

# Measuring Bread Use in a French Restaurant. A Naturalistic Approach: Grid Analysis for the French Culture

C. Iborra-Bernad<sup>1</sup>, O. Wathelet<sup>2</sup>, A. Giboreau<sup>3</sup>

<sup>1</sup>*Universitat Politècnica de València, Valencia, Spain. maibber@aaa.upv.es*

<sup>2</sup>*SAS Seb, Selongey, France. owathelet@seb.fr*

<sup>3</sup>*Centre de Recherche de l'Institut Paul Bocuse, Château du Vivier, Ecully, France. agnes.giboreau@institutpaulbocuse.com*

## Abstract

Bread is a staple food in France; its consumption in French culture is common during meals at home and in restaurants. However, the way bread is used in those settings is unknown, notably as a mean to perform non ingestive tasks. 117 people were observed in a restaurant, most of whom ate bread (n=106). Observation revealed that bread has non alimentary roles during the meal as well as being eaten. The main operations observed were: "mopping up" gravy or sauces and to support the picking up of other food. The knowledge of those operations conducted with a food product leads to better understanding of the many roles of bread during a meal. The aim of this study was to create a grid analysis of bread operations in a table in naturalistic situations based on French culture.

**Keywords.** bread, usage, operations, observational methodology, experimental restaurant.

## Introduction

In France, wheat bread is a major contributor to the diet and a symbol of gastronomy [1]. Bread consumption per day in France has decreased during the twentieth century from 900 g in 1900 to 160 g in 1995 [2]. However 97.6% of French people still eat bread during the day [3]. Bread may be eaten as a single product, but it is usually consumed along with other dishes, during a meal. In francophone culture, breakfast could be composed of a slice of bread spread with butter or slices of bread filled with other ingredients as a sandwich or just the bread [4,5].

In all of cases the function of bread is its consumption. However, this product has different features allowing other uses during a meal such "mopping up" or use it as a base for a bar snack. Despite the rapid growth of new bakery products, research into bread usage by consumers is scarce. The decrease of its consumption is a cause for concern in the bakery industry, leading to new ways of understanding how food is used not solely as a ingredient but as a more complex object, permitting to dense and rich manipulation. In this case study, we rely on a design ethnography approach which approximates the immersion methods of traditional ethnography, to deeply experience and understand the user's world for design empathy and insight [6]. In this aspect, Tony Salvador, Genevieve Bell, and Ken Anderson [7] describe design ethnography as being "a way of understanding the particulars of daily life in such a way as to increase the success probability of a new product or service or, more appropriately, to reduce the probability of failure specifically due to a lack of understanding of the basic behaviors and frameworks of consumers." In others words, design ethnography studies interactions between people and relevant parts of their environment and describes tension between planned use (the one expected by bakers or waiters) and ones performed in real life situations by actual consumers. In this research we hypothesize that bread is not only a foodstuff but is also a tool used during the meal situation for a wide range of purposes. To capture and describe those uses we based our data production on the full video recording of meals in a restaurant. In classical ethnographic effort, as stated by Pink [8], description ought to be based on an in-depth understanding of the meaning of action, which is made in our case by describing the interaction between eaters, bread and the others parts of the environment. However, we aimed to add a quantitative dimension to the analysis by connecting this ethnographic observation to their frequency by combining these approaches. The

objective of this study was to create a grid analysis of the bread operations on the table in a naturalistic situation based on french culture using a video recording permitting the capture of real-life complexity.

## Methods

### Participants and situation

117 clients of Experimental Restaurant (Institut Paul Bocuse, Ecully, France) participated in the study. 106 participants had physical contact with bread while sitting at tables. Clients were real customers who booked the table by themselves in the Experimental Restaurant and paid 20 Euros for a meal. Before starting, an ethical committee approved the study and participants were made aware of their participation into a study without revealing its objectives. A consent form for participation and video recording in the dining room was signed. Participants were adults between 20 and 85 year of age with on average of 44.7 years old.

Participants were received by the “maître d’hôtel” (headwaiter) as it is usual in a moderately priced restaurant. A total of eight sessions were conducted to study all subjects. Menus were composed of an “*amuse bouche*”, a starter, a main course and a sweet dessert. The style of the cookery was “haute cuisine” or gastronomic meal.

### Products

White bread (WB) and whole wheat bread (WWB) were supplied daily by the same bakery. Both types of bread were proposed to favour the consumption by all consumers. WB was made following the traditional French method. WWB was made according to the recipe of GMS Meunerie (France), the supplier of flour used for “Pain complet”. A precision balance (Balance Aip, model NHB-1200) was used to calculate the approximate weight of each slice of bread:  $7\pm 1\text{g}$  for WB and  $12\pm 1\text{g}$  for WWB. Bread slices were presented in dishes in the middle of the table.

### Measurement

Cameras located on the ceiling of the experimental restaurant were used to monitor the participants during the meal. Six cameras were used to observe six different tables during the meals, and the number of participants was between 2 and 6 people per table. Recorded video films were employed to analyse customer behaviour towards the bread. Vlc media player and Excel 2007 were employed simultaneously to watch and code the behaviours observed, respectively. On consumption of each piece of bread, the following information was checked to create the grid analysis (Table 1):

1. At what moment of the meal was the bread consumed?
2. What is the kind and form of the dish?
3. Before eating the bread, was any operation carried out with the bread?
4. What are the elements taking part in the interaction?
5. What could be the objective of this usage?
6. Is there more than one usage?
7. Description of the sequence.

