
<b>1.5 Overview</b> .....	3
<b>2 Methodology Outline</b> .....	3
<b>2.1 Methodological Approach</b> .....	3
<b>2.2 Data Collection</b> .....	4
<b>2.3 Target Group</b> .....	4
<b>2.4 Method</b> .....	4
<b>3. Theoretical Framework</b> .....	6
<b>3.1 Power</b> .....	6
<b>3.2 Actor-Network Theory</b> .....	7
<b>3.3 Habitus and Fields</b> .....	9
<b>3.4 Uncleaness</b> .....	10
<b>4 Analysis of Fieldwork Material</b> .....	10
<b>4.1 Definition</b> .....	12
<b>4.1.1 Food Waste Game</b> .....	12
<b>4.1.2 Food Waste Vacuum System in Area Bo01, a Part of Western Harbor</b> .....	18
<b>4.1.3 Other Definitions</b> .....	21
<b>4.1.4 What is Food Waste?</b> .....	21

<b>4.2 Value Consumption and Unhygienic Food Waste</b> .....	24
<b>4.2.1 Value Consumption</b> .....	24
<b>4.2.2 Gloves in the Game</b> .....	26
<b>4.2.3 Pollution</b> .....	27
<b>4.2.4 Smell, Deterioration, and Disorder</b> .....	33
<b>4.3 Food Waste Structures X</b> .....	34
<b>4.3.1 Food Waste Structures Identity</b> .....	34
<b>4.3.2 Food Waste Structures Kitchen Design</b> .....	38
<b>4.3.3 Food Waste Structures Familial Duty</b> .....	39
<b>4.3.4 Food Waste Structures Daily Routine</b> .....	40
<b>4.4 Saying, Having and Doing</b> .....	41
<b>4.5 Food Waste and Neighborhood Reputation: A Round Trip</b> .....	43
<b>4.5.1 Neighborhood Reputation</b> .....	43
<b>4.5.2 Endogenous Effects</b> .....	45
<b>5 Result and Suggestion</b> .....	46
<b>6 Discussion and Conclusion</b> .....	47
<b>7 Reference</b> .....	49

## 1 Introduction

- 25 000 metric tons of food waste can produce biogas equivalent to two million liters of petrol
- A national goal in Sweden is 35% of all food waste should be treated biologically
- Food waste from a family of four can produce enough gas to drive 7.2 km per week
- Biogas significantly reduces the emissions of greenhouse gases such as carbon dioxide, methane and nitrous oxide

—Information from VA SYD

The growing interest in food waste management in recent years has been an important topic within both natural and environmental science. With the advanced waste separation technologies, however, people gradually lose their thorough understanding of food waste. They merely treat food waste as a simple, passive and static object but ignore its dynamic and performativity.

This study is going to use cultural analysis as the main method to know the current cognition and daily interaction people have with food waste so as to find out key factors influence people's food waste relative practices. The ultimate purpose is to optimize people's food waste behaviour to create more environmental benefits.

### 1.1 Background

*VA SYD* is a statutory joint authority which is concerned directly or indirectly with the supply of drinking water, sewage treatment and waste disposal. It focuses on further developing techniques and processes to contribute to a sustainable society.

In 2006, the company started a food waste project which aimed at fulfilling the national and local environmental objective of biological treatment of 35% of the city's food waste from households, restaurants and municipal enterprises.

*Area Bo01* was built in 2001 and became the first part of the district Western Harbour in Malmo. It was a middle-class neighbourhood as most residents had decent jobs with a respectable income. Promoted as one eco-cycle area of Malmo, it was supposed to be an environmentally, socially and economically sustainable district. Area Bo01 is equipped with an advanced food waste separation system, which helps to collect food waste so that the waste could be used as resources producing fertilizers and bio-gas.

*The difficulty* of VA SYD was that although keeping receiving food waste

separation information since 2001, the residents living in Area Bo01 still misused the food waste recycling system. Neither the quantity nor the quality of the food recycling outcome was as satisfactory as expected.

*Locks-on-chutes campaign* was then held by the solid waste manage department of VA SYD which takes the responsibility of educating their customers to use the food waste separation system in a correct way. With the purpose of improving both quality and quantity of the food waste generated, during August of 2009, VA SYD and its partner company started ‘Locks-on-chutes’ campaign to rectify the inhabitants’ incorrect recycling behaviors. They set locks on the food waste chutes and passed information materials within Area Bo01.

### **1.2 Purpose and Goal**

In September 2009, an ethnographic food waste research was designed with the aim to evaluate the campaign for VA SYD and collect the residents’ comments on the food recycling system; its purpose was also to figure out how to improve domestic food waste separation.

Based on the former fieldwork of that research, the purpose of this study is to develop a conceptual framework for analyzing the power relationship between human beings and domestic food waste generated by them. Rather than focusing barely on how to persuade users to recycle in a correct way, the goal is to reach a better and deeper understanding of people’s definition of food waste. This is important since the inhabitants’ concept of food waste has direct implications for food waste quality.

Meanwhile, not only the way people handle food waste in everyday life but also how food waste influence people are discussed.

### **1.3 Applicability**

The outcome of this thesis will help VA SYD and ENVAC (the global market leader in automated vacuum waste collection and inventor of the vacuum system), to gain a more thorough understanding of people’s ideas of food waste and the reasons affecting both the quality and quantity of food waste. Based on these findings, the companies can find strategies to improve the food waste recycling work.

### **1.4 Limitation**

Most of the fieldwork was conducted in private households and families. The

food waste here is almost ranged into domestic food waste. As fieldwork was mainly carried out in an international student corridor in Lund University and eight households in Western Harbor, Malmo, the informants are highly homogenous. The empirical materials are therefore somewhat limited and mainly represent university students and middle-class families.

### **1.5 Overview**

This thesis is organized as follows:

Chapter 2 provides an overview of methodology in the study. The work in Chapter 2 reflects both the methodological approach and the way to collect data for this food waste research. It provides a detailed introduction of the fieldwork process including informants' information and research methods adopted.

In subsequent chapter 3, I describe the main theories taken in the thesis and how they are applied in analyzing the empirical materials from the fieldwork. I discuss Michel Foucault's work *The Subject and Power* since the topic power is the core of the whole study. And also I discuss actor-network theory, habitus and fields and uncleanliness which help to understand the unrealized role that food waste plays in people's daily life.

In Chapter 4, I present both the ethnographic fieldwork materials and analysis in this food waste research. Firstly, I elaborate that people have power over food waste. The power is reflected via people's definition, consumption and daily interaction with it. Then the power that food waste has over people is discussed. I also discuss the gap between people's saying and doing. Together with these, the neighborhood influence related to the food waste is discussed as well.

In Chapter 5 and 6, I summarize the whole study to get a result and list the suggestion for VA SYD. The discussion about how to apply cultural analysis into food waste study is carried out at the end.

## **2 Methodology Outline**

### **2.1 Methodological Approach**

This is a study of power relationship between domestic food waste and human beings with conclusions drawn from ethnographic fieldworks, literature and theoretical analysis. Both quantitative and qualitative approaches were used.

Quantitative research, with the definition "a research strategy that emphasizes



quantification in the collection and analysis of data” (Bryman & Bell, 2003, p.38), was adopted to seek statistical descriptions of social and cultural phenomena concerning domestic food waste in everyday life. It helped to identify the monthly food waste quantity in Area Bo01 and the frequency of people’s interaction with it.

Meanwhile, in order to gather an in-depth understanding of household food waste behavior and the reasons governing such behavior, qualitative research was applied to record particular human interaction patterns through intricate details of everyday life, including people attitudes, behaviors, relationships and meaning-making processes.

## **2.2 Data Collection**

Primary data used in the thesis were collected through semi-structured interviews, participant observations, as well as non-participant observations. Selection of the interviewees was carried out by finding key roles<sup>1</sup> throughout the whole Area Bo01. Each interview lasted approximately one hour and were conducted face-to-face in the interviewees’ environment. The interviews and the observation of a designed game was also recorded by digital video. Other observations were recorded by taking notes.

Secondary data used in the thesis consists of: literature, oral description, articles and net blogs. These data sets were used to provide a wider understanding of the research also as data per se, broadening, the material used for analysis.

## **2.3 Target Group**

From September to December 2009, working as interns in VA SYD, my classmate Li Jia and I were conducting The Food Waste Project in Area Bo01. On the basis of the former internship work, the target group was the local residences living in Area Bo01. They were mainly middle-class people with comparatively high education, decent jobs and good income. Besides this, in order to fulfill the empirical materials, students in an international student corridor and customers in café were also studied as supplement.

## **2.4 Method**

Relationships are the foundation of user retention and real practices; experience is the glue that holds relationships together. In order to look for definitions and concepts on food waste, people’s daily experience of dealing with food and domestic

food waste, it was agreed that the research should focus on an interactive approach between literature research, observations and interviews.

*Semi-structured interviews* were conducted separately among different Swedish households and individuals categorized by their family structures, members' age, occupations and social backgrounds. Of the eight interviews, five were carried out in the form of face-to-face individual interviews with the aim of gaining a deep understanding of the interviewees, their attitudes, opinions, desires and experiences of the daily domestic food-waste behaviors. The other three interviews were carried out in the form of a group interview, which increased the sample size and reflected both the participants inside and outside interaction relationships with the food waste separation system in households.

*Participant observations* were adapted to gain a close point of view to see the real and natural interaction between people and domestic food waste. One participant observation of an international student corridor in Lund was used to gain a close and intimate familiarity with the students and their practices with the domestic food waste through the intensive involvement in their everyday life. The other one was executed while conducting a designed food waste description game in order to get a real image of people's domestic food waste definition behavior. Besides these, participant observations in a Lund Café were executed, which mainly emphasized on interactions between people when facing food waste.

*Direct observations* fulfilled the whole eight household interviews, which revealed the real practices people made with domestic food waste in daily life.

*Photo ethnographic method* was used in the fieldwork. The photos, of all the interviewees' kitchen separation spaces and an international student corridor and a refuse room, were applied to record the separation factors in their natural environment and context. It was also used to feed back some details of fieldwork with the aim of the eliciting insights and understandings. Besides, as a sort of graphical ethnography data, the photos were widely adopted to elaborate informants' unique food waste interaction patterns and habits.

*A Designed game* offered a platform to undertake the game observations instead of following the users. The purpose was to find out the difference between what they defined food waste and how they practiced the definition. The domestic food waste description game was divided into three stages: 1. the participants were asked to write down what they thought was food waste; 2. they were given word cards and asked to

categorize them into food waste and non food waste; 3. they were given a trash bin and required to select out the food waste

*Literature research* puts emphasis on information and articles around food waste studies and consumer culture.

### **3. Theoretical Framework**

In this chapter, I explain the theoretical framework which has been utilized in pursuing the relationship between people and food waste. This framework is interdisciplinary and focusing on anthropology and sociology. In the initial section of this chapter, I address the theory of Michel Foucault's 'The Subject and Power', a theory foundational to the thesis. The dimensions of the relationship between humans and food waste are discussed. Then I discuss Actor-Network-Theory, defining what the networks are in daily food waste practices and how they are generated. I follow this with an explanation of 'Habitus and Fields' I have used to understand what influences people's interaction with the same food substances from their experiences of food waste. Last, the concept of 'uncleanness' is introduced to elaborate the hygiene ideas about food waste.

#### **3.1 Power**

Cultural study is embedded in questions of power and ideology. Lewis (2002) says that there are two general approaches to power in cultural theory. The first is considered as a modernist approach, which means power is attached to different kinds of social structures including class, ethnicity and gender etc. Some groups could maintain their privilege in a relatively ongoing manner by using the power as a facility of the capitalist hierarchy.

