Intercultural comparisons of eating habits and food preferences
Aims and Scope

Menu: Journal of Food and Hospitality Research aims to publish articles about work in progress on food behaviors, in link with culinary arts, foodservice and hospitality. Its scientific ambition is both thematic and methodological. Firstly, it proposes to publish the work of PhD students, researchers interested in food, culinary arts and gastronomy, and who place people – as cooks, waiters or as consumers - at the center of their works. Secondly, from a methodological standpoint, the journal gives priority to ecological studies of these activities, promoting the development of in situ and in vivo approaches. While social sciences, behavioral sciences and humanities are at the heart of publications, the journal aims to maintain an interdisciplinary dialogue, especially with food engineering and life sciences. As a scientific journal, it also aims to bring together the academic, public and private sectors, through the diffusion of applied research. Menu publishes articles on the basis of PhD Workshops and Symposia of the Institut Paul Bocuse Research Centre. Articles are subject to a double-blind review process involving researchers from the relevant scientific fields.

The journal contains four types of publications:
- Research articles present accomplished research works.
- Varia are research articles addressing a topic different from the theme of the issue.
- Book reviews are short articles presenting a critical view on recently published books.
- Fieldnotes are short research reports on exploratory studies or on the preliminary results of ongoing research works.

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Menu: Journal of Food and Hospitality Research is a new journal dedicated to food-related practices, usages, behaviors, decisions and perceptions, with a special focus on culinary arts, foodservice and gastronomy. Food is at the same time a product with sensory properties, a marketable good, a means to meet physiological needs and a symbolic stand. As such, its study calls for a diversity of approaches. Among the range of approaches available, the scope of Menu is to focus on human beings and on the relationships between food and people, rather than, for instance, food engineering, ingredients chemistry or culinary processes. Among the many journals which address the topic of food behaviors, Menu aims to create a dialogue between foodservice, culinary arts and political, economic, social and life sciences. Technology is seen through the lenses of users: food properties, sensory qualities and culinary techniques are described as the results of perceptions, behaviors, practices and complexes process of decision making. Restaurants, kitchens and any places where people eat and cook are social arenas where people live. This is what we would like to capture through a scientific glimpse.

For the second issue of the journal, we want to explore methodological issues raised by intercultural comparisons of eating habits and food preferences. This issue of Menu reflects the outcome of the second PhD European workshop at the Research Center of the Paul Bocuse Institute on this topic, which was organized in February 2012 with the intent to create a unique opportunity of multidisciplinary scientific exchanges and methodological issues in the field of food studies for junior researchers. The issue gathers Regular articles, Field Notes and Book Reviews from the workshop participants all aiming to investigate this topic from a variety of disciplinary and methodological perspectives, as well as external contributions (Varia articles) dealing with food studies in general.

The role of culture in the construction of meanings, norms and usages surrounding the relationship between individuals and groups on one hand, and food and eating situations on the other hand, has been largely discussed in anthropological literature. Food and meals rituals are crucial vectors for the reproduction and the transmission of cultural values and social life (Fischler, 1990; Mennell, Murcott & van Otterloo, 1992). Eating is definitely a physiological activity and at the same time, a cultural practice (Simmel, 1992).

In the past decades, globalization issues have gained growing importance in research in the fields of economic, human and social sciences. In food studies in particular, researches with a comparative perspective have increased, mostly in relation to facilitated access to ingredients, processed products and food services of broader origins, to increased migrations or, more broadly, due to the more frequent experience of otherness - whether through business, leisure travel or in everyday life (Appadurai, 1996; Raulin, 2000; Régnier, 2004; Sanchez, 2007). For the researchers in the food and eating field, these works raise several questions regarding the possibility to compare groups of individuals with different cultural backgrounds and socialized in specific social environments, but also individuals and groups moving around the globe, from one country to another or living in a multicultural context.

Comparing means analyzing in the same time two or more individuals/groups. It is a method and a way of thinking, which proceed through the identification of similarities and differences between individuals or groups (Glaser and Strauss, 1967; Vigour, 2005). Choosing a comparative approach structures all the steps of the research: the definition of the concepts, the choice of the population, the scale of the analysis and the
formulation of the hypothesis. In addition, in comparative works, researchers have to face with several critical moments.

Attempting to answer these methodological issues in regard to comparative approach requires choosing concepts, defining research questions, designing research protocols and data analysis processes that rely on complex decisions, which have been discussed during the 2nd European PhD workshop at the Research Center of the Paul Bocuse Institute. How to define the study perimeter, the sample or more generally the units of comparison? What to do with translation of concepts, notions and situations? How to define the studied groups while at the same time preserving their specificity and identifying the common elements of comparison? What does determine the validity of comparison studies? How to analyze these data? More generally, how to select the right methodology in order to compare? Which are the available and relevant method and how should they be selected?

In order to progress together on the methodological and conceptual stakes - in particular, but not restricted to intercultural comparison in the field of food studies - we have organized this PhD workshop. During two days, PhD students and researchers of different disciplines discussed and exchanged on scientific approaches to address these questions regarding intercultural comparison thanks to the presentation of works and thoughts of nine PhD students, two plenary lectures and two tutorials on comparison methodologies. The contributions of the PhD students explored several important topics in the large field of food studies with very diverse approaches and in various populations and countries: from the everyday food practices of cosmopolitan foodies in Canada with a sociological perspective to the study of the consumers’ rice-cooking behaviors in three Asian countries and in France within a sensory sciences approach; from the impacts of cultural values on the training of Chinese teams in hospitality management to the comparison of representations and norms about eating and body between French and Spanish young women.

This issue includes various contributions of the PhD students who have participated at the workshop. In addition to these papers presenting on-going comparative researches, two Book Reviews of recent texts dealing with intercultural comparison are included.

We have three Regular articles and a Field Note about cross-cultural comparison, which allow having a better understanding about eating practices, normative discourse and food preferences in different countries and in different populations in the same country. Thanks to these studies, several questions about social representations and cultural usages in different populations are explored.

The paper of Tove Kjaer Beck deals with individual bitterness perception and vegetable liking and consumption among Danish and French consumers. In order to promote healthy behaviors at workplace, Rikke Nygaard compares and discuss the representations surrounding healthy eating practices among bus drivers with different ethnical origin in Denmark: Pakistani, Somali and Danish. Stéphane Desaulty presents a research in the field of cognitive psychology interested in evaluating the perceptions of sanitary risk in food catering industry by comparing bias and errors of novice and experts professionals’ reasoning. Finally, the Field Note of Liselotte Hedegaard explores the notion of “foodscape” as an analytical tool in order to capture the complex dimensions of the relationship between food and place in 21st century in the study of food culture in France and Denmark. The methodological questions raised by these papers are numerous, such as who, what and how to compare?

These three essential questions are also treated in the two Books Reviews included in this issue. Maria Clara De Moraes Prata Gaspar discuss the book of Thibault de Saint Pol, The Desirable Body: Men and Women Confronting their Weight, in which the author is interested in the rise of obesity in France and compares the relationships between men and women with their body weight and body fatness. The second book, Adventures in Eating: Anthropological Experiences in Dining from Around the World, is a collection of various articles, where fourteen anthropologists take readers on a global journey through the exploration of unusual eating practices. The review of Sarah Cappeliez highlights the considerations identified in this book in regard to methodological limits and assets and also to the globalization on foodways across the globe.

The international comparison of food attitudes, eating behaviors and food preferences but also comparison of two populations in the same country is very complex and important in order to produce a representative study
and to overcome stereotypes. This issue is dedicated to the scientific approaches developed in several disciplinary fields to address these questions of comparison.

References


Comparisons of individual bitterness perception and vegetable liking and consumption among Danish consumers

A pilot study for a cross-cultural sensory study between Denmark and France

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Abstract

In order to enhance the consumption of bitter and strong tasting vegetables such as cabbages and root vegetables, it is required to identify potential mediators of sociodemographic–diet relationships. In this context a consumer field study was conducted in Denmark which comprised a semi-quantitative food frequency questionnaire, a bitter threshold value test kit with quinine and a preference test with two samples of carrots differing in the degree of bitterness. All tests were conducted outside the laboratory, and the subjects (n=116, aged 18 to 79) were recruited during two different events at two sites in April and June 2011.