## Results

Observations led us to define the categories in answer to the previous questions. Table 1 shows the codes to create the behaviour bread grid analysis and Figure 1 illustrates one of the multi-operations with the same piece of bread observed and an example of a grid analysis.

Table 1. Grid analysis about operations conducted with bread.

CRITERIA	CODES
(1) Stage of the meal	W: Waiting. A: Amuse bouche. S: Starter. MC: Main Course SD: Sweet Dessert
(2) Type of the dish	B: Bowl P: Plate SP: Soup dish
(3) Form of the dish	Ro: Round S: Square Re: Rectangular
(4) Elements taking part into the Interaction	BH: Bread-Eater's Hand BHP: Bread-Eater's Hand-Plate BHF: Bread-Eater's Hand-Foodstuff BHC: Bread-Eater's Hand-Cutlery BHFC: Bread-Eater's Hand-Foodstuff-Cutlery
(5) Operation with the bread	E: To eat. M: To mop up. Su: As a support to pick up other foods. Sp: As a base for spreading. Ck: To clean the knife. Sb: Function as a base for bar snack. D: To dip bread in soup. Cf: To clean the fork.

Times of different operations were counted and sequenced. Some operations chains were repeated. Of the 106 people who ate bread, the percentage of participants who carried out an additional operation with the bread was: 82.1% to mop up, 34.0% as a support to pick up other food, 20.8% to clean cutlery, 10.4% to spread other sauce and 4.7% use the bread as a base for a bar snack.

The operations repeated most times were “to mop up and to eat the bread” (M+E), followed by employing bread “as a support to pick food up from the dish and to eat the bread” (Su+E) (Table 2).

The chain of operations most repeated were the bread as a support and after employing it to mop up, another sequence repeated several times was cleaning the knife, mopping up and to eating the bread.

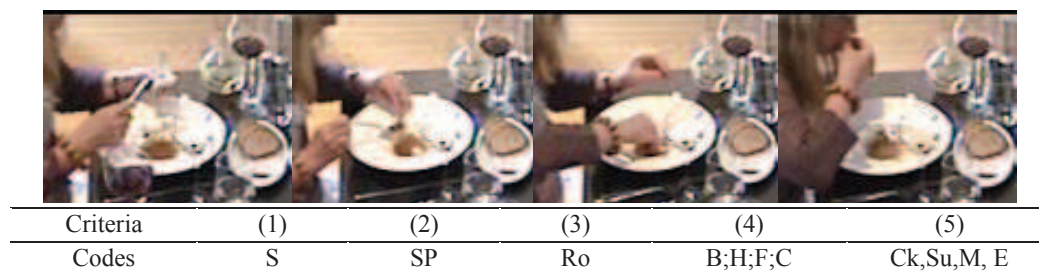


Figure 1. Example of multi-operations with the same piece of bread.

Table 2. Sequence and number of operations repeated during the meal by participants (n=106).

Sequence	Times (%)
E	1082 (62.4)
M+E	436 (25.2)
Su+E	87 (5)
Su+M+E	34 (2)
Sp+E	28 (1.6)
Ck+E	25 (1.4)
Ck+M+E	20 (1.2)
Sb+E	10 (0.6)
Ck+Su+E	6 (0.3)
D+E	2 (0.1)
Ck+Su+M+E	1 (0.1)
Ck+Sp+E	1 (0.1)
Cf+Su+M+E	1 (0.1)

E: To eat; M: To mop up; Su: as a support to pick up other food; Sp: to spread; Ck: to clean the knife; Sb: Function as a base of snack bar; D: to dip bread in soup; Cf: to clean the fork.

This generic table identifies several uses of bread and point out some of its main features from the standpoint of French Customers. The qualitative analysis of video sequences show for instance some shift in priority of the quality of bread. As a tool to pick up other food, consistency should be dense; while at the opposite its mopping up role rely on softer properties. Cleaning, dipping or spreading actions are in an intermediate state. Interestingly, there are limitations to the sequence of events. Of course, eating is always the end process, but mopping up is always next to last. On the contrary, cleaning a utensile (mostly the knife) appears at the beginning of the process.

## Conclusions

In this work, operations with bread by the customers in the experimental restaurant have been investigated. Observation of the different situations revealed some logical sequences in the clients' behaviour over time. It was observed that consumption is not the only operation conducted in the dining room. Mopping up and being as support for picking up other food are operations that usually precede consumption. Bread could be related with the correct cleaning of other elements on the table: dish, fork and knife. Also, the bread was employed as a support to pick up other foodstuffs from the dish to avoid contact with fingers. This pattern of operations would be considered as a base to develop a more complex study about the operations regarding the kind of traditional bread of a region, culture and situations. This effort will also need extra time to collect oral data about the meaning of actions, such as for instance the use of video to elicit the meaning of an action [9].

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