Compared with that, the other approach to power, putting more emphasis on personal manifestations and their power experiences, is mainly used as a tool in the study to demonstrate the power relationship between people and domestic food waste. In such context, power is seen in terms of process and exchangeability. There is no doubt that power is involved in the relationship between people and domestic food waste which account for the factor that all relationships people are engaged in involve power. But here, power, as it is experienced at the level of the individual body, is no longer stable and may be deployed and redeployed in an infinite series of processes and exchanges. (Lewis, 2002, p.26)

Michel Foucault, a French philosopher, sociologist, and historian, once claims that power is everywhere and it exists at the level of everyday practice and everyday exchanges between subjects (Lewis, 2002, p.172). This makes it rational that power certainly exists in people's daily practices with food waste as well.

Generally speaking, the basic understanding of power is taken for granted as something that allows you to impose your own ideas and interests over others. It is usually exerted over things and more like a kind of capacity or ability which enables to modify, use, consume or destroy them. This kind of power mainly comes from aptitudes inherent in the body or is delivered by external instruments (Foucault, 1994, p.337). Thus it is easy to see from the superficial phenomenon that people seem to have absolute power over food waste, and the power derives from their inside aptitudes and outside instruments they use. They are free to generate, treat, throw or separate food waste. But power is not entity. Although it is everywhere, it exists only as exercised by some on others, only when it is put into action (Foucault, 1994, p.340)

In the essay, *The Subject and Power*, Foucault is inclined to discuss what characterizes the power: it brings into play relations between individuals or groups. According to him, power designates relationships between "partners" (Foucault, 1994, P337). The definition of a power relationship is then turned into an action mode which acts upon their actions: an action upon an action, on possible or actual future or present actions (Foucault, 2000, P340).

As is mentioned, I am after how people and food waste use their power to influence on each other. In order to get a better understanding of the power from people and food waste, it is necessary to have a clear image of the relationship between the two partners and not power itself. More accurately, unlike what we see that people have the ability to deal with food waste, the fact is that our power exists on the daily practice and interaction with food waste. In analysis of the studied relationship, power is treated as unstable, exchangeable and reflexive.

### **3.2 Actor-Network Theory**

Bruno Latour and Steve Woolgar, in 1979, published a book named *Laboratory Life* which had lots impacts on many subsequent conversations generated by the development of laboratory studies. In order to connect philosophy and sociology of science with daily life in laboratories, Latour and Woolgar utilized ethnographic methods to study science.

The two forms of naming actor-network theory are relational materiality and performativity. Relational materiality means that actor-network theory is a ruthless application of semiotics and it might be understood as a semiotics of materiality. It takes the semiotic insight, that of the relationality of entities, the notion that they are produced in relations, and applies this ruthlessly to all materials (Law and Hassard, 1999, P3).

It could be seen from the semiotic approach that entities achieve their form as a consequence of the relations they are located in. Meanwhile, it also means that the entities are performed in, by and through the relations, which is called performativity (Law and Hassard, 1999, P4).

Actor-network theory could be read as a way to tell stories about techno science by examining the way the boundaries between “nature” and “society” are put in place in practices named “science” and “technology” (Landström, 1998, p.6). In this approach, the emphasis then is laid on the way heterogeneous actors are connected with each other in certain networks stabilizing facts and artefacts.

In 1980s, Michel Callon, a French scholar, presented the concept of “translation”. He used “translation” to capture the logic of scientific activities. Callon thought that translation “referred to the possibility of signifying statements in another system of signification than that of the original expression” (Landström, 1998, p.7). In actor-network theory, the word network represents a series of transformations. Obviously, Callon’s notion of “translation” resembles “transformation” or we may say, network as used by Latour and Woolgar. The network pole of actor-network aims at summing up of interactions through various kinds of devices, inscriptions, forms and formulae, into a very local, practical and tiny locus (Law and Hassard, 1999, P4).

The moment any new idea arrives at a place where it was not known before, a process of translation begins, in which A, a translator, transforms B, a thing to translate by defining it, or even by explaining it to itself (Latour, 1986).

Whether A or B are human or non-human, collectives or individuals does not matter a lot. They can be a person, a machine, an idea or even a picture. What’s important is in the translation process, they both become equipped with new meanings, ideas and concepts. Such translation processes are going to be recounted in people’s daily interaction and practice with food waste.

If such a translation is achieved, then things like translators, ideas, actions and objects will become connected into one network which is perceived as an entity in its

own right, a single actor, indeed an actor-network (Callon, 1986; Czarniawska and Hernes, 2005; Clegg, 2006).

Ideas become translated into actions, and new ideas evoke a need for new actions (Czarniawska and Joerges, 1995; Carter and Mueller, 2006). But in the people-food waste interaction, new ideas are seldom generated since this practice system is not open. People seem to be reluctant to change the old behaviour modes, which may prevent new ideas.

It engages texts, technical objects, and skills required for translating, not to mention those texts, objects and skills that already existed in any given local context before this particular translation occurred. Thus the process of translation engages and affects both the translator and that which is translated, both the ideas and the inscriptions, and both the content and the form.

Translations are never final but constantly engendered. They continue in time, always changing, as they are subjected to constant negotiation, compromise, revolution and subversion. Even once they have become inscribed in texts and machines – embodied (Callon, 1991, p.143) – they can still enter into new interactions and reemerge changed.

### **3.3 Habitus and Fields**

Pierre Bourdieu, a French sociologist, used the methodological and theoretical concepts of habitus and field in order to make an epistemological break with the prominent objective-subjective antinomy of the social sciences.

Bourdieu believed that discourses, institutions, values, rules and regulations produced and transformed attitudes and practiced as ‘cultural fields’ (Webb, 2002, p.21). I contend that habitus and fields are the outcomes that Bourdieu tried to understand and explain the relationship between people’s practices and the contexts in which those practices occurred (Webb, 2002, p.21). They could only exist in relation to each other.

In the study of food waste, a cultural field is currently defined as a series of rituals, conventions, categories which produce and authorize certain activities. Though a field is constituted by the various social agents participating in it, a habitus, however, represents the transposition of objective structures of the field into the subjective structures of action and thought of the agent (Webb, 2002, p.26).

Bourdieu associated a number of further points such as knowledge, attitudes, or

practices with habitus (Webb, 2002, p.38). But in the case of food waste study, knowledge, ways of behaving, and moments of practice will be emphasized. Knowledge is constructed via habitus; the dispositions of our cultural trajectories exert on our ways of behaving are transposable across fields; the habitus of food waste is also constituted in moments of food waste practice which represent the specific context in everyday life. (Webb, 2002, p.38)

The relationship between habitus and field is a two-way relationship. By participating in the field, people incorporate into their habitus the proper know-how that will allow them to constitute the field. Habitus manifests the structures of the field, and the field mediates between habitus and practice (Webb, 2002, p.40).

This theory is going to be applied to explain that when people are in different cultural contexts, they definition of food waste will also change.

### **3.4 Uncleaness**

In the study, the concept of pollution and purity is adapted to understand people's attitudes to food waste, including the reason and standard that they judge food waste as unclean.

Mary Douglas, a distinguished international anthropologist, engages with the phenomenon in tribal religions of rules connected with defilement. First, the notion of some commentators such rules are hygienic in intention and second to the contrary notion that the rules are symbolic. Depicting both these explanations as simplistic, in order to reach a proper understanding, we need to confront the question of dirt and hygiene in our own culture.

Turning to our own notions, our association of dirt with bacteria should be discounted on account of it being a recent development. In our culture, dirt is essentially a question of matter out of place, of that which we find inappropriate in a given context. It is concomitant with the creation of order.

## **4 Analysis of Fieldwork Material**

As subjects, human beings, while participating in most current social activities, seem to have a power over all other objective things for the superficial phenomena that they are capable of rebuilding, redefining, creating and aborting etc. It is like people could easily decide destinies of others.

In the case of food waste, the factor is widely acknowledged that domestic food

waste is generated by people. In the whole process of food waste including waste being produced, separated, handled with and turned into any other product like new energy, food waste plays the role of a pure acceptor. It silently accepts all what people have done to it. But this might be just what we could see from a superficial level. As a matter of fact, starting from the aspect of microphysics, the power in the daily practices of domestic food waste and people is mobilized and unstable. Food waste, in specific social and cultural contexts, could be equal to human beings. In other words, we people are not a bit superior to it.

It is said that food emerged as a practical symbol and medium for articulating both the successes and failures of social ideals of progress, equality, and modernity. As part of food, we may say domestic food waste also represents a practical symbol and medium for articulating whether social progress, equality and modernity are successful or not.

There is a saying “We are what we eat” because food carries lots of social information of people. However, if one uses the information quality and quantity as measure methods, compared with food, food waste thus owns more social values. For instance, food could indicate what people eat whereas food waste could describe both what people eat and not eat. Food waste is able to offer more valuable information because food waste itself represents the outcome of what people have done to food. It is a carrier recording the human’s daily domestic behaviors, process, lifestyle, social status, religious belief etc. The types of foods citizens eat, the places where food is produced and consumed, and the social relationships can be fostered through food waste practices. Even the cultural values that can be inculcated through food waste behaviors.

Domestic food waste can be a revelation. It provides an honest account of the owners’ behaviors and reveals the tremendous impacts food has had on practically every aspect of daily life. It is a particularly conducive channel for enacting and understanding social change. Its materiality makes it a concrete and obvious marker of transformation. Food helps to transform external, anonymous social processes into intimate, immediate, and personal experiences. It may show the accurate result of this transforming process, such as whether the experiences are pleasant or not; whether people could accept this transformation; how people rebuild the transformation in their own way. Food makes the world accessible to ordinary people in ways that other things do not; food waste express people in diverse and flexible ways.



#### **4.1 Definition**

VA SYD wanted to convey equitable food waste recycling behaviors to their target inhabitants in Western Harbor. The general so-called food waste practices embody separation, classification and treatment by origin from the precise knowledge of its real definition. As a consequence, from the very beginning, it is necessary to give a comparatively accurate definition of food waste.

In the education printed materials sent to the local residents in Area Bo01, VA SYD did not concretely define what food waste was. Instead, they simply listed eleven classifications and implied the users to sort them. The categories were: Tea (also bags), Eggs (also shell), Coffee (also filter), Little Towels and Napkins, Bread and Cakes, Swill, Meat, Root, Vegetables, Fish, and Fruit.

I guess that VA SYD chose to use categories rather than definition because of two reasons. On the one hand, it was easy for users to conduct separation work by following exact the same categories; on the other hand, what could be called food waste is quite ambiguous since it is a contended subject and defined on a situational basis. This induces that we could not give out a standard food waste sample as a representative to illustrate the food waste rules, even not a dimension.

The content of food waste might be protean and multifarious materials whereas there might exist identical characters after removing the various external influential conditions such as cultural contexts. Fortunately, as food waste is one of people's daily struggles, it is easy to get abundant first hand fieldwork materials and then summarize the possible patterns of the food waste practices. A designed game and interviews both concerning conceptualizing food waste were carried out. The outcomes were then taken into comparison.

##### **4.1.1 Food Waste Game**

Shakespeare's creation of Hamlet leads to the saying, "There are a thousand Hamlets in a thousand people's eyes"; likewise, the interpretation of "food waste" is diversified in the eyes of different individuals. Even though it is difficult to give a comparatively stable and accurate concept of food waste, there is still possibility to find out certain homogenous characteristics. Noticing this, I insisted collecting different versions of food waste definitions for the purpose of summarizing some homogeneities of food waste from people's common senses.

To achieve this goal, a game was specially designed beforehand. The game

embodied three parts: definition, recognition and separation. First, all the participants were given a piece of paper and a pen. Thereafter, they were required to write down their answers to the question “What do you think is food waste?”

The five participants were coming from an international student corridor and all by chance were men. Four of them were Swedish university students: Sebastian (19 years old), Henrik (25 years old), Eric (20 years old), and Simon (20 years old); while one was a 26 years old student from India named Clark.

Since no meticulous definition of food waste has been settled until this point, the presumption of the first part was made in advance that participants would list as many material items as they could, which might take quite some time. That’s why all these participants were told that they would have all the time they needed.