Data was subjected to multivariate data analysis in order to elucidate relationships between consumer bitter sensitivity, vegetable preference, liking and consumption of vegetables together with socio-demographic characteristics. The outcome of the present study indicated a positive relationship between high liking of vegetables in general and high vegetable consumption. Furthermore, it was seen that individuals with low sensitivity to quinine preferred the bitter carrot sample compared to the sweeter carrot sample although this fact could not be confirmed statistically. The present design of the study was validated and prepared for future use.

Keywords: consumer study, brassica, bitterness, vegetable liking and usagerat.
1. Introduction

Increased consumption of fruit and vegetables is found to reduce the risk of different lifestyle diseases such as cardiovascular diseases and the high content of phytochemicals in fruit and vegetables is believed to play a crucial role. The scientific evidence of health beneficial effects associated with a high fruit and vegetable intake in general has formed the basis for dietary approach and recommendations to prevent diseases all over the world.

A high intake of vegetables of the family Cruciferae has more specifically been associated with reduced incidences of cancer. The protective effect of cruciferous vegetables against cancer has been suggested to be partly due to their relative high content of glucosinolates which distinguishes them from other vegetables (Van Poppel et al., 1999: 159). Vegetables of the Brassica genus, including cabbages, kale, broccoli, cauliflower, Brussels sprouts, and root crops such as turnip and parsley root, contribute to the highest intake of glucosinolates (McNaughton & Marks, 2003: 687).

In different types of studies, including in vitro, animal, human and epidemiological studies, high intake of vegetables has been correlated with a reduced risk of different diseases, including cardiovascular diseases (Bazzano et al., 2002: 93; Kris-Etherton et al., 2002: 397). In regards to cancer protection several studies provide specific evidence for a health beneficial effect of Brassica vegetables (Van Poppel et al., 1999: 159).

In France the official dietary recommendation in regards to fruit and vegetables is consumption of five servings of fruit and vegetables per day (Le Programme National Nutrition Santé (PNNS), 2012) while the recommendations for adults in Denmark are six servings per day (Denmark, 2012). Vegetable consumption is in average still below nutritional recommendations. In 2005, 330 g of fruit and vegetables were consumed per adult in France (Le Programme National Nutrition Santé (PNNS), 2012), and in Denmark the consumption was estimated to be 356 g in the period 2003/2006 (Ministry of Food, Agriculture and Fisheries, 2006). The consumption is dependent on several barriers and drivers, as is the case for other food products (Shepherd, 2001: 117). Elucidation of these barriers and drivers, that sometimes are implicit, will provide knowledge which can be used in the strategy to increase the consumption of these vegetables. Individuals make food choices based on a number of physiological, nutritional, environmental and sociocultural factors. The sensory qualities of food are in accordance to (Shepherd, 2001: 123) a very critical factor to dietary preferences. Taste in particular is found to be the most crucial determinant of food choices (Drewnowski et al., 1995: 1424; Glanz et al., 1998: 1128). Bitterness is identified as an important barrier for vegetable consumption in general and in cruciferae specifically. Vegetable sweetness and vegetables bitterness were positive and negative predictors of vegetable preference, respectively (Dinehart et al. 2006: 304), while Schonhof et al. (2004: 25) concluded that consumers prefer vegetables with lower content of bitter glucosinolates and higher sucrose content.

Genetic variation in taste receptors may also account for differences in food choices and dietary habits (Garcia-Bailo et al., 2009: 69) and perception of bitterness of glucosinolate-producing vegetables (Sandell et al., 2006: 792). However, other non-genetic factors have been shown to be even more important for dietary choices (Glanz et al., 1998: 1118; Gorovic et al., 2011: 274; Shepherd, 2001: 123). The inclusion of non-sensory factors is particularly important in cross-cultural food studies because expectations formed from previous experience or beliefs based on information about the taste of specific food products plays a profound role in consumers’ responses and behaviour (Deliza et al., 1996: 1080).

Bitterness is one of the basic taste qualities that are detected on the tongue. The ability to perceive bitterness varies among subjects and is very dependent on the bitter tasting compound. A subject’s ability to perceive bitterness can be assessed using a threshold value test where the subject is presented for solutions with increasing concentrations of a bitter compound. Threshold value tests are a category of analytical tests which have the specific function to determine the concentration at which the specific sensory response is detectable or recognizable – the so called detection or recognition threshold value (Lawless et al., 2010: 127; Meilgaard et al., 2007). Several of phytochemicals in vegetables,
including the glucosinolates are associated with a strong and bitter taste (Fenwick, 1981: 90; Kreutzmann, 2007). Many root vegetables and cabbages exhibit high content of specific phytochemicals.

2. Materials and methods

2.1 The study design

The study was carried out at two different events in April and June 2011 in Denmark. At the first event (Study A), subjects were selected among people living in the Funen area of Denmark (N=46) at The Festival of Research which is an annual national event intended to arouse public interest in research and science. At the second event (Study B) subjects (N=70) were recruited at a Hortea Expo, which is an exhibition primarily for farmers and vegetable growers. The subjects in both groups filled out a questionnaire and were tested individually for their bitter sensitivity, as well as the preference for either sweet or bitter carrots as described in the following methods.

2.2 Bitter threshold value

Subjects performed a threshold value test determining their bitter sensitivity using quinine as bitter tasting compound. To familiarize the subjects to the four basic tastes: bitter, salty, sweet and sour, they were presented aqueous solutions of each of the basic tastes using four spray bottles. Details about the compounds and concentrations used are provided in Table 1.

The threshold value test consisted of seven ascending concentrations of quinine (Table 1). The solutions were served in 10ml plastic cups. The recognition threshold value was stated for each individual subject. The threshold value was determined as the geometric mean of the concentration corresponding to the first correct answer (with all higher concentrations correct) and the concentration corresponding to the last incorrect answer (Lawless et al., 2010: 132). This test was performed at the test locations and for this reason it differs from the classical threshold value test which take place in a controlled environment e.g., a sensory laboratory.

Table 1: Basic taste presentation sprays and threshold value test solutions; compounds and concentrations

<table>
<thead>
<tr>
<th>Basic taste recognition spray</th>
<th>Compound</th>
<th>Concentration [g/L]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet</td>
<td>Sucrose</td>
<td>48.0</td>
</tr>
</tbody>
</table>

2.3 Preference test

A preference test was performed with two types of carrots (cultivar; Bolero) with different taste profiles due to differences in storage conditions. Half of a batch of carrots was stored at 5°C under normal atmospheric conditions. The other half of the batch was treated six times with 10,000 ppm ethylene during one week at 5°C. After treatment these carrots was stored under conditions similar to the first half of the batch of carrots. The ethylene treatment resulted in higher bitterness. Storage and ethylene treatment was performed in the Post-harvest facilities at Aarhus University, Aarslev, Denmark.

As a control, the carrots used in the preference test were evaluated by a trained sensory panel (N=9 in to replicates). The paired difference test was carried out in a sensory evaluation laboratory compliant with international standards (ASTM, 1986; ISO, 1988). The assessors had more than half a year weekly experience in sensory evaluation of plant food products. The carrots were evaluated in regards to sweet taste, bitter taste, tepene-flavour and crispiness. As reference for terpene-flavour the assessors used the odour of a turpentine-like mixture (0.5 μl of each, α-pinene, β-pinene and caryophyllene and 1.0 µl of p-cymene and terpinolene in 100 ml pure water).

2.4 Questionnaire

The method of liking and product usage assessment had to be simple but still product specific, and should reflect usual long-term vegetable intake and liking. In the questionnaire, focus was on carrot, parsnip, parsley root, beet root, celeriac, white cabbage, kale, broccoli, Brussels sprouts, turnip, German turnip, Jerusalem artichoke, artichoke, and cauliflower. To meet these criteria a food frequency questionnaire was used. This method has been widely applied e.g. in food and epidemiological studies over the past decades. When filling out the questionnaire, the
subjects had six options, e.g. How often do you eat broccoli?‘More than 3 times a week’, ‘Minimum once a week’, ‘Minimum once per two weeks’, ‘Minimum once a month’, ‘rarely’ and ‘Never’. In the data analysis these categories were converted to yearly intake (Table 2). The subjects were instructed to disregard seasonal variation which means that the subjects had to consider intake in average over a year. The study was performed in approximately the same time of year, April 30, 2011 and June 5, 2011 which is off season for all the vegetables.

Table 2: Scale for product usage rate and calculation of yearly intake in number of days

<table>
<thead>
<tr>
<th>Scale for product usage rate</th>
<th>Number of days</th>
<th>Yearly Intake*</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 3 times a week</td>
<td>156-365</td>
<td>260</td>
</tr>
<tr>
<td>More than once a week</td>
<td>52-156</td>
<td>104</td>
</tr>
<tr>
<td>Minimum once per 2 weeks</td>
<td>26-52</td>
<td>39</td>
</tr>
<tr>
<td>Minimum once a month</td>
<td>12-26</td>
<td>19</td>
</tr>
<tr>
<td>More rarely</td>
<td>1-12</td>
<td>6</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Yearly intake is calculated e.g., Median of 156 and 365 = 260 days per year.

In order to measure liking of each of the selected vegetables a 7 point hedonic scale with smileys was used (Figure 1). The question was for instance: How do you like/dislike carrots? The scale was from ‘Like extremely’(7) to ‘Dislike extremely’(1). Subjects had the opportunity to answer “Have never tasted” (0). The direct translation of the English term: “dislike” is not found in either the Danish or the French language and therefore the use of written labels were problematic. For this reason only the middle point ‘Neutral’ and the endpoints were labelled with a written label. The smiley symbols were applied to help the subject assessing the questions. The evaluation of liking is thought as a general liking of the specific vegetable. It is recognized that culinary preparation has an impact on the perceived bitter taste of vegetable why in addition the subjects were asked to mention what cooking method(s) they generally apply when preparing vegetables.

Figure 1: 7-point hedonic smiley scale used as liking scale for various vegetables

2.5 Data analysis

Data from the preference test, recognition threshold value test and the questionnaire were analysed by univariate statistical methods using R (version 2.1.4.0, R Development Core Team, 2011) and by multivariate data analysis (SIMCA, Umetrics, Sweden). In order to elucidate correlations data was auto-scaled and two outliers were removed to improve the model (Næs et al., 2010). Additionally, subjects younger than 18 years of age, and professional assessors were left out.

The data from the preference test was for “forced choice-reasons” registered on a dichotomous ordinal scale 1 = bitter carrot; 0 = sweet carrot and the variable “Preference for Sweet carrot” is consequently not shown in the plot. However, “Preference for sweet carrot” will be negatively correlated to “Preference for Bitter carrot” in the PCA plot.

3. Results and discussion

Subjects included in Study A and Study B counted 116 adults (>18 years of age). In Study A females accounted for 65% of the participants, while in Study B females accounted for 61%. The average age of subjects from the two studies are shown in Table 3.

<table>
<thead>
<tr>
<th>Age range</th>
<th>All</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-79</td>
<td>36±15</td>
<td>36±15</td>
<td>39±16</td>
</tr>
<tr>
<td>Study B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-78</td>
<td>51±15</td>
<td>50±13</td>
<td>53±18</td>
</tr>
</tbody>
</table>

Table 3: Age of subjects Mean ± SD [years]

3.1 Recognition threshold value test

The threshold value test gave an approximate normal distribution, which means that the levels of quinine concentrations were adequate. A large range of compounds with large differences in their chemical composition is perceived as bitter. A vegetable-related bitter compound e.g., sinigrin or goitrin, which are bitter tasting compounds found in cabbage, would be a better choice for this purpose but for economic and ethical reasons the
commonly used bitter compound, quinine was chosen.

3.2 Preference for carrot

The sensory panel found that the carrots exposed to ethylene were significantly (alpha probability 5%) more bitter and less sweet compared to carrots stored under atmospheric conditions at 5°C. No differences were found concerning terpene-flavour and crispiness. The sweet carrot was preferred by 66% of the participants while the remaining 33% of participants preferred the bitter tasting variant.

3.3 Liking and usage of vegetables

There was no significant difference using Anova (R) between liking scores in Study A and Study B, subsequently liking scores from both studies were averaged in Figure 2.

Figure 2: Liking scores from consumers for selected vegetables. Y axis 1: Do not like at all and 7: Like very much

Carrot was the most liked and also the vegetable with highest usage rate. In contrast, Brussels sprouts/parsley roots/ curly kale were reported to be the least liked and the least consumed vegetable (Figure 2 and Figure 3). Carrot had significantly higher liking scores than parsley root, celeriac, kale and Brussels sprouts. Rating of liking provided thereby useful information, and the subjects raised no doubt or questions in regards to use of scale etc. Whether this double information both labels and smileys facilitates the use of the scale for the subject or impede the cognitive treatment for the subject is unknown. Only relatively poor literature was found on this topic.

Some of the vegetables had the exact same usage profile and were therefore grouped in Figure 3. The bar plot shows the percentage of consumers that answered in each category ranging from “More than three times a week” to “Never”. In the evaluation of carrots, the “More than three times a week” category was used very frequently and subsequently an option to answer “Every day” could have provided extra information.

Figure 3: Product usage rate for selected vegetables

Due to the high liking and high usage frequency of carrots it could be interesting to include an additional and less familiar/popular vegetable in the preference test. Furthermore, a sensory test with 2 types of vegetables would give more power to the preference test.

The result from the study is shown in the PCA score and loading plot (Figure 4). The results indicated a correlation between high liking of vegetables and high vegetable usage rates. Whether it is the fact that the consumers like the vegetables that increase the consumption, or that the exposure drives the liking cannot be seen from this.

Figure 4: Data: Questionnaire, Threshold value and Preference test results from both study A and B. A: PCA Individuals score plot: Women (red), men (blue) & numbers on label refer to the age of each subject. B: PCA Loading plot: Vegetable product usage rate (green), Liking (red), preference for bitter carrot (orange), Threshold value (blue) and, other variables (grey).

There was no significant difference between threshold values for men and women (p=0.06), however there seem to be a trend that women eat vegetable more frequently compared to men. Furthermore no age effect was seen in the present study in regards to bitter or sweet carrot preference (p=0.71) nor to consumption (Figure 4A).
For threshold value test and preference test contextual variables should be considered in the discussion on these. Many scientists state that not only the product should be in focus, but also the individual and the environment (Meiselman, 2006: 179). Most sensory tests are carried out in laboratory settings but in this case it was chosen to carry out at a central agency. The research is therefore made in a more naturalistic setting, mostly to be able to recruit subjects in a broader sense and not only recruiting subject with high liking of vegetables and special interest in food. It was a trade-off because the sensory tests were carried out under less controlled settings and in a more stressful and noisy environment compared to a laboratory test. Compared to a home use test the subjects exposure to the samples is much shorter (Lawless & Heymann, 2010: 354) but gave a better control of samples and possibility to instruct subjects. The result cannot even-handed be compared with results from threshold value tests and other sensory tests carried out in sensory laboratory (Meiselman, 2006: 179).

It is possible that context effects such as time of day could influence the preference for either sweet or bitter carrot, and for this reason the subjects were numbered in succession and chronological order. No pattern was found indicating that the time of day had importance for the result of preference or threshold value tests (not shown).

Developing a questionnaire for consumer studies is a challenging task. In questionnaires concerning healthy foods, subjects may give socially desirable responses, such as reporting higher usage rate. Furthermore, when answering for each specific vegetable there will be a risk that the usage rates are overestimated compared to the overall vegetable consumption.

It is a challenge to measure behaviour and attitudes in different contexts, given some methodological issues, such as defining sampling procedures and defining concepts. A high degree of precision or exactness in measurement is desirable, but it is not always possible to achieve this in consumer research (Ember et al., 1991: 187).

4. Conclusion

The outcome of the present pilot consumer study indicated a correlation between high liking of vegetables and high vegetable usage rates. Furthermore, individuals with low sensitivity towards bitter solutions of quinine seemed to prefer the bitter carrot sample rather than the sweet carrot sample. Indicating that quinine taster status can be one of the factors used to predict preferences and intake in regards to some bitter and strong tasting vegetables. This result was, however, not statistically significant (p=0.12).

The test setup was validated and a few adjustments were made. The questionnaire is now believed to be fully translated and optimized based on the result from the present study in Denmark in order to comply with cultural differences. It is ready to be used in a larger scale in Denmark and France. Further investigation is required to identify additional potential mediators of sociodemographic-diet relationships.

5. Perspective

The experience gained from the present study revealed that it will be a challenge to use the test setup in a future cross-cultural study. It must be kept in mind that cultural comparisons may be complex, with many conceptual and methodological differences, e.g. comparison of the concept of food quality in surveys used in more countries with cultural, geographical and linguistic diversities. In the present study it was noticed that the same vegetables were not present in the two countries e.g. kale and German turnip. In regards to more cultural questionnaire issues it was found that questions concerning ethnicity and economy are problematic, since it is less acceptable asking such type of questions to French subjects.