In fact, however contrary to the presumption, all five participants gave short and abstract conclusive descriptions rather than voluminous concrete item lists. It took no more than two minutes:

“Leftovers, old food (expired), peels (potatoes, carrots).”—From Sebastian

“Unintended food products like byproducts during the manufacture of packaged food, like byproduct in production of beer, cold drinks.”—From Clark

“Anything you can compost.”—From Henrik

“Things are generated because of eating behaviors.”—From Eric

“Food waste is food that we are going to discard.”—From Simon

Then we came to the second part of the game: recognition. Eleven cards with words were presented in front of the participants. They were made on the basis of VAS (Visual Analogue Scale) printed information materials. These words were brief but with necessary details: Tea (also bags), Eggs (also shell), Coffee (also filter), Little Towels and Napkins, Bread and Cakes, Swill, Meat, Root, Vegetables, Fish, and Fruit.

In this stage, two of the five participants were involved, a Swedish student Sebastian and an Indian student Clark. The aim of this part was to see whether there was any difference of general food waste definition between two different cultural backgrounds.

The participants were supposed to eliminate what they did not regard as food waste. After being told the regulation, they began to read the cards and categorized them. Similar to the first part, they finished the game in approximately three minutes. The answers were surprisingly accordant. Not only did they agree that all the eleven categories were food waste but also pointed out which food waste they mainly

generated in daily life.

Among the eleven cards, the Swedish participant Sebastian then selected five and put them on his right side. The rest were left on the left side. The five were Meat, Fruits, Fish, Root and Vegetables, which, as his explained, hardly composed his main daily food waste.

“I eat everything of them”, the Swedish guy said, pointing at the five cards.

“Yes, me too”, supplied the Indian.

According to them, food waste from vegetables, root, fish, fruits and meat was avoidable. They almost ate all of the five kinds of things. Except these, the other eight categories were defined as unavoidable food waste.

“Little towels and napkins, egg shell, tea bags, and coffer filter could not be eaten, so they must be produced (the waste from napkins, shell, tea bags...is inevitable.)”, said Sebastian.

Comparing their performance in the second stage with their written definition of food waste, a difference appeared. Supplement questions were added:

(Q=question, A=answer)

Q: How do you understand things like napkins, towels as food waste?

A: Napkins and little towels are usually generated when we are eating. So they could also be defined as food waste.

Q: But how about bread and cakes? They are eatable.

A: Well, bread and cakes are usually sold in term of a big loaf. We could not decide how much we could buy. Usually, there is too much and finally it becomes expired.

The Swedish and the Indian still highly agreed with each other and this was never expected. Their reasons for categorizing some materials as for discarding or domestic food waste consisted of inedible things and redundant food derived from lacking accurate shopping prediction.

The game finally came to the last part: separation, representing the process that literal food waste definitions were eventually transformed into real life practices. Five people were divided into two groups. The first group was made up with four participants (Sebastian, Clark, Eric and Simon) while the second was only one group member (Henrik). They were required to separate food waste from other waste in a kitchen trash bin. The materials included a large trash bin filled with waste, a plastic bag and a pair of gloves.

The four member group started first. One of them, Clark, wore the yellow rubber gloves and the other three stood by. Looking into the trash bin, there was a small plastic box used to hold grapes, a paper box for pizza, bread, coffee filter, and egg shell etc.

A plastic bag was offered to contain selected food waste. None of them talked about individual roles and duties before and in the game. Responsibility was automatically divided since the one wore the gloves.

The glove man started sorting while the other stand-bys were instructing and advising. At first, they looked at the trash bin and said what could be food waste and what could not. Then separation began, with the accompanying advice, “The pizza paper box, yes” “The plastic box, for grapes, yes”...

Suddenly, a very normal plastic bag appeared. “It’s hard to say. Normally, I think it does not belong to food waste. But if the bag was used to hold things like meat, I would say it is also food waste.” said one standby participant. This material was finally thought of as food waste since it was in the kitchen and must have something to do with food.

Then they found that in the trash bin, there was more food waste collected than in any other container. Now they decided to change strategy. Sorting food waste out was taken place of removing other waste from the trash bin and keeping the food waste in it: a piece of newspaper was taken out while the other things such as the pizza paper box, the plastic box for grapes, and even a plastic paper used to pack eggs remained, not to mention eggs shells, coffee or bread etc.

All the group members joined in the experiment. The glove man was busy with taking material while the others were busy in observing and advising. They concentrated more on what could be food waste rather than whether the object at hand was food waste. For example, when one said that the paper pizza box was food waste because it was generated by eating, the others just accepted this solution and continued observing other waste in the bin.

When things came to the second group, they were much simpler. Since it was a one member group, the only participant Henrik wore the gloves and sorted. Like the first group, he just chose out what he thought was not food waste. The outcome, however, was totally different. Following his own definition as “all things we can compost”, the items he chose completely obeyed his own rules.

In the first writing definition part, participants’ swift responses implied that the

food waste concept was not temporarily generated in the game. Though it might be true that they formed the concrete literal explanation for the food waste in the game, these definitions actually had already been made long before conducting this game. What the participants did was just writing down their long-term thinking. Otherwise, they would not summarize food waste in that short time.

Mary Douglas, when talking about dirt, she says that “In chasing dirt, in papering, decorating, tidying we are not governed by anxiety to escape disease, but are positively re-ordering our environment, making it conform to an idea” (Douglas, 1991, p.22)

People keep re-constructing and re-ordering their life. They establish individual rule systems which are reverberated through the real practices, for their own environment. When facing the massive material world, a good way for them to arrange and handle with thousands of commodities and goods is division and categorization. The classification process is far more than mere elimination. For instance, when cutting off orange peels, people are not only removing them from food species, but also trying to find categories into which the orange peels can be categorized. If there are no such suit categories, then humans will establish a new one. All categories are just like boxes, and the aim of classify is to make everything in their own boxes.

By separating and sorting things into finer and finer classifications, they grasp and sharpen the corresponding concrete practices of each material bit by bit, which shows how humans organize environment and avoid disorder.

Therefore, food waste is also one of the disorder avoidance processes. People might never sit down and seriously think about the meaning of food waste, but their long-term accumulated individual experiences, such as a bottle of expired milk, fruit peels, or egg shell, gradually make them distinguish these things from the food category and form a new domestic food waste category. In other words, their definitions were reflections of their own abstract of concrete daily interactions. They might never realize that the definitions existed in their minds while strictly following the rules for food waste in everyday practices. Under the circumstances, participants' food waste definitions were driven by the aim of organizing environment and formed through accumulated daily experience while finally conceptualized in this game.

During the second recognition stage, the two students both pondered things like coffee grounds and egg shells as domestic food waste. These things were supposed to

be discarded on account of being inedible and unable for people to consume, which is widely acknowledged regardless of culture differences.

But in this section, the content of food waste gradually increased. Their former written definition focused more on food perspective, “Leftovers, old food (expired), peels (potatoes, carrots)” and “Unintended food products like byproducts during the manufacture of packaged food, like byproduct in production of beer and cold drinks”.

It was thought that participants’ impressions of food waste were schematically determined from the start of the game. Things like ‘leftovers’ or ‘byproducts’ were just what they selected from all the stimuli falling on their senses only those which interested them (Douglas, 1991, p.37). The literal definition given by them could be seen as a form of the stable food waste world they had constructed through long term diverse individual food waste experience and practices.

However, the building for the food waste definition never stopped. Coming into the recognition process, the cards became cues and the participants suddenly got extra materials like napkins, egg shells to classify. Once the new things were accepted as food waste by them, the food waste definition of the beginning was going to be modified. Then participants’ emphasis of defining food waste was transformed from food to whether the things were edible or not.

As the game continued and experiences piled up, a more complete food waste definition was built in the third part. It gave the participants confidence. Although redefinitions were being made throughout the game, the informants had more confidence. Uncomfortable facts which refuse to be fitted in (Douglas, 1991, p.37), they ignored or distorted so that such things did not disturb these established assumptions. To take an example, the informants were clear about the factor that paper box from pizza, or plastic box from fruits were supposed to be other waste rather than food waste. But they still classified them into food waste spaces for the established definition “generated while eating”.

In the third division, or we might say, in the real practice, the participants seemed to think less about the true concept but depend more on instant judgments. The emphasis transition again from ‘edible’ to ‘generated while eating’ implied that food waste was defined on an environmental basis as well.

From this experiment we learn that in a more precise way, food waste, as a matter of fact, is a complex algebra question which takes into account a wide array of variables in each context.

#### **4.1.2 Food Waste Vacuum System in Area Bo01, a Part of Western Harbor**

The food waste vacuum system is made up of inlets, pipelines, a vacuum and a refrigerated storage unit. It is specifically designed for collecting food waste from the households nearby. When Area Bo01 was constructed, great emphasis was made to making it easy for the residents to sort their waste. Food waste vacuum systems then were equipped into the area.

The local inhabitants are supposed to put all their food waste in paper bags offered by VA SYD. Then the paper bags containing food waste are thrown into conveniently located inlets and transported via pipelines by means of a vacuum to a refrigerated storage unit in the basement or outside the building. These storage units are then emptied using a sludge or vacuum truck. In the waste treatment plants, by combining different treat methods, the end products are a methane-rich biogas that can be used to fuel vehicles, and a liquid bio-fertilizer which retains the nutrients from the collected food waste.

What disturbed VA SYD in a long term was that some of the residents living in Area Bo01, some of them did not sort food waste in a correct way. For example, things like metal cans, wine glass bottles were always wrongly thrown into the food waste vacuum system chutes, which not only blocked the pipelines, but also led to the impurity of food waste. Food waste with other categorized materials such as plastics and metal could not be turned into biogas and fertilizers any more. Instead, they were finally burned or land-filled. This incorrect recycling behavior was essentially wasting the waste.

Per, 65 years old, worked in Lund University as a professor before retirement. We met in November, 2009, when I was finishing my internship and conducting food waste project for VA SYD. He was living in Area Bo01 with his wife. As one of the two chairmen in the building he lived in, Per was the link between the inhabitants in his building and the waste management company.

During the interview about the experience of using the food waste vacuum system, he seemed to be a little bit upset with people's misusing it.

...Unfortunately, I am a little bit astonished that even though people who are living here have received so much information from the company, we found that there are still people putting waste into the wrong place...

In the last two year, there were stops three times for our food waste

chute. The reasons were because people put wrong things into it. I noticed that some people even put bottles and plastic bags in to the food waste chutes. Last summer, my neighbors, an old couple, went abroad for a summer vacation. At ordinary times, they did very well in food waste sorting. However, when they were on holidays, their son moved into the apartment. Once, he threw lots of wine glass bottles into the food waste chute which blocked it. Thus, everyone had to pay high cost for cleaning up these unexpected items away from the chute.(Per)

VA SYD worried that the local residents' everlasting wrong separation would result in decreasing qualified food waste. They kept sending printed materials like leaflets and information sheets to educate the residents and rectify their sorting activities.

In all the eight interviews in Area Bo01, questions concerning the comments and opinions to the printed materials were brought out. According to the informants, the printed materials were highly evaluated for offering quite practical information like what kind of things could be put into the food waste paper bags.

Even under the information bomb, unexpected things continued occurring. Murti, a retired professor in his sixties from Lund University as well, shared the same feeling about blocked food waste chute with Per. Murti told me that when he initially moved into Area Bo01, he began to receive constant food waste sorting information from VA SYD. But the chute inevitably got blocked.

"...The thing is that people put in the wrong things and the chute got blocked. It happened twice. Once it was blocked by Christmas trees...That happened twice in five years."

The Christmas tree story sounded quite ridiculous. Albeit, the moment the other couple, Johan and Monica, heard about it, they somewhat showed approval to the ideas.

Johan was an engineer and Monica was a teacher. They were both in their forties and raised a little girl about 4 or 5 years old. They had an independent house in front of which the food waste chute was set. Inside their house, I saw lots of plants. Then the question came out "Where will you throw these plants?"