Based on the findings outlined above, the outcome of the cross cultural consumer study is expected to be: 1) insight about drivers and barriers for vegetable consumption; 2) that cross-cultural differences in vegetable preferences/sensitivity/intake exist; 3) that the preference pattern for bitter and strong tasting vegetables among the tested population in Denmark (Nordic country) and in France (Western/Central European country) will differ significantly and, 4) that the ability to taste bitter quinine can be used to predict the vegetable preferences.

Acknowledgements

The cross-cultural study is a part of a PhD project, which is included in a larger research project (MAXVEG) financed by the Danish Council for Strategic Research, in Denmark. The overall aim of the MAXVEG project is to develop new tools and strategies to increase consumption and production of bitter and strong tasting, healthy root vegetables and cabbages, which have high liking among consumers.


Evaluation of Food-Related Risks in the Catering Sector:

A Comparison of Biases and Errors in Expert and Novice Reasoning

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Abstract

Specialists of food safety underline the importance of psychological aspects of good hygiene practices application. Sanitary risks perception is considered as an important determinant of these practices. Studies in psychological framework have demonstrated that errors are likely to occur when people reason under risk.

We propose an alternative approach of good hygiene decisions in the catering sector, based on a modern dual process model of memory and reasoning, the fuzzy trace theory (FTT). According to FTT, reasoning under risk is affected by knowledge deficit but also by failure of knowledge retrieval, representational biases and processing interferences.

We tested the hypothesis that expertise in sanitary risks could decrease errors linked to knowledge deficit but increase errors linked to the cognitive process of knowledge retrieval. One-hundred-eleven catering sector professionals (38 auditors, 37 managers and 36 operators) completed a questionnaire exploring their perceptions of specific food-related risks. Based on two criteria of expertise, status and experience, we assume that expertise in risk perception increases from operators to managers, auditors being considered as the expert group for questions which are not linked to a specific place of work.

The results confirm the specific predictions of FTT. Auditors made less errors linked to knowledge deficit than Managers and Operators. Furthermore, for the two groups of professionals of catering, the more expert professionals made more errors linked to retrieval failure and less errors linked to knowledge.
In addition to disseminating knowledge, good hygiene trainings should provide support to retrieval of knowledge, especially with expert professionals.
1. Introduction

1.1 Theoretical models

1.1.1 Traditional models of good hygiene application

In ten years, the number of reported foodborne outbreaks has dramatically increased (InVs, 2009, Appendix 1). Foodborne outbreaks have obvious consequences for health, but also important economic impacts for business, leading sometimes to closing down. Because of these substantial costs for individuals, food industry and economy, reducing the number of foodborne outbreaks is a major issue for both public health and catering sector professionals.

A high proportion of these outbreaks are due to improper food handler practices (W.H.O., 2000). Therefore, improving hygiene practices may be a key to reduce this number. For this reason, food hygiene training courses are mandatory for all food workers. Unfortunately, trainings are rarely based on an effective theory of human behaviors but rather rely on a simple “Knowledge-Attitude-Practices” model (named KAP model), which is criticized for these limitations. It is accepted that knowledge alone is insufficient to really change professionals’ food hygiene practices and that improved trainings have to take into account psychological aspects of human behaviors. It has been argued that food hygiene trainings efficacy could be improved using health education or psychological theories (W.H.O., 1988; Rennie, 1995; Ehiri, Morris, & McEwen, 1997; Clayton, Griffith, Price, & Peters, 2002; Coleman and Roberts, 2006). Adapted from the health education framework, some social cognition models (SCM) have since been used (Theory of Planned Behaviors, Ajzen, 1991; Health Belief Model, Rosenstock et al, 1988; Health Action Process Approach, Schwarzer, 1992). Trainings based on these models improve individual attitudes toward food hygiene and behavioral intentions but their capacity to really change practices is limited (Powell et al, 1997; Griffith, 2000; Egan et al. 2007). In other words, data show that there is a gap between behavioral intentions and behaviors implementation. The idea is not that currently used social cognition models are worthless. On the contrary, there is a lot of evidence of their efficacy to model a diverse range of health behaviors and they are also useful in identifying some factors involved in good hygiene practices implementation like motivation or past behaviors (Chow and Mullan, 2010). Nevertheless, the aforementioned discrepancy between intention and behaviors challenges these SCM approaches. The need to better understand psychological factors of good practices implementation is reinforced. The notion of risk perception plays an important role in each of these models, and basing food hygiene trainings on risk is viewed as a possible improvement of existing approaches (W.H.O., 1988; Clayton et al. 2002; Clayton & Griffith, 2004; Coleman et Roberts, 2006). In order to improve current approaches of good hygiene practices application, cognitive aspects of reasoning and decision making under risk should be more considered.

1.1.2. Risk-based alternative approach: Fuzzy Trace Theory

Two points led us to propose an alternative approach based on a modern dual-process model of reasoning and decision making about risks named the Fuzzy Trace Theory (FTT). First, errors in decision are rarely considered by current models of hygiene practices application. When considered, errors in decision are only linked to knowledge deficit. The fact is that reasoning under risk or uncertainty is known to be particularly affected by systematic biases leading to errors in decision. For instance, many studies reported that small risks are often overestimated (e.g., Gilovich et al, 2002). The well-known framing effect is also a good illustration of the sensitivity of the reasoning process (e.g., Reyna & Brainerd, 1991). Second, both KAP model and socio cognitive models adhere to a rational decision making framework, in which decisions are based on a deliberate and quantitative analysis of risks and benefits. Data in the field of reasoning and decision making under risk or uncertainty reveal, on the contrary, that this kind of decision is often based on a qualitative rather than quantitative processing (e.g., Reyna, 2004). This qualitative or intuitive nature of reasoning may explain a part of the discrepancy between knowledge, intention and behaviors. Based on recent studies conducted in medical sector, we propose that a dual process theory of memory and reasoning under risk, the Fuzzy Trace Theory, could be used to address these two points.

In addition, FTT assumes that expert and novice reasoning are not affected by the same cognitive biases. This developmental trend is useful to study reasoning and decision of professionals and could be used to adapted trainings to individual needs.

The Fuzzy Trace Theory (FTT) was forged by Charles Brainerd and Valerie Reyna in the middle of 90’ to take into account some challenging data suggesting that memory and reasoning might be based on independent processes (see Reyna, 1995). This theory assumes that human reasoning about risk is more intuitive and qualitative than...
analytic. Two independent kinds of representation of risky situations are available in memory for reasoning, named verbatim and gist representations. The verbatim representations are precise representations of the details of the situation when gist representations are general representations of the core meaning. Relying on general representations is preferred because a large range of situations share the same meaning even if they differ superficially. Furthermore, researches based on FTT have shown that the use of intuition increases with age and with the development of expertise (Reyna & Brainerd, 1994, 1995a; Reyna & Lloyd, 2006). General representations used in intuitive reasoning are shared by more situations than detailed representations. Thus, experts use intuitive reasoning to attempt invariance, most situations sharing the same core meaning even if details are different. According to the theory, the analytic mode of reasoning is used only when intuition is insufficient to perform a specific task. Thus, reasoning is viewed as a ‘messy’ process. In addition to having knowledge, reasoning requires encoding the relevant problem facts, retrieving knowledge in long-term memory and applying coherently this knowledge to the problem facts (Reyna, 2010). Thus, errors in risk perception and risk evaluation are linked to a lack of knowledge, to a failure in retrieving knowledge, to biased representations and to processing interferences when applying this knowledge. Furthermore, because of the developmental trend of the preference for intuition, the fuzzy trace theory allows specific predictions in regard to professional expertise. Studying these developmental differences might be an important issue to increase risk perception of novice but also avoid specific errors made by experts.

1.2. A Comparison between experts’ and novices’ biases in risk evaluation

1.2.1. Methods to identify experts

Gold Standards and Subject matter experts

The simplest method consists in comparing individuals’ performances (decision, score, etc.) to a known correct value (a “gold standard”). This method can only be used in domains in which such values exist. This method is well illustrated by studies of medical diagnosis expertise. For example, level of expertise in recognizing normal or abnormal chest X-ray can be easily assessed by comparing professionals’ responses to known correct responses (Myles-Worsley et al. 1988). A similar method consists in building gold standard from responses done by subjects known and recognized as experts. Definition of expertise is in this case straightforward: experts are those giving the correct responses. Unfortunately, studying expertise is often needed in domains in which such values are least likely to exist (Gigerenzer et al., 1999; Shanteau, 1995; Shanteau et al., 2003).