“I throw flowers in paper bags as well as apples, since if I were an animal, I would eat them. Plants are food for animals. We didn’t have much information about it. But when we check it on internet, we think it should be in that part”, Monica answered.

“Besides, as the printed materials tell us, tea bags can be thrown into the paper bags and food waste chutes, but how about the little metal pins on it?” Johan supplied.

Here, the local residents living in Area Bo01, together with domestic food waste generated by them, the paper bags they were using and the food waste vacuum systems composed a network with a food waste topic. The center core of this network was correct food waste separation.

From the interviews taken in Area Bo01, it was easy to find that local inhabitants’ emphasis of food waste definition was secretly transformed from ‘what food waste was’ into ‘what could be put into paper bags or food waste chutes’. The informants’ rule of food waste was more about the possibilities of putting things into paper bags and chutes rather than the things themselves.

It was a rather big surprise to me, according to the interviewer, that which changed the network were first and foremost food waste chutes and paper bags. These two events were translated as productive and important for food waste recycling behaviors. They took place by humans as the central actors and kept the residents thinking of a correct food waste definition, and thus restricted them from incorrect waste recycling.

As a result, paper bags and chutes on food waste vacuum systems became the measures of categorizing food waste. More precisely, they were the materializations of the conceptualized food waste classification and definition in people’s minds. Furthermore, both of them were considered as the visible boundaries of food waste contents which might not be realized by users. Things that could be thrown into paper bags and chutes were food waste; otherwise, they belonged to other categories.

The symbolic meaning of paper bags and food waste chutes drove people to change their self-oriented thinking mode into waste-oriented one. Considering what to throw into chutes instead of what food waste was, the residents gradually cared less about what they thought of as waste but more about what food waste could be. They even ignored the human identity they had, and began to alter the standing point as in case of making the presumption “if I were an animal”.

### 4.1.3 Other Definitions

Both the designed game observation and interviews manifested that diverse individual experiences bring out diverse definitions. Meanwhile, some already-known definition of food waste differs as well:

“Any food substance, raw or cooked, which is discarded, or intended or required to be discarded” (Wikipedia)

“An unwanted raw or cooked food discarded during or after food preparation that is no longer fit for consumption or desirable” (Jean-Baptiste, 2009, p.3)

First, there are the obvious wastes which involve the actual destruction or deterioration of food, i.e., absolute wastes. Second, there is waste in the relative sense, involving the use of food in ways which do not return a maximum quantity of balanced nutrients for human consumption. In general, food waste may thus be defined as a less than maximum use of nutrients for human consumption...food waste is the destruction or deterioration of food or the use of crops, livestock and livestock products in ways which return relatively little human food value. (Kling, 1943)

Among the published three definitions, food waste itself is in a very passive status. Words like “be discarded” “unwanted” “the destruction” convey such three messages: food waste origins come from food, or we can say food waste itself is part of food; strictly speaking, it is not generated but transformed from food; whether to be discarded or not is a standard of becoming waste, which is to say food waste is the pure fruit of human activities.

### 4.1.4 What is Food Waste?

The pattern of people’s food waste decisions mirrors human power over food waste. The informants’ discourses reflect their own knowledge about domestic food waste which could be considered as their power of modifying food waste. People keep reconstructing already known meanings of domestic food waste. The individual food waste definitions given out then differed a lot, according to who was speaking, his position of power, the institutional context in which the food waste happened to be situated. (Lewis, 2002, p.173)

The observations of the whole game process indicates that human beings as subjects, fully show their power to food waste because they are capable of giving out concrete definition of food waste, no matter if the definition is right or not. Meanwhile, Area Bo01 informants' discourses for food waste actually are the descriptions of their classification reflecting the way they organize and handle food waste. People's ability of making discourse enables them to be the subjects in the interaction with food waste, which also equips them the power of defining and remaking the meaning of food waste, and finally change the food waste practices.

The pattern of people's food waste decision making is constantly created. Food waste concept is in everlasting change. The participants in the game kept changing their original definition and adding more contexts to it. The practice helped them to form a complete concept. In the case of informants from Area Bo01, despite of the factor that they were constantly educated by the printed materials allocated by VA SYD, they still kept re-defining and re-constructing the contents of food waste. Food waste definition, from this point, is still far than stable and seems impossible to last eternally. Even during the real daily practices, residents kept remaking meanings for domestic food waste on the basis of already known information. All these extensive thinking and redefinition eventually led to the domestic food waste diversity in different households.

Food waste thus became a creative movement. The rules of definition are quite flexible. The individual understanding is both personal and diverse. The process of definition was a kind of classification and reconstruction. The informants keep redefining to reconstruct ordered relations. They related form to function, to make unity of experience.

The pattern of people's food waste decision making has nothing to do with *edibility or inedibility*. In the special context of participating in the recognition game about food waste, both the Swedes and the Indian pointed out things like napkins and egg shell were food waste because of inedibility.

However, when turning into the contemplation of pica<sup>2</sup>, rules of edible things totally alter. Pica means the craving and consumption of non-food substances. It is not a novel behaviour. Substances which are commonly craved by pica consumers for hundreds of years include ash, charcoal, coffee grounds, dried mortar, hair, ice, ground egg- or seashells etc. (MacClancy, Henry & Macbeth, 2009, p.18). To some pica consumers, coffee grounds or egg shells are just what they eat in everyday life.

They are not food waste.

On the contrary, the informants in Area Bo01 concentrated more on edibility which was approved by their thinking that plants were food to animals and should be categorized as food waste. Our ideas of food waste express symbolic systems and that the difference between food waste behaviour in one part of the world and another is only a matter of detail (Douglas, 1991, p.36).

The concurrence between the Swedish and the Indian in recognition and residents' agreement that things like glass and metal should not be thrown into the chutes demonstrates that food waste is a symbolic system. The different emphasis on edibility and inedibility between game participants and interviewed residents, together with different food waste concepts stem from their different individual taste and preferences in food waste.

An observation in a Lisbon restaurant on a Chinese girl and a German man shows us another example; that of personal difference. It was in a very typical Mediterranean style restaurant, with walls decorated by white and blue ceramic tiles, and gentle light which made the food look delicious. In the small but cozy space, with Fado (a music genre which can be traced from the 1820s in Portugal) playing, tourists from various countries gathered. They had to sit very closely so that the restaurant could serve more customers. A twenty four years old Chinese girl sat next to a German man in his sixties. Both of them ordered local cuisines: Grilled Cod and Potatoes. Potatoes were served with peels. The Chinese girl used her fork and knife to remove all the potato peels. Unlike her, the German man skipped this step and enjoyed his order. After finishing dinner, a waiter came and collected the plates. Seeing their two dishes, the German ate almost everything while the Chinese left all the potatoes skins.

In every culture, in every social group and in every different moment in time people can attribute the same meaning to different substances (MacClancy, Henry & Macbeth, 2009, p.43). That which is food waste for some is not food waste for others.

Another similar case was captured as well. It was my own experience and happened not long ago. During a Swedish seminar, one of the student supervisors took a yellow apple as food supplement in the break time. I, at that time, was sitting opposite to him. The apple was small and its size was approximately the same as a tennis ball. I didn't know where he got the apple from. When eating the apple, he was concentrating on his notes and comments to the students' thesis. It was uncertain to

say if the apple had been washed or not whereas he did not cut the apple peel but ate it. As he was biting, the apple was getting smaller and smaller.

After the outside of the apple had been consumed, then I was able to see the apple core. "It's time to throw it away", I silently told myself. Usually, the apple core is discarded. But our tutor didn't stop his eating pace until the seeds and less sweet part were consumed and finally just the little woodier section was left.

Taste and preferences in food waste are frequent examples of a cultural statement, as well as a most personal matter. Everyone asserts individual taste in food waste with an unquestionable right to do this, and the assertion inevitably contains a categorization of what is and what is not food waste (MacClancy, Henry & Macbeth, 2009, p.43).

The food waste rules here multiplied when facing more details. Difference was generated not because of individuals but more accurately, the two cultural contexts in which they were involved. They discriminated in ever finer and finer divisions, prescribing daily behaviour concerning individual experience and understanding.

Combining the fruitful empirical materials and the analysis on them, our idea of food waste is compounded of three things: daily interaction, individual experience and cultural context.

## **4.2 Value Consumption and Unhygienic Food Waste**

### **4.2.1 Value Consumption**

The notion of food waste is a kind of an omnibus compendium and it is a relative idea. Tea bags are not food waste in themselves, but after being used to make tea, they are going to be discarded; breads and cakes are not food waste in themselves, but after being expired and inedible, they are going to be discarded; the napkins are not food waste in themselves, but after being served to clean table and hands, they are going to be discarded; similarly, coffee grounds after making coffee; egg shells after making omelets; carrots skins after being peeled off; leftovers after dinners, and so on. In brief, food waste is the generated outcome by assumed value consumption. As long as their taken-for-granted supportive inner values are consumed, then they are turned into waste. As for food waste, the inner values they have originally are always supposed to realize eating-related practices.

It might be possible that too much attention is paid on the single and specific value of each commodity. Without regarding other possible values a thing may have,

people simply discard the things after consuming the specific values they want.

Taking one example of orange peels, they are thought to have the function of protecting the inside part from outside pollution. As long as an orange is consumed, the left peels are often thrown away since they have no protecting values.

To the fruit jam manufacturers, the orange peels, however, are one of the essential ingredients of making jam products. They become food after treatment and producing processes. When consumers are applying orange jam on breads, they consider little that what they are eating are the things they normally discard. What's more is in traditional Chinese medical science, orange peels can also be used to cure certain stomach illnesses, coughing, poor appetite and even help to relieve drunkenness.

The distinctions between the ways people handle the same food substances mainly stem from their emphasis on different assumed values. From this point of view, consuming food substances is essentially consuming presumptive values.

In the two cases of treating orange peels, people's cognition of the material values considerably predetermines their following conducts. That is to say the real practices are based and dependent on the personal value cognition. According to it, then individual long term practices and experiences gradually form the interaction patterns between people and materials. The former practices and experiences of discarding orange peels tell us the way to deal with them, which then become a rule for orange peels. Then in the later conducting course, this pattern will be applied into new orange peels practices and experiences over and over. In the network consisting of humans, pattern, practices, experiences and orange peels, the three actors—pattern, practices and experiences—get reinforced through repeated interaction between humans and orange peels. Meanwhile, the interaction and human behaviors are constantly produced by pattern, practices and experiences.

Thus, the pattern equals to a stable world people have constructed for themselves. In this world, rules and objects have recognizable shapes, are located in depth, and have permanence (Douglas, 1991, p.37). This explains why discarding orange peels is a solid behavior mode and taken for granted.

The different approaches adopted to deal with the same food substances represent the constant changing relationship between waste and value. Food waste thus keeps pacing up and down within the two extremes. Its status is not stable but flexible—in other words mean things could no longer become absolute. At one

moment orange peels are just discarded food substances while at the next moment they might be part of someone's breakfast. In brief, food waste is the generated outcome of specific value consumption.

#### **4.2.2 Gloves in the Game**

In the designed game observation, the yellow pair of gloves was more than just cleaning material. It was a symbolic code of practice, a symbol of responsibility.

Before the game, none of the participants were told the use of gloves. Using gloves was never compulsory—participants were not forced to apply the use of them. In fact, the gloves were not even officially introduced. They were barely presented on the table. Participants put on gloves during the separation process without being required.

In the four member group, it couldn't be more natural to the group members that wearing gloves meant undertaking the sorting duty. After Clark wore the gloves, he, together with the other three participants, took it for granted that he was supposed to conducting the recycling activity. At this moment, gloves were then transferred into a semiotic meaning—practice duty; in other words, they unconsciously reached an agreement that the one wearing gloves was obliged to separate the food waste. But how was this process generated?

People desired things in order to induce relative practices, for instance, buying new kitchen appliances in order to foster and in some cases enforce desired habits like those of making more 'home-made' food, being more 'efficient'; microwaves were expected to heat food; refrigerators were supposed to freeze food and keep them fresh. It represented more relative social practice rather than material. Therefore, this explains why the participant wearing gloves was supposed to sort food waste.