Measure of experts known characteristics: pre-experimentation tests method

Because of this, the assessment of expertise has to be based on other indicators. Literature data show that experts share psychological characteristics across domains. Thus, a series of relevant experts’ features can be identified and used to expertise assessment. For example, experts have higher level of factual knowledge, are more consistent in their judgment of identical situations, and at the same time are more able to make discrimination between similar but not identical situations. All of these indicators can be used to determine if a subject is an expert. For example, in a famous study, Chi used factual knowledge about dinosaurs to separate children into ‘expert’ and ‘novice’ (Chi, 1978).

Some authors recommend to combine indicators. Weiss and Shanteau inspired by Cochran proposed to combine two measures to assess expert performances (named CWS index for Cochran, Weiss, Shanteau; see Weiss and Shanteau, 2001). As mentioned earlier, experts are more consistent in their judgments and are simultaneously able to make more discriminations than novices. These two conditions are necessary but not sufficient to determine expert performances. Thus expertise can be more precisely measured by making a ratio between a score of discrimination and a score of inconsistency (Shanteau et al. 2003).

Identifying experts with such methods is costly in time and involve the use of tests or screening before starting the study per se. The selection bias is also a limitation of these methods, due to the fact that relevant characteristics of experts are chosen by experimenter.

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1 The idea that experts used more general representations than novices is coherent with classical concepts of schemata (Bartlett, 1932), and experts’ functional representations (Ochanine, 1978). Each of these concepts considered that experts based their reasoning on simpler representations than novices.
Use of external indicators

More economic external indicators are often used to separate experts and novices. Experience (number of years of work) is an objective and accessible indicator of expertise, often used in industry. The fact that expertise develops with time and practice favors this criterion. Qualification and accreditation are often correlated with experience. Qualification can be used to decide who the experts are and who the novices are. Academic qualification or accreditation is used in studies comparing experts’ and novices’ performances. Psychiatrists’ performances have been compared with secretaries’ performance on the same task. Physicians’ performances can also be compared with those of sophomore or undergraduate students. This latter comparison is useful to separate knowledge acquired by experience (and practical application of knowledge) with theoretical knowledge.

Another method consists in asking peers who the experts are. Someone considered as an expert by peers in likely to really be an expert.

1.2.2. Hypothesis

Based on the Fuzzy Trace Theory principles, this study aims to understand how expertise influences food workers’ evaluation of sanitary risks. Good hygiene trainings courses are often based on a simple KAP model. In other words, trainings consist only in a dissemination of knowledge. When more complex sociocognitive models are used, a gap between intentions and behaviors is remaining. The Fuzzy Trace Theory of reasoning and decision making under risk allows us to predict that errors in risk evaluation are not only linked to lack of knowledge, but also to representational biases, retrieval failure of relevant knowledge and processing interferences. Furthermore, in theory, experts’ reasoning relies more on general representations than novices’ reasoning. This principle leads to specific predictions about how expertise will influence evaluation of sanitary risks. We hypothesize that novices will make more errors due to a lack of knowledge, and that their errors will be more important. Simultaneously, because expert reasoning relies on more general representation than novices, experts should be more affected by knowledge retrieval failure than novices.

2. Methodology

2.1. Participants

Two external indicators defined expertise in this study. Participants were chosen according to their qualification and experience.

One-hundred-eleven professionals of food business responded to a questionnaire about their evaluation of sanitary risks in catering. Participants were divided into three groups according to their qualification (36 operators, 37 managers, 38 auditors) and their experience (in each group, half of subject have less than 5 years of experience in job, more than 10 years of experience in job) \( (x^2(2)=1,65 \text{ p}=0,4373) \). We assume that Operators are the novices, Auditors the experts and that Managers are in an intermediate level of expertise. None of the 111 participants reported understanding difficulties during this study.

2.2. Procedure

Participants were formally informed of the aim of the study. They were also informed that participation was anonymous and voluntary and that around 30 minutes were needed in order to fill out the survey. Participants responded to the questionnaire in small groups in a quiet room, before training course sessions for managers and operators and during team meetings for auditors. The questionnaire was always administered before training sessions in order to avoid potential biases. Participants were instructed to complete the questionnaire with respect of the question order and that no corrections were possible after responding. Examples were then given. Participants were asked if all instructions were clear, then the questionnaire was administered.

2.3. Material

The 13-page questionnaire built for this study comprised 21 questions. Only 8 questions tested our specific predictions about effect of lack of knowledge and retrieval failure (see Appendix II); the remaining 13 questions were used as filling.

Source of errors

Errors due to a lack of knowledge

Four questions tested the effect of a lack of knowledge on sanitary risk evaluations. Two questions concerned the risk of viral contamination by manipulation of food; the other two concerned the risk of bacterial proliferation during the preparation of food (see Appendix III for more detailed presentation of questions). Questions of
each pair were separated by at least 2 other questions and were never on the same page of questionnaire.

Errors due to a retrieval failure of relevant knowledge

Even if professionals have the relevant knowledge, correct estimations of risk require retrieving this knowledge when reasoning. Errors due to retrieval failure occur when the relevant knowledge about risk is neglected. Four questions tested this source of error in professional risk estimations. In order to test retrieval failure and lack of knowledge separately, these four questions concerned simple risks addressed by the basic level of training. Two questions asked to professional workers concerned level of sanitary risks control in their business. The other two questions consisted in an evaluation of the risk for consumers linked to low temperature of hot food. In each questions pair, one question was asked in specific format that unpacked risk categories, and a global format without any specific cue. Global questions were always asked before specific ones (see Appendix IV for more detailed presentation of questions). The two questions of the same pair were separated by at least two non-related questions and never appeared on the same page of questionnaire.

2.4. Analysis

This study aims to test theoretical predictions of professionals’ biases in risk evaluation linked to a lack of knowledge and retrieval failure of relevant knowledge. Because we were not sure that a risk evaluation of, for example, “25%” on the scale has the same meaning for all participants, analyses were based on differences between risk evaluations given to questions of a same pair for each subject. These differences were expressed in percentage. Even if correct values do not exist, speaking about under or over estimation is possible because we knew the correct “rank” of a situation in comparison to another situation. For instance, we knew that hand washing is more efficient than alcoholic sanitizer on this kind of virus (for questions about contamination risk) and that the risk of bacterial proliferation is the same in the two presented situations (for questions about proliferation risk).

The distribution of these risk estimation differences did not satisfy the conditions for use of parametric statistical test. Therefore, we used non-parametrical analyses of Mann-Whitney, Kruskal-Wallis for inter-groups comparisons and the Wilcoxon test for intra-groups comparisons. These tests were the more adapted to test our hypothesis.

3. Results

3.1. Lack of knowledge

Viral contamination of food

Participants had to evaluate the risk of viral contamination of food linked to hand washing or hand sanitizer gel. We hypothesized that a lack of knowledge would produce an underestimation of risk in the situation with hand sanitizer use. This underestimation would be more important in novices’ group comparing to experts’ group.

We computed the difference between the evaluation of the two risks. This difference was expressed in percentage. Negative percentages mean that risks linked to hand sanitizer gels were underestimated.

First, we analyzed the distribution of responses regarding which hygiene method was considered the more efficient (the less risky). The proportion of correct responses increased with expertise. 45% of experts (auditors) considered that hand washing is less risky than hand sanitizer gel use. This proportion falls to 29,7% and 11,4% for managers and operators respectively (Figure 1). Response repartition differs significantly between groups (Chi2= 12.3298 p<.015).

Our second hypothesis concerned how this source of error affected professional, according to their expertise. Thus, amplitude or error was measured by computing differences between the two risk evaluations in each group. A Krustal-Wallis analysis reveals a significant general effect of expertise (H (2, 109) =8, 68 p =, 013). Risks were estimated around 30% higher with hand washing by the novices’ group (operators), while experts estimated this risk around 15% lower (correct answer). The intermediate group (managers) estimated the two methods at the same risk (difference is around 0%) (Figure 2). Comparisons between each group were made using Mann Whitney tests. These comparisons reveal significant differences between expert’s sensibility to error and novices’ one (U=402; p= 0,005).