Things like microwaves, refrigerators, etc, were more apt to represent the social practice engendered by them rather than just materials themselves. The glove, here, became a kind of symbolic icon instead of a simple cleansing material.

The practice and function generated by materials was the center core of people's daily consumption. To people, practice is more important than commodity materiality. When being provided with a pair of gloves, what the participants really saw was the practice engendered by the gloves—wearing them while working with uncleanness. Moreover, the pair of gloves, to a certain extent, was a materialization form of isolation and protection, which shielded hands from directly touching food waste.

It could be easily found that there was a marvelous correspondence between gloves and washings: the avoidance of contagious disease and dirt, which revealed the factor that people usually related domestic food waste with something unclean. Namely, the real meaning behind people's wearing gloves was that they thought food waste was unhygienic.

With losing the assumed values, things become unhygienic and dirty as well. Douglas once acclaimed that in our own notions of dirt we were using a kind of omnibus compendium which included all the rejected elements of ordered systems. It is also a relative idea (Douglas, 1991, P36). Correspondingly, used tea bags are not dirty in themselves, but it is unhygienic to keep them; expired breads and cakes are not unhygienic in themselves, but it is unsafe to leave them in the refrigerator any longer; similarly, napkins are thought to be polluted; wet coffee grounds will make clothes dirty; egg shells smell disgusting; carrots skins would go bad and attract small insects; leftovers are polluted with one's saliva and mixed with other food; a mixture of the discarded things, and so on.

To sum up, the notion that food waste is unhygienic is mainly compounded of four things: pollution, deterioration, smell and disorder.

#### **4.2.3 Pollution**

Unhygienic food waste has two meanings: (1) food waste is generally considered as unhygienic and unclean; (2) some of the food waste is generated because of unhygienic reasons.

Part of domestic food waste represents people's avoidance to pollution. Edible food sometimes would be discarded because it is considered to be polluted. There are two kinds of pollution in the case of domestic food waste: dirt pollution and saliva pollution.

##### *1. Dirt Pollution*

Dirt pollution mainly happens on the accidental fallen food.

“When we were growing up in the childhood, the idea was constantly reinforced by the adults that fallen food could not be eaten because it had already been polluted by the unhygienic things on the surfaces”, Rebecca, a twenty four years old Chinese overseas student said.

However, there exists a Russian saying “Promptly picked up is not considered fallen”, which means that picking fallen food instantly could help to avoid pollution



and reduce the amount of food waste. Similar concepts are more and more introduced.

Today, a polite fiction<sup>3</sup> ‘five-second rule’ is quite popular regarding the eating of food that has fallen to the floor or ground. But, so far, the origin of five-second rule is still unknown. Its substance is that if food falls on the ground, it may be safely eaten as long as it is picked up within five seconds.

Furthermore, five second is not the only standard. There are at least five other variations on the rule. The time limit is under constant modification so that it is known variously as ‘three-second rule’, ‘seven-second rule’, ‘twenty-second rule’, ‘thirty-second rule’ and ‘five-minute rule’ etc.

Even in some variations, a person could pick up the food arbitrarily and extend the time limit that is based the actual amount of time required to retrieve the food. This also can vary based on the surface on which the food is dropped.

These rules seem effective in eliminating avoidable waste generated by fallen food. However, the rules have their own limitations. As long as we apply these rules into real practice, we will find the rules work in most cooked food. Compared with that, uncooked food is less influenced by them.

“If you drop a chocolate cookie on the floor, the five-second rule might work. You pick it up in five seconds and it may be hygienic enough to eat. But if an apple falls on the floor, it doesn’t matter you pick it up in five seconds or five minutes. After being washed by water, the apple is clean again.” Rebecca replied.

Rebecca’s answer showed the distinction between cooked and uncooked food as carriers of pollution. Cooked food seems to be liable to pass on pollution when in the comparison with uncooked food. This is almost the same in the case of whole and broken food like fruits and nuts. A watermelon, as long as it is whole, is not subject to defilement, but once it is broken or cut, it is then reliable to be a carrier to more pollution than as a whole.

Whether it could be washed or if it will be clean after washing is now becoming the main explanation to this distinction.

Rebecca gave more details about the fallen food, “an uncooked potato is easy to wash whereas it’s almost impossible to wash a cup of mashed potato with water”.

It is common to see people sell watermelons on the streets during summer time in China. Usually, the watermelons are assembled on the ground so that customers are able to pick up the fruits they choose to buy. Then they will bring them home, wash, clean them, and dry the water on the surface. After that process, they cut the

watermelon into pieces and start eating.

Sometimes, in order to show customers how good the watermelons are, sales men will take one or two as samples and cut them into two halves presented on a table. These samples are sold as well. Customers buy and bring them back, clean. Before eating, they will cut off a thin layer of the red flesh which is just exposed in the air. And throw it away.

They do this for the consideration that the exposed part of cut watermelon is still unhygienic regardless the factor that it has been washed.

The difficulty of cleaning cooked food or cut food like watermelons by washing demonstrates the aspect that water sometimes plays a role of disinfectant in daily practice. Nevertheless, as a matter of fact, water does not have a strong disinfectant ability. From a deeper thinking, besides cleaning, washing might be apt to express a kind of hygiene ritual. And food waste is just opposite this ritual.

In spite of the argument that whether picking up the fallen food in a very short time could avoid pollution or not, food waste is still unavoidably generated when falling to the floor in most occasions. This is because food is polluted and touches the possible dirt on the floor. People have to throw the polluted food for the consideration of contagious disease and dirt. This is dirt pollution.

## *2. Saliva Pollution*

The refusal to the fallen food shows that in our modern culture, the rules of uncleanness are more applied into the kitchen and bathroom and to municipal sanitation. "The less uncleanness was concerned with physical conditions and the more it signified a spiritual state of unworthiness, so much more decisively could be religion in question be recognized as advanced."(Douglas, 1991, p.11) In this way, refusing fallen food could be considered as a distinction between modern culture and ancient culture. The practices of our current advanced culture are solidly based on hygiene.

However, there still exists homogeneity between the two cultures regarding the domestic food waste problem. The avoidance of saliva pollution is easily found in both cultures. Being tracked back to certain traditional cultures, avoiding saliva pollution is deemed as a social and sometimes even ritual tradition.

Robertson Smith, the first and foremost a theologian and Old Testament scholar, once said "To distinguish between the holy and the unclean marks a real advance above savagery" (Douglas, 1991, p.30). Old rules of uncleanness pay attention to the

material circumstances of an act and judge it good or bad accordingly. Thus contact with corpses, blood or spittle may be held to transmit danger (Douglas, 1991, p.11)

ED. B. Harper, the author of *Journal of Asian Studies*, summarizes the relation between eating and pollution of Havik Brahmin:

The process of eating is potentially polluting, but the manner determines the amount of pollution. Saliva – even one's own – is extremely defiling. If a Brahmin inadvertently touches his fingers to his lips, he should bathe or at least change his clothes. Also, saliva pollution can be transmitted through some material substances. These two beliefs have led to the practice of drinking water by pouring it into the mouth instead of putting the lips on the edge of the cup, and of smoking cigarettes...through the hand so that they never directly touch the lips. (Harper, 1964, p.156)

Another case of avoiding saliva pollution comes from the Goorgs (Srinivas). They have a quite famous little myth somewhat concerning about spittle as well.

A Goddess in every trial of strength or cunning defeated her two brothers. Since future precedence depended on the outcome of these contests, they decided to defeat her by a ruse. She was tricked into taking out of her mouth the betel that she was chewing to see if it was redder than theirs and into popping it back again. Once she had realized she had eaten something which had once been in her own mouth and was therefore defiled by saliva, though she wept and bewailed she accepted the full justice of her downfall. (Douglas, 1991, p.124)

The two cases tell the ancient avoidance of saliva pollution despite the factor that the avoidance has more ritual meanings than mere social practice. It is not sure whether such ritual saliva pollution avoidance exists in current advanced religions. But if starting from the social practice level, we could discover avoidance of saliva everywhere in current society.

Treatments to leftovers manifest modern resistance to saliva pollution. Leftovers are usually defined as the uneaten edible remains of a meal after the dinner is over, and everyone has finished eating. Concerning the saliva topic, the definition is somewhat ambiguous so that it is necessary to narrow the accurate explanation.

First, inedible food scraps (such as bones or the skins of some vegetables and fruits) are not regarded as leftovers. Any remaining edible portions constitute the leftovers.

Second, home cooking leftovers saved to be eaten later participate in constituting the domestic leftovers. This is facilitated by being in a private environment, with food preserving facilities such as airtight containers and refrigeration close at hand. But home cooking leftovers are not going to be discussed.

Leftovers in this specific context, refer to as unfinished individual food including the remaining cake after someone's eating, the rest tomatoes in someone's plates after a dinner, and even a bitten beef steak etc.

Generally, we do not eat the leftovers since the food is polluted by others' saliva. The care for saliva pollution essentially springs from the notion that saliva will transmit bacterium. Although the notion of saliva changes with changes in our state of knowledge, people keep escaping from being polluted by it. But as for the conventional side of saliva-avoidance, these rules can be set aside for the sake of familial affection.

In October 2009, a Chinese website investigated on people's attitudes to families' leftovers. A random investigation was conducted among twenty people constituted by ten parents and ten children. The parents, five mothers and five fathers, were between 25 and 60 years old; the children were between 4 and 25 years old.

The ten parents were questioned "whether you are willing to eat your children's leftovers"; meanwhile, the ten children were questioned "whether you are willing to eat your parents' leftovers".

All five mothers gave instant and positive answers without any hesitation; four of the five fathers definitely expressed that they were willing to do that while the other one said that usually he did not do that.

The answers from the children were totally different. Nine of the ten told that they never eat the leftovers from their parents. The only exception was a child who could only accept leftovers from the mom.

Furthermore, the website held another online vote activity. 695 Chinese internet

users were involved in. The outcome of the online survey was as follows:

As a child, will you eat your parents' leftovers?		
Option	Proportion	Ticket
Always	17.9%	125
Occasionally	26.0%	181
Never	55.9%	389
As a parent, will you eat your children's leftovers?		
Option	Proportion	Ticket
Always	55.8%	388
Occasionally	32.5%	226
Never	11.6%	81

(Figure 1, <http://city-hzrb.hangzhou.com.cn/system/2009/10/23/010217884.shtml>)

These statistics suggest that parents are usually more apt to eat their children's leftovers. That is to say the saliva pollution avoidance rules change with people's relationship, especially familial affection.

In certain very old Chinese opinions, parents' help to finish their children's leftovers is even considered as a method of accumulating good luck for the children. It could be widely found in ancient Chinese history and literatures that every generation are educated not to waste any food, which is an educational way showing Chinese respect to food. If going a step further, we can see the food waste, to a certain extent, becomes a kind of religious ritual.

However, the rule of parents' eating leftovers is tightly limited. Eating children's leftovers does not mean they don't mind saliva pollution. In the extremely ordinary understanding of saliva, Chinese people express an ambivalent conflict. On one hand, they think their own saliva, similar or even better than water, has a disinfection function; on the other hand, they also hold the idea that others' saliva might transit diseases<sup>4</sup>.

Besides familial affection, these rules can also be set aside for the sake of friendship or romantic affection. During the both participant and non-participant observations in Café Lundagård, a local café in Lund, customers got used to exchanging food and drink.

It was 4 p.m. in a Tuesday afternoon, there were seventeen customers in the café. A big family including the grandparents, parents and three boys aged from

approximately 5 to 12 years old were having a family afternoon tea and a fun chat. Seated at the left side of the big family were three Swedish girls. They ordered three different desserts, a piece of blueberry cheesecake, a piece of mango mousse cake with three colored layers and an apple pie. After putting the dishes on the table and taking their own seats, they began to use the dessert spoon. They tasted the one served in front of themselves, and then exchanged the comments to their cakes. Next, the three girls tried the other two cakes.