This result confirms theoretical predictions assuming that a lack of knowledge produces errors in the estimation of risks. Our specific prediction about the effect of expertise is also confirmed. Novices made more errors than experts do.
risk for these two questions required a high level of knowledge. For these questions, the error amplitude differed significantly between the auditors and the other two groups. The analysis reveals a general group effect (H (2, 111) =9,396 p =.009). Comparisons between each group reveal a significant difference between Auditors and Novices (U=431,5 ; p=0,01) as well as between Auditors and Managers (U=426,5 ; p=0,003).

Experts made less errors linked to lack of knowledge than the others. The distribution of correct evaluation (ranking the two situations at the same risk) is more important for experts’ group of Auditors (around 50%) than for the novices’ group and intermediate group (30,6% and 21,6% respectively) (Figure 3).

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We performed two identical analyses to test our hypotheses for professionals’ biases in bacterial proliferation’s risk evaluation. The proportion of correct evaluation (ranking the two situations at the same risk) is more important for experts’ group of Auditors (around 50%) than for the novices’ group and intermediate group (30,6% and 21,6% respectively) (Figure 3).

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### Bacterial proliferation

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## Lack of Knowledge: Synthesis of results

Theoretical predictions about errors linked to a lack of knowledge are confirmed by our results. This kind of error decreases with expertise, and error amplitude is more important for novices than for expert professionals. Furthermore, when the level of required knowledge increases, the responses of intermediates’ group (Managers) and novices’ group (operators) no longer differ.
3.2. Retrieval failure of relevant knowledge

Manipulation of retrieval was made by asking the same question in global and in a specific format. The specific format contains retrieval cues, helping participants to retrieve relevant risk knowledge.

Auditors’ questions concerned all catering sites that they following when Managers’ and Operators’ questions concerned their own site of work. Then, auditors’ estimations were not compared to Operators’ and Managers’ evaluations for these questions.

Sanitary risks control

We hypothesized a difference in the estimation by professionals of the control of sanitary risks in their workplace, linked to a retrieval failure of risk knowledge.

Hypotheses were tested by comparing evaluations in global and in specific format. Wilcoxon tests reveal an overestimation of risks control in global format only for the Managers’ group (T=67.5; p=.018). Overestimation of risks control corresponds to an estimation of control higher in global format (without retrieval cues) than in specific format (with retrieval cues). Operators’ estimations of risk control were also higher for question in global format but this difference was not significant (Figure 5).

Risk estimation differs when the question format helps retrieval of knowledge. The control of sanitary risks is significantly overestimated in global format for managers, but not for operators. As predicted, experts are more affected by retrieval failure than novices.

Risk for consumers linked to low temperature of hot food

We asked professionals to estimate the risk of eating hot food maintained at a temperature too low. We hypothesized that this estimation may differ for questions in global format comparing to questions in specific format. We also predicted that this difference should increase with expertise. The global format question was an estimation of risk for any customer, when the specific question was phrased so as to help the respondent to retrieve the knowledge that specific consumers are included in the global formulation (‘any customer’ includes pregnant, infants and other people at risk).

Risk control estimation

Global and Specific Format

Figure 5: Estimation of risks control in workplace

Estimation of risk for consumers

Global and specific format

Figure 6: Estimation of risk of food poisoning

A Wilcoxon analysis of global and specific estimations reveals a significant difference in risk estimation for Managers but no significant difference for Operators. Retrieving knowledge that only some people are at risk in the overall population has significantly lowered the risk estimated for managers, and only slightly for operators (Figure 6).

Retrieval failure: Synthesis of results

Professionals’ estimations of sanitary risks are affected by retrieval failure of relevant knowledge. Furthermore, this kind of error becomes more important with expertise. These results confirm the fuzzy trace theory predictions. Preference for general representations and fuzzy processing of information (like in qualitative reasoning) increase with expertise. This increase made experts’ estimations more sensitive to retrieval failure.

4. Conclusion and perspectives

Studying expert performances have more general interests (see Kanheman, 1991, Shanteau and
Stewart, 1992). From our point of view, two are essential:

- **Generalization**: Most Judgment and Decision making Theories are based on non-expert populations. Therefore, studying expert reasoning is a necessary condition for the generalization of these results. Depending on the case, experts could be less sensitive, more sensitive or not sensitive at all to a decision or perception bias. Theories should integrate these results.

- **Improving performances**: the characteristics of expert reasoning and decision making can be used to improve novices’ performances. Another aim could be the improvement of expert performances themselves.

Risk is a central concept in traditional models of good hygiene application. These models adhere to a rational conception of reasoning and decision making and link risk perception mainly to knowledge. In this view, more expert professionals should have better risk estimations than novices. Using a theory of reasoning and decision making, we predicted that risk estimations will be sensitive, in addition to knowledge, to specific cognitive biases. We also predicted that these biases will affect experts and novices differently. As predicted, our results shown that experts make less errors linked to a knowledge deficit (an intuitive result) but are more sensitive to knowledge retrieval failure (a counterintuitive result). Experts are not immunized against cognitive biases in their risk estimations, and trainings could be more adapted to the level of professional expertise. Trainings designed for expert professionals should provide support to knowledge retrieval in addition to knowledge dissemination. Further studies will determine which training designs, for example the use of the ‘testing effect’ (to increase activation threshold), making training in work place (cueing in context) are able to improve retrieval of knowledge.

**References**


Knowledge deficit: A lack of knowledge is the simplest source of error in risks estimation.

- Scientific evaluations of sanitizer gels efficacy shown that traditional hand washing is more efficient to prevent food contamination by naked virus (like rotavirus, astrovirus or calicivirus) responsive for gastroenteritis.

- Provisional microbiology use precise mathematic models to simulate bacterial proliferation in different situation. This kind of model has been used to determine the risk of bacterial proliferation in our two experimental situations.

- **General predictions:** A lack of knowledge will be linked with an underestimation of risk of viral contamination with sanitizer gels in comparison with traditional hand washing and to an underestimation of bacterial proliferation in the common situation in comparison with uncommon experimental situation.

- **Specific predictions:** Experts will be less affected by knowledge deficit than novices. When level of required knowledge increase, developmental differences will be more important.

Retrieval failure of knowledge: error in risk estimation can be made with a good level of knowledge if this knowledge is not retrieve during reasoning.

- **General predictions:** Retrieval failure of knowledge will affect sanitary risks estimation. Professionals’ risks estimation of two identical situations will be different for question providing retrieval cues in comparison with question without retrieval cues.

Appendix II: Sources of error and theoretical Predictions
<table>
<thead>
<tr>
<th>Lack of Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viral Contamination</strong></td>
</tr>
<tr>
<td>A food worker has intestinal disorder (abdominal cramp, diarrhea) and thinks he has a fever. He decides to go to work but wears a mask all day.</td>
</tr>
<tr>
<td>He pays particular attention to his hands hygiene, and washes them whenever necessary.</td>
</tr>
<tr>
<td>To his hand hygiene, he uses hand sanitizer gel whenever necessary.</td>
</tr>
<tr>
<td>Assuming he’s really sick, what is the probability of viral contamination of food by his hands during a day?</td>
</tr>
<tr>
<td>0 is for “no risk at all”; 100 is for “contamination for sure” 0…10…..20…..30……40……50……60……70……80……90……100</td>
</tr>
<tr>
<td><strong>Hypotheses:</strong></td>
</tr>
<tr>
<td>Underestimation of risk of viral contamination of food when hand sanitizer gels are used.</td>
</tr>
<tr>
<td>Novices will be more sensible to lack of knowledge, producing more error for operators’ and managers’ than auditors’ groups</td>
</tr>
<tr>
<td>Overall, difference between risk estimations for the two situations will increase with expertise from negative to positive difference.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
## Appendix III: Questions and hypotheses

<table>
<thead>
<tr>
<th>Retrieval Failure of Relevant Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimation of sanitary risks control</strong></td>
</tr>
<tr>
<td>How much are you agree with this affirmation:</td>
</tr>
</tbody>
</table>

| « Procedures and good hygiene practices following in my job are sufficient to control sanitary risks? » | « Procedures and good hygiene practices following in my job are sufficient to control sanitary risks, that is: · biological risks (examples), · physical risks (examples) · and chemical risks (examples)? » | Estimate the risk of foodborne illness if a person, whoever she is, eats this food? |
| Not agree at all | 0 is for « No risk at all », 100 is for “very high risk” |
| 0...10......20......30......40......50......60......70......80......90......100 |

**Hypotheses:**

- Risk estimations will be different in global and specific format.
- Experts will be more sensible to this bias.
### Appendix IV: Results - Managers