When I did this observation, my friend was with me. We also shared the orders with each other in the same way. But the coffee I had was so disappointing that I couldn't finish half of the cup. Surprisingly, before leaving, my friend then bottomed the coffee up "I think it's tasty". Then I pointed another cup of the same coffee on our right side, which was left by others and joked "Why not finish that one?" "Are you kidding? I don't know the one who drank that. The coffee is from stranger. How unhygienic is that!"

Stranger's leftovers are usually discarded as food waste while leftovers from the one you have a close relationship with are edible. For the most part, the superficial care for hygiene is consideration for how close the relationship is.

The eating leftovers behaviour that usually results in saliva transmission is sometimes intentional in order to show deference and intimacy; by doing that which under other circumstances would be unhygienic, an individual expresses his affection and friendliness. As a consequence, food waste from leftovers is a relationship dimension that could help to test the degree of relationship.

#### **4.2.4 Smell, Deterioration, and Disorder**

From the ritual aspect, smell is used as a method of purity and cleaning. "The importance of incense is not that it symbolizes the ascending smoke of sacrifice, but it is a means of making tolerable the smells of unwashed humanity."(Douglas, 1991, p.30)

On the opposite, bad smell is always linked with unhygienic, dirt and deterioration. One of the inhabitants from Area Bo01, Joanna, a 42 years old female construction designer, had the experience of forgetting to throw her food waste. Joanna was a single mother bearing a little girl at kindergarten age on her own. In the summer of 2008, she had a business trip for a whole week. Before leaving home, she sent her daughter to her relatives but forgot to throw away the food waste in a paper

bag. After finishing the business and she had returned home seven days later, the house was filled with strong smell of un-thrown food waste which made them disgusted quite a lot.

Heavy organic food waste is most inclined to deterioration. Accompanying with that, unpleasant odors, dirty leaks, bacteria and different insects emerge all together. The mixture of various food wastes brings dirty and unhygienic impressions not because of the things themselves but the disorderly pictures they compose. “Dirt is essentially disorder. There is no such thing as absolute dirt: it exists in the eye of the beholder...Dirt offends against order.” (Douglas, 1991, p.2)

### **4.3 Food Waste Structures X**

Power is exercised only in the dynamic interactions of people and food waste and more like an action mode. The way people define and generate food waste fully expresses their action mode to it. People are capable of modifying, defining, throwing the food substance which is usually looked as a form of power. However, the power is never unidirectional but reflexive. The reflexivity of food waste endows itself with power over people. Food waste, then, plays an important role of structuring people’s daily life.

#### **4.3.1 Food Waste Structures Identity**

The definitions and boundaries of ‘food waste’ are basic subjects in this study. Human beings connect food waste constraints and human identities. By accepting certain parts of items as ‘food’ and rejecting ‘food waste’, and also by culturally distinguishing food waste and processing them in structured and patterned ways, human beings define what it means to be a particular kind of human being: one who belongs to a particular community or identifies with a particular social class or way of life.

In the Food Waste Project in Area Bo01, the informants were required to evaluate the food recycling system—a chute in which food waste was discarded. The cultural limits to what human beings will put into the chute and the ways how they interact with the food waste separation system establish their cultural identities.

##### *1. Cultural Identity*

There is a joke that is widely spread throughout the overseas student forum. It somewhat reflect the “true” life of the Chinese in America.

Since the early 1970s, the number of overseas students as a percentage of all students in the world has increased somewhat: from 2.0 percent in 1978 to 2.3 percent in 1986. In 1980s, a going-abroad trend gradually emerged. Being encouraged by the Reform and Opening-up policy, thousands of young Chinese people chose to go abroad to work and study.

At that time, the United States was the first choice of most overseas students and workers. As a majority of the pioneers, the Chinese were flocking to the local neighborhoods. A problem arose. Local American residents successively found that more and more pet dogs in their neighborhoods refused to eat the dog food. After a period of observation, the reason was finally revealed.

Braised pork in brown sauce is a very typical Chinese meal that almost every family cooks. The look, the smell, and the taste of this meal is extremely attractive. Also being allured by the sweet smell, those dogs then tried to steal food from the Chinese households' trash bins.

The result was surely predictable. After tasting the Chinese braised pork in brown sauce, those smart dogs could not endure the poor dog food. It was a great contrast. Consequently, when the local American residents discovered that their dogs showed less interest to the dog food, they knew now they had new Chinese neighbors.

The story tells us that cultural identity is closely related to food manners, and in this case Chinese identity was revealed by the dogs exploring the trash bins.

## 2. *Group Identity*

Before conducting fieldwork tightly connected with this thesis, observations were already done in the course *Introduction to Applied Cultural Analysis*. Some of those observations turned out to be useful also for the thesis. In this book, a research Mine Sylow once did a project which applied cultural analysis an approach in the development of healthy fast food. In that study, the author mainly described how a cultural analysis approach was successfully used as a part of the development of new and healthier fast food choices for children and adolescents at sports centers (SyLOW, 2008).

To accomplish the purpose, an observation of eating habits at a sports center was conducted which also pointed out the important connection between food and group identity.

SyLOW used the food at the sports centers as a tool in identity work, especially by the adolescents. "The concern about 'what and who am I?' were questions in which



choices of food could be a part of the symbolic answer” (SyLOW, 2008). In the observation, SyLOW found that at the sports centers, the children and adolescents who bought food like “toasted sandwiches, French fries and French hotdogs were mainly the 13-17 year-olds” (SyLOW, 2008). Even though the 10-12 year-olds said that they would also love to buy French fries, they had to be home to have dinner.

One reason might be that the 10-12 years-olds could not afford those foods. However, other reason might also be an option for the condition. ““Even if we could afford French fries’, say the 11-12 year-old girls, ‘we still wouldn’t buy them, because they are too filling. Our parents get cross if we sit and pick at our dinners’” (SyLOW, 2008).

Compared with the 10-12 years-olds, the 13-17 year-olds, then had both enough money and independence to buy hot food on occasion around dinnertime (SyLOW, 2008). As a consequence, in this way, the hot food which was available at the sports centers differentiated the 10-12 years-old children from the elder adolescents.

In SyLOW’s observation, it was discovered that both the two groups ate sweets, but, for the most part, only the adolescents ate the hot food on daily basis. Hot food offered by the sports centers thus “became a symbol of autonomy” (SyLOW, 2008). The adolescents could demonstrate independence from their parents through their food choices; “children under 13 have to eat dinner at home, but adolescents follow their own mealtime rules” (SyLOW, 2008).

Erving Goffman, a North American sociologist, in his book *The Presentation of Self in Everyday Life*, thinks that “there are no items of clothing or of food or of other practical use which we do not seize upon as theatrical props to dramatize the way we want to present our roles and the scene we are playing in” (Goffman, 1959, p.15). The things we do are significant and nothing is without its conscious symbolic load.

Goffman uses the imagery of theatre to describe people’s social practices in everyday life. On this drama stage, details, materials and interactions are portrayed to strengthen personal identity. Then food, constituting one of the most frequent expressions of social activity, contributes to characterizing the group identity.

### 3. Societal Identity

In Area Bo01, the concern about “what and who am I” and “What is my family” were questions in which domestic food waste could be a part of the symbolic answer.

By observing the informants’ kitchen waste spaces, the domestic food waste could generally tell the basic condition of the households. The refuse bin of

vegetarians did not contain things like fish, pork, and shrimp shells while you could easily find these in others' refuse bins. When food waste were combined with other kinds of waste like metals or plastics, it was more likely that it came from a single adult family. The fieldwork data showed that a family with at least two adults usually did very good food waste separation while single adult families did not.

Despite of its nutritional role in sustaining health and well being, food waste is also a means to express one's social identity. The domestic food waste necessarily implicates consumption in the symbolic positioning of people and their everyday lifestyle and practices.

Domestic food waste doesn't merely reflect a person's lifestyle and practices, but actively and actually generates it. That is, everyday practices are not only socially positioned through their variant levels of education, income and occupation. They are also constructions of particular daily practices, practices which produce and reproduce their position in the cultural hierarchy.

For example, different types of vegetables reinforce different social positions of consumers. A man in a suit may throw away an expensive beef steak which is left after dinner. By contrast, an unskilled student might just throw away considerable amounts of cheap carrots. The respective food waste practices reinforce the social position of people, functioning as symbolic indicators of occupation, age and income levels.

Domestic food waste has a very tight connection with consumption. Food waste disposal is a part of the consumption process and it could also be seen as a necessary issue integral to the whole process of viewing consuming as a social activity. Kevin Hetherington once suggested that "studying consumption makes no sense unless we consider the role of disposing as an integral part of the totality of what consumer activity is all about" (Hetherington, 2004).

Pierre Bourdieu's theory of consumption was quite closely related to his theory of cultural reproduction. He linked consumption with social class, noting, for example, that there were strong correlations between social status and such things as housing styles, musical tastes and food preferences. He saw consumption as a material process rooted in an ideal practice rooted in symbols (Bourdieu & Passeron, 1990, p71-78). Based on this, food waste is more than just a differentiation of incomes or the power of discretionary spending. It is more than just an outline of dominant and subordinate social players. In other words, domestic food waste plays a role of symbolic value

carrier in everyday life.

In fact, symbolic value, reflected in the domestic food waste, attaches to notions of cultural distinction and necessarily produces a cultural economy in which lifestyle becomes the fundamental currency. In this sense, two groups may have the same income, but one has a superior knowledge and lifestyle concept.

An individual consumer may now create his or her identity through attachment to broadly available and ever-proliferating products and daily practices. The fluidity and accessibility of capitalist products make them available as raw materials for the construction of new and ever-replenishing identities. “Who am I” may now be answered by what I listen to, how I dress, or what I might eat. An identity, in this way, thus becomes something that can be manipulated and shifted according to food waste practices. Just as there are infinite practices, so there are infinite opportunities for identity creation.

#### **4.3.2 Food Waste Structures Kitchen Design**

Mentioning food waste, as a direct reaction, we will immediately relate it with kitchens for the simple reason that food waste is usually generated in kitchens. At least, in most households it is the case. But the kitchen now is no longer merely a back region which is devoted to the preparation of food. Instead, it is frequently promoted and represented as a place of sociability that “somewhere you want to spend time, where you feel comfortable, where you can simply live your life” (Good Housekeeping, 2002, p.2). Starting from this point, food waste then is also a part of people’s current sociability.

Derived from the latest social behavior study, it is said that people buy consumer goods simply because they need them is more common in everyday life rather than in contemporary theories of consumption and material culture. The notion well explains that commodities are consumed not for their own sake but for what they make possible, which emphasizes the relationship between people, materials and practice.

The popularity of the traditional cupboard is gradually decreasing while relatively new equipments such as freezer and microwave have become a must in nowadays modern kitchens. Tightly along with societal developments, the kitchen keeps constantly renewing and upgrading. To a certain extent, endless new equipments in kitchen somewhat reflect a kind of ideological trend.

The ethnographic household observations in Malmo Western Harbor offered an

overview of eight fairly new and modern kitchens. The furniture and kitchen appliances were in pretty good condition since even one of the oldest kitchens among them had a very brief history of no more than nine years.

These kitchens have no distinguished external differences when compared with others except the space underneath the sinks. Opening the cabinets beneath the sinks, seeing the inside space, one could see the space was divided into several parts and each part had its own function like paper waste collection, glass collection and metal collection etc. Then a dozen un-used paper bags and an in-use paper bag holding food waste in a plastic basket, emerged into my eyes.

It was a little surprising to see something beyond what I expected. Before seeing the real cabinet inside, I might have had an unconscious presumption of what I would see. This understanding of “what I might see” was based on what I had already seen. I foresaw to see some kind of waste and relative waste separation but the paper bags specific for food waste, however, was not expected.

The paper bags were “new” elements in the kitchen. What is the meaning of “new”? There are three interpretations of new: new as freshly created, new as improved or innovative and new as unfamiliar or novel (Shove, E., 2007, p.22-25). Were these paper bags freshly created? Some were already being used. Were paper bags improved or innovative? I am afraid they were hardly any different than the traditional ones. Were they unfamiliar or novel? No, they couldn't be more familiar.

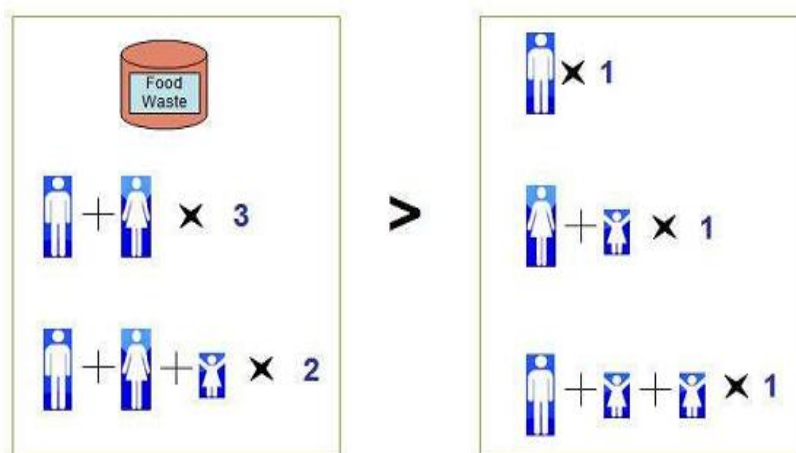
The paper bags were new not because of their own sake but for what they represent and helped to do. ‘Practices, rather than individual desires...create wants’ (Warde 2005, p.137), which places the burden of explanation on changing practices rather than on individual consumers or on the symbolic qualities of what they buy. In other words, the aim of acquiring new things is to accomplish new thing-based practices.

Being positioned in a waste collection space and used to contain food waste, which was not expected, the paper bags thus represent a new function, a new practice and a new societal activity.

### **4.3.3 Food Waste Structures Familial Duty**

Despite the factors that all the interviewees gave positive opinions to both the food waste separation system and the campaign, what they did and how they actually did it differed a lot from what they said. It was found that family structures had a

subtle relationship with the food waste separation behavior.



(Figure 2: Non single-adult families did better food waste separation than others.)

In the eight households, two were retired old couples; two were working parents with children; two were single parent with children; one was a working couple; and the last was a single man.

According to the observation of the photos, two single parent families and the single man did less separation than the other five families. The three single-adult families did not even have a food waste separation space in the kitchens. There seemed to have no space designed for the food separation. This might tell us that in a family, children were less responsible for the waste separation work; and non single-adult families might do better food waste separation than others.

Besides, during the fieldwork, I noticed that the parents automatically took the responsibility of educating their children to sort food waste in a correct way. The first time I met Joanna, she was on her way to the refuse room with her daughter, carrying the food waste paper bags. In the later interview, she felt it was her duty to teach her daughter the correct separation, even though such kind of recycling education was available in the kindergartens.

#### 4.3.4 Food Waste Structures Daily Routine

My informants, Johan and Monica, their family now have become the representative to promote the waste management system in Malmo in Shanghai EXPO 2010. Monica introduced her own experience of the food waste separation to the audience:

When we clear the table after dinner we put the dirty dishes into the

dishwasher and put the leftover food into the food waste bag. A couple of times each week I take the food waste bag with me when I cycle to work in the morning and put it into the food waste collection container. It is easy to do this. It has become part of the routine of daily life. (Monica)

Food waste, in the form of relative practices engendered by them, rebuilds the daily life structure and routine for Monica's family. It is not only a physical routine but also a social practice routine. In this sense, food waste owns the power—the ability of constructing people's life.

#### **4.4 Saying, Having and Doing**

The interaction between human and food waste mainly focus on their food waste separation behaviors. To construct an attitude, people need to gather information from other people, media, and direct experience. Fazio and Zanna (Heberlein, 1989) found that attitudes based on direct experience are stronger predictors of behavior than attitudes formed without such experience. Furthermore, attitudes have been explained by other attitudinal variables (Oskamp, 1991) and personal values (Bagozzi and Dabholkar, 1992). In conclusion, Pinsky and Andersson claimed that “attitudes were formed in an ongoing process; before a behavior is performed; and after behavior is carried out” (Pinsky & Andersson, 1993).

In this sense, recycling behavior initiated through an educational campaign may strengthen attitudes, which in turn strengthen the recycling behaviors (Vining & Ebreo, 1989). According to Hopper and Nielsen (1991), it seems that behavior change might occur without the attitudes being transformed. In a comparison study of recyclers and non-recyclers, Vining and Ebreo (1992) concluded that the differences found in terms of attitudes were a matter of magnitude of agreement rather than contrasting fundamental values. It has been claimed that “a favorable attitude towards the behavior is a necessary but insufficient condition to make an individual act in accordance” (Pinsky & Andersson, 1993).

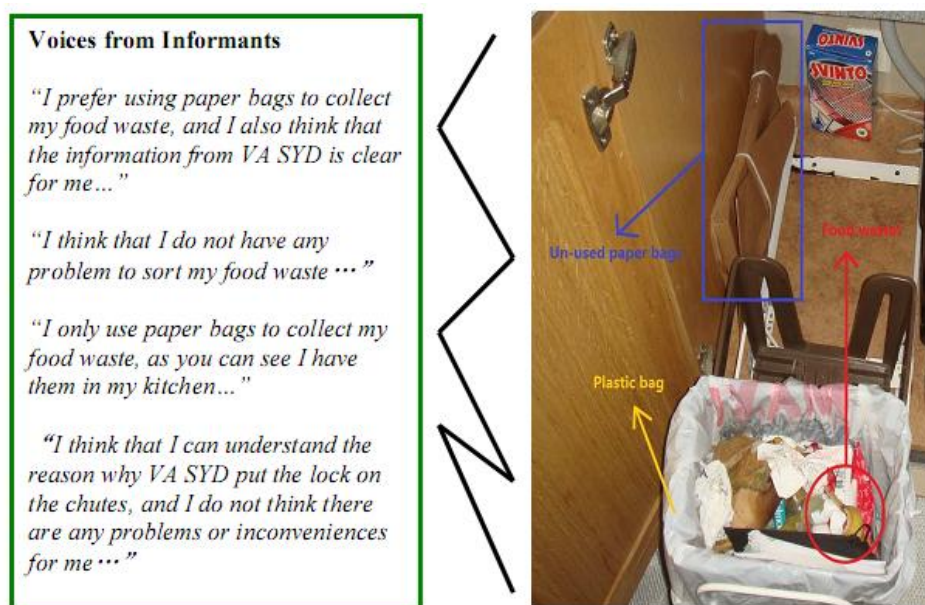
According to the interviews with eight different families, almost all the residents had the awareness and will to sort the food waste in their daily life. It seems that there is very limited room for improving people's attitudes toward food waste separation.

However, from the non-participant observation at different families, it was realized that “people’s attitudes towards performing the behavior are not as strong and positive as our attitudes towards the idea of food waste separation” (Pinsky & Andersson, 1993). In this sense, the gap exists between what people say and what people actually do in reality.

Convenience is one of the factors that may mediate the relationship between behavior and attitude. Even though almost all the interviewees said that they followed the rules to separate their food waste, it was found through the observation in their kitchens that not all of them actually separated the food waste during their daily life. For instance, the photo was taken in one of the interviewee’s house, which presented how he collected waste at home.

Lars was a 27 years old business system consultant. He was single and lived in an apartment in Area Bo01. Besides, as a building chairman, he was also in charge of certain daily management work, including introduction the building operation systems for the new comers. Of course, food waste system was one of the parts.

Although Lars knew plenty of knowledge on the food waste separation and also showed a strong commitment to sort food waste during his daily life, it seemed that his behavior of collecting food waste had not been changed as fast as his thoughts and attitude: paper bags were being used in kitchen spaces; food waste was contained in a plastic bag together with other waste.



(Figure 3: The gap between what people say and what they do)

New things engender new social practices. As a consequence, to accomplish the new certain new social practices, new appliances are expected and designed. In order to distinct domestic food waste from other refuse, paper bags specially designed to hold food waste now occupy some part of the kitchen spaces in Area Bo01. Compared with the appliances, changes in people social practices are even more influential.

There were mainly two patterns of refuse to action relationships in domestic food waste daily interaction.

*1. No food waste, no changes*

During the locks-on-chutes campaign, VA SYD sent their representatives directly to the local residents in Area Bo01. This knocking-door activity aimed at delivering printed materials to the residents and persuading them to recycle in a correct way.

Hearing the representatives' brief self introduction, some residents immediately responded as "We don't need this kind of information since we eat everything. There is no food waste in my home". Then they refused the paper bags offered to contain food waste. One assumption is they did not have a clear concept of food waste, as well as food waste practice; another is they might probably generate no food waste. In this case, they do not need relative appliances like paper bags to achieve the practices.

*2. Daily waste, daily practices*

The emergence of domestic food waste is inevitably inseparable with relative practices generated by it. Accompanying the waste, the concept food waste separation is now officially introduced into everyday life.

New element acquires new practices and new practices which may change the daily life routines. More abstractly, product developments and design innovations have implications for what people expect in the first place and for how they then conceptualize what is ideal, normal and necessary.

#### **4.5 Food Waste and Neighborhood Reputation: A Round Trip**

It is widely acknowledged that a neighborhood is not only a centre of daily life for the residents, but also plays an important role in a wide variety of social outcomes for residents. Living in Area Bo01 has been now proved to have an impact on the residents' individual waste separation behaviors.

##### **4.5.1 Neighborhood Reputation**

There is a saying which says "you are what you eat". However, here, we would



like to say that “you are where you live”. People who have some choice on the housing market will select a neighborhood that meets their aspirations. A neighborhood, like a mirror, reflects the preferences and life style the residents choose. It thus becomes a representation factor. Or we could just say “You are what your neighborhood is”.

Every neighborhood has its own reputation. The definition of reputation is considered as “the beliefs or opinions that are generally held about someone or something” or “a widespread belief that someone or something has a particular characteristic”. Consequently, neighborhoods are no exception to the labeling process: people attach a reputation to most neighborhoods. Combined with the concept of ecological sustainability, Area Bo01 is therefore defined as a sustainable district with a high level of quality in terms of its architecture, public environment and material. Besides that, the advanced food waste separation idea is widely spread out the whole block. Based on it, this spatial area thus acts as a symbol for advanced food waste practices.

In other words, the Area Bo01 has a reputation related to the concepts as “green”, “ecological”, “environment friendly”, and “food waste separation”.

The reputation consists of simplified images of neighborhoods expressed as sharp boundaries in an exaggerated difference. It highlights the features and unique points of Area Bo01. Even in the Malmo tourist information leaflet, the Western Harbor is recommended as a sightseeing spot representing an ecological product of the city.

The reputation helped attract certain families to join in. Tadic, a 39 year old Swedish Public Relationship Consultant, living with her boyfriend and their only baby, told us that she chose to move into Area Bo01 somewhat because it was announced as an eco-area. Before moving there, she had already worked for Malmo city for a certain time and got to know about the food waste separation information. From then on, she and her family started to sort food waste.

The same things happened in other residents as well. More than half of the interviewees expressed that they had no food waste separation experience until moving into Bo01. This illustrates how neighborhood reputation changes their residents’ lifestyle and daily behaviors.

Now the neighborhood reputation refers to both the neighborhood status level

and the individual status level. The residents' individual status were derived from the (reputation of the) Area Bo01. In that way, the neighborhood reputation is an indicator of a resident's individual status and a reflection and symbol of his/her preferences.

#### **4.5.2 Endogenous Effects**

Neighborhood effects will also influence residents' separation behaviors. Endogenous effects, one of the neighborhood effects, played an important role during the process.