#### Lack of Knowledge

<table>
<thead>
<tr>
<th>Risk of viral contamination</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A) Hand washing</td>
<td>45,92</td>
<td>27,44</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>B) Sanitizer</td>
<td>51,16</td>
<td>23,90</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>100*(B-A)/((B+A)/2)</td>
<td>16,58</td>
<td>42,72</td>
<td>Difference in %</td>
</tr>
<tr>
<td>Risk of bacterial proliferation</td>
<td>C) Food maintained at 7.5 °C</td>
<td>27,68</td>
<td>21,45</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>D) Realistic situation</td>
<td>18,47</td>
<td>18,62</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>100*(C-D)/((D+C)/2)</td>
<td>42,24</td>
<td>86,47</td>
<td>Difference in %</td>
</tr>
</tbody>
</table>

#### Retrieval failure

<table>
<thead>
<tr>
<th>Level of sanitary risks control</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Without retrieval cues</td>
<td>5,98</td>
<td>1,84</td>
<td>Control score/10</td>
<td></td>
</tr>
<tr>
<td>B) With retrieval cues</td>
<td>6,23</td>
<td>2,04</td>
<td>Control score/10</td>
<td></td>
</tr>
<tr>
<td>100*(A-B)/A</td>
<td>14,73</td>
<td>80,65</td>
<td>Difference in %</td>
<td></td>
</tr>
<tr>
<td>Risks for consumers when hot food is maintained at 59°C</td>
<td>C) Without retrieval cues</td>
<td>20,05</td>
<td>14,50</td>
<td>Risk in %</td>
</tr>
<tr>
<td>D) With retrieval cues</td>
<td>20,05</td>
<td>16,79</td>
<td>Risk in %</td>
<td></td>
</tr>
<tr>
<td>100*(D-C)/C</td>
<td>19,53</td>
<td>97,65</td>
<td>Difference in %</td>
<td></td>
</tr>
</tbody>
</table>

### Appendix V: Results – Auditors

#### Lack of Knowledge

<table>
<thead>
<tr>
<th>Risk of viral contamination</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Hand washing</td>
<td>53,24</td>
<td>26,31</td>
<td>Risk in %</td>
<td></td>
</tr>
<tr>
<td>B) Sanitizer</td>
<td>53,62</td>
<td>27,14</td>
<td>Risk in %</td>
<td></td>
</tr>
<tr>
<td>100*(B-A)/((B+A)/2)</td>
<td>-2,51</td>
<td>37,87</td>
<td>Difference in %</td>
<td></td>
</tr>
</tbody>
</table>

#### Retrieval failure

<table>
<thead>
<tr>
<th>Level of sanitary risks control</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Without retrieval cues</td>
<td>8,14</td>
<td>1,48</td>
<td>Control score/10</td>
<td></td>
</tr>
<tr>
<td>B) With retrieval cues</td>
<td>7,17</td>
<td>2,16</td>
<td>Control score/10</td>
<td></td>
</tr>
<tr>
<td>100*(A-B)/A</td>
<td>-7,38</td>
<td>44,22</td>
<td>Difference in %</td>
<td></td>
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</table>

#### Risks for consumers when hot food is maintained at 59°C

<table>
<thead>
<tr>
<th>Risks for consumers when hot food is maintained at 59°C</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C) Without retrieval cues</td>
<td>38,47</td>
<td>28,69</td>
<td>Risk in %</td>
<td></td>
</tr>
<tr>
<td>D) With retrieval cues</td>
<td>30,76</td>
<td>24,88</td>
<td>Risk in %</td>
<td></td>
</tr>
<tr>
<td>100*(D-C)/C</td>
<td>-6,08</td>
<td>69,60</td>
<td>Difference in %</td>
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### Appendix VI: Results - Operators

<table>
<thead>
<tr>
<th>Lack of Knowledge</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
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<tbody>
<tr>
<td>Risk of viral contamination</td>
<td>A) Hand washing</td>
<td>55,54</td>
<td>29,57</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>B) Sanitizer</td>
<td>49,64</td>
<td>33,26</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>100*(B-A)/((B+A)/2)</td>
<td>-28,65</td>
<td>69,32</td>
<td>Difference in %</td>
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<tr>
<td>Risk of bacterial proliferation</td>
<td>C) Food maintained at 7.5 ° C</td>
<td>60,28</td>
<td>35,16</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>D) Realistic situation</td>
<td>27,72</td>
<td>31,74</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>100*(C-D)/((D+C)/2)</td>
<td>87,97</td>
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</table>

<table>
<thead>
<tr>
<th>Retrieval failure</th>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
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<tbody>
<tr>
<td>Level of sanitary risks control</td>
<td>A) Without retrieval cues</td>
<td>7,80</td>
<td>2,22</td>
<td>Control score/10</td>
</tr>
<tr>
<td></td>
<td>B) With retrieval cues</td>
<td>7,51</td>
<td>2,45</td>
<td>Control score /10</td>
</tr>
<tr>
<td></td>
<td>100*(A-B)/A</td>
<td>22,05</td>
<td>155,7</td>
<td>Difference in %</td>
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<tr>
<td>Risks for consumers when hot food is maintained at 59°C</td>
<td>C) Without retrieval cues</td>
<td>41,19</td>
<td>29,28</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>D) With retrieval cues</td>
<td>38,50</td>
<td>31,18</td>
<td>Risk in %</td>
</tr>
<tr>
<td></td>
<td>100*(D-C)/C</td>
<td>11,85</td>
<td>96,32</td>
<td>Difference in %</td>
</tr>
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</table>
Potentials for health promotion at worksite: an intra inter cultural comparison of bus drivers’ ethnical foodscapes

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Abstract

Eating has an immense impact on our health, and the contribution of research literature that tries to understand and explain our food habits has grown considerably over the past decades. These studies have showed that in our eating behaviour, we interact not only with the physical environment but also with the social and mental environment. Food and eating has increasingly become an object of public governance, especially when we are eating out of home as part of our work or educational life. Interventions aiming at improve our eating patterns have become mainstream in many of our everyday life settings.

This paper explores differences and similarities in the foodscapes of bus drivers in a multi-ethnic worksite. Our objective is to identify possibilities for creating healthier food environments and provide opportunities for healthy living. We will analyse how different ethnicities perceive their worksite foodscapes and we will identify barriers that should be taken into account in the planning of food based innovations at worksites.

This study shows that the shaping of eating patterns evolves in a complex matrix of cultural, social, mental and ethnic influences and that worksites can play an important role. It reveals that a ‘one size fits all’ approach to food focused interventions, aiming at developing consistent mental, social and physical foodscapes for bus drivers, will almost certainly fail.

Workplace based health promotion activities in multiethnic environments need to take different health perceptions into account. This paper suggests that active involvement of the workforce, respect for diversity in health perceptions and in relation to norms regarding how health and food are valued, are key elements in the creation of new and healthier ‘ethnodishes’ in future health promotion interventions.

Keywords: foodscapes, ethnicity, workplace eating, food habits, inequality in health.
“Next to breathing, eating is perhaps the most essential of all human activities, and one with which much of social life is entwined.” (Mintz and Du Bois, 2002)

1. Introduction

Eating has an immense impact on our health, and the contribution of research literature that tries to understand and explain our food habits has grown considerably over the past decades. These studies have shown that in our eating behaviour, we interact not only with the physical environment, but also with the social and mental environment. As such, food studies as a broad framework for research, serves as a meaningful tool when aiming at understanding social life (Mintz and Du Bois, 2002).

Food and eating has increasingly become an object of public governance, especially when we are eating away from the domestic environment as part of our work or educational life. Initiatives, interventions and innovations aiming at improve our eating patterns have become mainstream in many institutions, organisations, schools and other everyday life settings. It is, therefore, important to understand how our food choices and habits are embedded in a complex matrix of social, cultural and physical artefacts. By so doing we will increase our understanding of food and meals as social praxis and be able to point more precisely to potential health promotion innovations.

Studies that apply a broad approach to the understanding of food and meals as social praxis have increasingly come to be known as foodscapes studies. These studies comprise a vast array of research that holds the potential to better inform health promotion innovations and interventions. Foodscapes can be understood as patterns of: “...how we live our lives with food, according to food and through food” (Dolphijn, 2004).