Endogenous effects arise when the behavior of neighborhood residents has a direct influence on other residents. Joanna claimed that she didn't separate food waste at the beginning of moving into Bo01. As time went by, she noticed that most of her neighbors took part in the food waste separation, which led her to think about sorting. Realizing this recycling actually was good and easy, she gradually followed her neighbors to separate the food waste.

Informants also mentioned the chairmen of the buildings where they lived. Being seen as representatives of the residents, chairmen were not only the information resources but also models and guiders of their communities. When new comers entered the Area Bo01, the chairmen provided them with relative food waste separation information and guided them what were expected to do. Moreover, sometimes chairmen also afforded the duties of ensuring the residents correctly recycled.

In a word, the relationship between neighborhood reputation and food waste activities is a round trip. The neighborhood reputation of Area Bo01 actually promotes residents' food waste practices; in the meantime, the relative food waste interaction help to reinforce and strengthen the reputation.

#### **4.6 Food waste=cultural rejection?**

Domestic food waste practice is a meaningful activity. It is assumed that people understand their relation to things in the world-their needs-in terms of projects and goals, social conventions and norms, concepts of what being a human or human society involves. But how have the meaningful nature of domestic food waste practice in general and daily culture in particular been conceptualized?

When eating, you do not eat simply so as to reproduce yourself physically. On the contrary, you probably do not eat many creatures such as dogs or cats. There are

some fuzzy categories, such as fresh orange peels, which are problematic for the Asians but not, say, for some westerners (like make the peels with other material into smoothie). The activity of consuming food does not involve you just in physical reproduction, but also in cultural reproduction. By selecting and choosing what to eat you reproduce your ethnicity and identity.

All the domestic food waste practices are cultural because they involve meanings: in order to make an object to be 'food' it must undergo a cultural sifting of the 'edible' from the 'inedible'. As is culturally specific, domestic food waste practices are in relation to specific meaningful ways of life: no one throws 'food'; but he or she may throw banana skins, egg shell or beef.

We may produce and reproduce cultures, social relations and indeed society through culturally specific forms of food rejection.

## **5 Result and Suggestion**

The essence of studying the power relationship between people and food waste is studying the powers they have over one and other. But relationship is the basis of the whole study since without it, powers do not exist. That also explains the reason of putting emphasis on the human-food waste interactions and practices.

There is no doubt that the power relationship is interactive. However, the way food waste influences the daily life is more gentle and unrealized. It has greater impacts on human beings than people have on them. As a semiotic icon under different contexts, food waste could be used as a reveal tool to understand people's behaviour pattern. Here, I do not fully agree with Foucault. People's power stems from our subjectivity and aptitudes inherent in the body; whereas the power of food waste might be a reflection of the people's.

Suggestion for VA SYD:

What we know little about, however, is the role that disposal plays within the consumer's activity. As usual, disposal is synonymous with forms of waste (Hetherington, 2004), which make people misunderstand the real meaning of food waste separation behaviours. From the former experience, people take for granted that disposal is the end of the processes of food consumption and miss the sense that food waste separation is a continual practice of engaging with making and holding things in notion of return (Hetherington, 2004). They see the food waste chutes as the final destination of the food waste while ignoring the recursivity of food waste.

The way people treats food waste solely as a category of waste does not grasp food waste dynamic and performative role within daily practice. Residents might consider food waste chute as a final singular act of closure, or “the last act in a sequence that runs from production to consumption to disposal” (Hetherington, 2004), and ignores the ability food waste has to return. If the residents know its recursivity, then the food waste is no longer about waste but about placing. Consequently, food waste will become a spatial category rather than temporal one, this will let residents pay more attention to think about where and how to place them.

Residents were smart while learning a new system. They would accumulate their own feelings and experience to gain techniques. The company may collect all the techniques and develop a more user-friendly system to meet residents’ daily needs.

Make the users’ efforts visible. During the interviews, many interviewees showed a desire of a visible feedback to their effort. They needed a motivation for the daily recycling behavior. Therefore, we might offer some statistical reports about the food waste collection or stick some little signals on the bus derived by bio-gas. This could stimulate the residents’ passion of collecting food waste.

Provide the evidences such as a documentary video format in order to represent how the collect food waste will be treated in the factories and what they can transform to be. The video material could catch people’ attention easily, and can also function as a motivational factor to encourage the residents to collect food waste.

## **6 Discussion and Conclusion**

I was fortunate enough to enroll in VA SYD’S preparation work for participating in 2010 Shanghai EXPO. My role in the working group was to give ideas and comments on the information which would be delivered from the perspective of a local resident.

It was during April to May, 2010, when designing the whole promotion contents, VA SYD aimed at conveying the excellent waste management systems to both local and international visitors in EXPO. Food waste separation was one of the emphases to introduce and promote. Then I got the opportunity to take part in the food waste promotion work while writing my food waste thesis.

When I was involved in VA SYD EXPO group, there came to the first question: in which way should we introduce VA SYD and the waste management service. Chinese literal information was a must but not enough. In order to ensure that after

visiting the exhibition area, visitors would be impressed with VA SYD, we decided to offer a small bookmark as a gift to every customer. Though a paper bookmark was quite simple, its practicability would let people to use it frequently. Consequently, the information on the bookmark could be repeatedly delivered to visitors and finally reinforce their impressions about VA SYD.

Then we had to think about the form of introducing those waste management systems. As mentioned in cultural analysis studies, story-telling was a good way to convey information and keep the target group curious and concentrate on it. Concerning the cultural and national differences between Sweden and China, I suggested telling the story of a day of a typical Swedish family. In this story, the family could show how they use the waste management system in everyday life. Thus, Chinese visitors would be more interested in the concrete daily events and life details and become easier to share the same feeling while regardless the two different cultural contexts.

We went to a family in Area Bo01 which happened to be one of the eight informant households during my food waste project for VA SYD; we used photos rather than words to record a day of this family because pictures were good at drawing visitors' attention at the first sight, "A picture is better than thousands of words"; I didn't translate VA SYD English information (since I didn't know Swedish) literally into Chinese. Instead of doing that, I chose to let the Chinese information be more local and typical so that the cultural gap could be minimized.

When the colleagues in VA SYD and I saw the pictures from Shanghai, we knew our strategy worked. Visitors carefully browsed the information and pictures. Sometimes, they discussed the contents with each other which meant they related the waste management with themselves.

So what is cultural analysis? How could we apply it into real practice? I argue that there is no limitation for cultural analysis application. It is fairly flexible and ubiquitous. I would say it is more like an attitude, a kind of thinking and a sense rather than a concrete tool.

## 7 Reference

1. Bagozzi, R. P., & Dabholkar, P.A. (1994). Consumer recycling goals and their effect on decisions to recycle: A means-end chain analysis. *Psychology and Marketing*, 11, 313-340.
2. Bourdieu, P., & Passeron J. C. (1990). *Reproduction in education, society and culture*. London: Sage.
3. Bryman, A., & Bell, E. (2003). *Business research methods*. Oxford: Oxford University Press.
4. Douglas, M. (1991). *Purity and danger: An analysis of the concepts of pollution and taboo*. London: Routledge. (Original work published 1966)
5. Foucault, Michel. (1994). *Power*. Faubion, J.D. (Eds.). (Hurley, R. & others Trans.). London: Penguin Books.
6. Goffman, E. (1959). *The presentation of self in everyday life*. New York: Doubleday.
7. Goffman, E. (1961). *Encounters: Two studies in the sociology of interaction*. Indianapolis: The Bobbs-Merrill Company Inc.
8. Goffman, E. (1969). *Strategic interaction*. Philadelphia: University of Pennsylvania Press.
9. Harper, ED.B. (1964). *Journal of Asian Studies*, 13.
10. Hetherington, K. (2004). Secondhandedness: consumption, disposal, and absent presence. *Environment & Planning D: Society & Space*, 22, 157-174.
11. Hetherington, K. & Munro, R. (Eds.). (1997). *Ideas of difference: Social spaces and the labor of division*. Oxford: Blackwell.
12. Hopper, J. R., & Nielson, J. M. (1991). Recycling as altruistic behavior: Normative and behavioral strategies to expand participation in a community recycling program. *Environment and Behavior*, 23, 195-220.
13. Jones, T.M. (2006). What to do about food loss? *BioCycle*, 47, 32-34.
14. Katzev, R.D., Black, G., & Messer, B. (1993). Determinants of participation in multi-family recycling programs. *Journal of Applied Social Psychology*, 23, 374 – 385.
15. Kling, W. (1943). Food waste in distribution and use. *Journal of Farm Economics*, 25, 848-859.
16. Landström, C. (1998). *Everyday actor-network: Stories about locals and globals in molecular biology*. Göteborg: Univ.

17. Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Oxford: University Press.
18. Latour, B. (1986). The Powers of Association. In Law, J. (Eds.), *Power, action and belief. A new sociology of knowledge?* (p.264-280). London: Routledge and Kegan Paul.
19. Law, J. & Hassard, J. (Eds.). (1999). *Actor network theory and after*. Oxford: Blackwell.
20. Lewis, J. (2002). *Cultural studies: The basics*. London: Sage.
21. MacClancy, J., Henry, J. & Macbeth, M. (Eds.). (2009). *Consuming the inedible: Neglected dimensions of food choice*. New York: Berghahn. (First published in 2007).
22. Jean-Baptiste, N. (2009). People and food waste. Retrieved from: <http://www.wastestudies.com/>
23. Oskamp, S., Harrington, M.J., Edwards, T.C., Sherwood, D.L., Okuda, S.M., & Swanson, D.C. (1991). Factors influencing household recycling behavior. *Environment and Behavior*, 23, 494-519.
24. Pinsky, G. & Andersson, L. (1993). Motivational factors in waste-related behavior: a review. Stockholm : Avfallsforskningsrådet AFR.
25. Shove, E., Watson, M., Hand, M. & Ingram, J. (2007). *The design of everyday life*. New York, NY: Berg.
26. Sylow, M. (2008). Tempting French fries. In Fredriksson, C. & Jönsson, H. (Eds.), *Job* (p.13-26). Lund : Etnologiska institutionen, Lunds universitet.
27. Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, 22, 1580 – 1607.
28. Webb, J., Schirato, T., & Danaher, G. (2002). *Understanding Bourdieu*. London: SAGA.
29. Wikipedia / Food waste. (2010, April 10). Retrieved from the Wikipedia: [http://en.wikipedia.org/wiki/Food\\_waste](http://en.wikipedia.org/wiki/Food_waste)
30. Xiong, Y. (2009, October 23). Leftovers between parents and children. *Hangzhou Daily*. Retrieved from <http://city-hzrb.hangzhou.com.cn/system/2009/10/23/010217884.shtml>

---

1 Key roles: the residents who are living in Bo01 and using the food waste separation system.

2 Pica: pica is the genus and species name with which Linnaeus identified the

---

common magpie. Magpies are birds notorious for what is thought to be an indiscriminate appetite. Ironically, magpies do not have careless appetites; the assorted objects they are observed holding in their beak are materials for nest-building. Similarly, pica eaters, too, do not ingest simply anything. There are particular substances that have been craved throughout history and around the world; they are mostly all dry, powdery substances (MacClancy, Henry & Macbeth, 2009, p.17).

3 Polite fiction: refers to a social scenario in which all participants are aware of a truth, but pretend to believe in some alternative version of events to avoid conflict or embarrassment. Polite fictions are closely related to euphemism, in which a word or phrase that might be impolite, disagreeable, or offensive is replaced by another word or phrase that both speaker and listener understand to have the same meaning. In scholarly usage, "polite fiction" can be traced to at least 1953.

4 There is an old rural Swedish habit of mothers to feed infants who are too small to have teeth. The feeding way is called "tuggor" which means a mother chews the food and takes it out of her own mouth and gives a small mouthful to her baby. It could also be the grandmother feeding the infant in the same way. Actually, it is almost the same in China. In the case of mothers and their infants, saliva is no longer a kind of pollution or infection. Instead, it is a symbol of close social relationship.