The aim of this paper is to study how ethnic background in a worksite context plays a role in the shaping of food choices and the creation of foodscapes. It aims, moreover, to show how understanding norms regarding the valuation of health and food in different ethnic groups can illuminate cultural identities, identities which are essential to take into consideration when planning food-related health promotion activities at workplace. The case material that forms the empirical basis of this research was collected in the initial stages of a health promotion project, which had bus drivers in Denmark as its target population.

By studying this case, we will explore how the interaction between food preferences, health perceptions and ethnicity seems to shape distinct foodscapes within bus driver workforce.

In Denmark, as in other countries, the bus driver workforce is characterized by a high diversity in ethnicity, low levels of education and a high percentage of male workers. So, the drivers belong to a group that has an increased risk of developing health problems, diseases and disorders, such as obesity, metabolic syndrome and diabetes type II (Tse, 2006; Marmot, 2006; Poulsen, 2004; Poulsen et al., 2007). Research regarding food at work and bus drivers thus holds the potential to contribute positively to address social inequalities in health.

In this paper, we unfold the different elements of the bus drivers’ foodscapes, building up a more consistent picture of how the social practice of food and eating at a multicultural worksite can be understood.

2. Theoretical framework

Food and eating is deeply embedded in a matrix of social, cultural and ethnic influences and this embeddedness plays an important role in the enactment of eating as a social practice of everyday life. This is a fact well described in the literature (e.g. Mintz and Du Bois, 2002). In this paper we aim to understand eating at work as an everyday practice and therefore we need to take a broad and open theoretical approach as our point of departure.

We apply a broad understanding of health and recognize that health is not merely a matter of complete physical and mental balance but a matter of seeing health in an everyday perspective as suggested by the WHO. In particular, we understand the workplace as a setting where health is created and lived. As such, the study applies a holistic and everyday life view on health and health promotion, in accord with the definition given by the WHO: “Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love” (Ottawa, 1986).

By exploring the bus drivers’ foodscapes, we do not aim to arrive at precise definitions of healthy diets for bus drivers or assessments addressing whether or not bus drivers in our study eat healthily. We aim, rather, to offer a snapshot of how health is staged in everyday life on the road and how the influence of knowledge about healthy eating seems to dissipate in the bustling hours of working. More precisely, we are interested in how the emerging agenda of healthy eating at work
Influences the foodscapes created in the everyday work life of multiethnic workforces.

The broad understanding and definition of health forms the foundation of this study, whilst we draw further inspiration from the broad methodological framework provided by foodscapes studies. Foodscapes studies have been spreading rapidly over the last decade and consist of contributions from various scientific fields (Mikkelsen, 2011). These contributions aim at developing a more robust understanding of food, people and places and the interaction among them. There is broad agreement that such understandings must go beyond a simple nutritional focus, to a focus on a broader everyday life based perspective. This broader perspective might, for example, capture norms, politics, discourses and factors linked to ethnicity.

In our recent work on foodscapes, we have brought a number of the contributions in the field of foodscapes studies into play and we have been looking at those contributions from a health promotion perspective (Nygaard et al., 2013). The aim of that work was to further develop both a methodological and theoretical framework necessary for capturing the reality of complex social practices related to eating at work. Foodscapes studies seem to offer some significant answers to the important question of: What happens when people, places and food interact in a captive environment and how can better understanding of these interactions contribute to the development of better food related health promotion interventions?

Foodscapes, as a notion seems: “Well suited to express people’s views and ideas of their surrounding food environments and how they should be: “foodscapes implicates the multiple informative historic and contemporary personal, social, political, cultural, and economic forces that inform how people think about and use (or eschew) food in various spaces they inhabit” (Adema, 2009 cited in Mikkelsen, 2011).

In this paper, we use the foodscapes notion to take a closer look at how social, personal and cultural factors interact and form the way in which bus drivers perceive food and healthy food choices in relation to their ethnicity.

As a method to illuminate notions of foodscapes, cultural comparison serves as a meaningful tool. We use cultural comparison to shed a light on factors that for the culture itself seems to appear banal. When compared with other cultures such structures will reveal themselves and it thereby becomes possible to explore their nature as well as the possibilities for changing them. Cultural comparisons within the area of food studies have mostly focused on differences and similarities between countries (e.g. Rozin et al., 1999 and 2003). Globalization and the emergence of large scale migration does, however, entail that the possibility of looking at differences and similarities deriving from ethnicity is now also viable within countries. Ethnicity in this sense becomes not only a matter of where you were born and where you live, but also a matter of perceived affiliation. Such affiliation emerges through kinship, locality and from the people with whom you live and work, irrespective of nationality.

“The central paradox of ethnic politics in today’s world is that primordia (whether of language or skin color or neighborhood or kinship) have become globalized [...] this is not to deny that such primordia are often the product of invented tradition [...] or retrospective affiliation, but to emphasize that because of the disjunctive and unstable interplay of commerce, media, national policies, and consumer fantasies, ethnicity, once a genie contained in the bottle of some sort of locality (however large), has now become a global force, forever slipping in and through the cracks between states and borders.” (Appadurai, 1996)

The focus on food serves, in the present study, to capture this ‘globalized ethnicity’, the ethnoscape in Appadurai’s sense. It acts as an aid to understanding how food habits are rooted in the past and the subject’s perception of their historical identity. How these perceptions are, or are not, accommodated in their work and workplaces, serves as a means to create a better platform for health promotion activities. By looking at food and ethnicity we aim to get a new and unique insight into the fact that food habits and patterns consist of historical affiliations that, through migration, tend to get interwoven with other food cultures.

The theoretical framework of the present research is founded on contributions from health promotion research, food studies and work on ethnoscapes. In combination they contribute to opening up the field in question and by providing opportunities for applying multiple perspectives, which through focus on interaction processes, enables us to move beyond looking at things in isolation. However, the focus on food, ethnicity and health serves as a guideline into the analysis. As such, we are not interested in any particular health behavior or any kind of expressed affiliation, but we focus, rather, on where food or food perception comes into play, as they are used to establish and organize meaning in the narratives of the bus drivers.

3. Methods
In order to present the results, we draw on the idea of ‘mental foodscapes’ (Bildtgård, 2009). This refers to the understanding that people mentally seem to lean towards certain shared understandings of the “cuisines” they admire. In our exploration of the bus drivers’ foodscapes, it became clear that, despite minor variations in the phrasing, all refer to the same overall discourses of health and healthy eating. Furthermore, they all consider their own eating habits in the light of these discourses. The drivers do not make explicit what a healthy diet is with respect to the ingredients or nutritional content. Instead, the reference to health serves as a discursive cultural backdrop in which ‘we’ all supposedly refer to and understand health in more or less the same way. But given its more or less implicit nature, it is of interest to explore how the drivers then define health and link it to ethnicity, food and the structure of the work.

The headlines serve to show the overall ‘theme’ (Andersen, 2005) of how the drivers in the group would foremost describe themselves and their eating patterns.

4.1. Somali: rice and meat

“I do not eat healthy, that is our culture – we are that way.” (Omar, Somali bus driver, age 44)

As this quote shows, the Somali bus driver links unhealthy eating with some kind of deterministic sense of culture. Unhealthy eating then becomes just a part of being Somali and this view is reinforced in the fatalistic last words: that it is just the way they are. The nature of their eating patterns derives from what they themselves call traditional Somali dishes composed of meat and rice. One driver describes how coming to Denmark initiated a learning process in which he slowly changed his norms of what a proper meal should consist of. He points out that in his early days living in Denmark, he felt that: “If I ate bread or open sandwiches, I felt that I hadn’t eaten at all! [...] Rice and meat it tastes good” (Hassan, Somali bus driver, age 53). As such, he points towards the understanding that a proper meal is judged according to the taste. If it does not taste good, he has the feeling of not having eaten at all.

However, after living in Denmark for a period of time, the Somali bus drivers feel that their habits are slowly changing. Even though they hold on to the perceived fact that the “unhealthy food tastes better” (Mohammad, Somali bus driver, age 47), they also experience that, given time, knowledge and examples they can develop a taste for

It is a traditional Danish lunch, which consists of dark bread (rye, sourdough) with different kinds of toppings.
‘healthy’ food. Health in this sense becomes both: a matter of integrating national Danish health advice regarding the importance of consuming vegetables, fruit and wholegrain products – for instance, by adding vegetables, which they have never seen in their home country to the traditional meat casserole – and surprisingly, it also becomes a matter of eating ‘Danish’ – here in terms of eating the traditional open sandwiches.

Although the Somalis tend to hold on to the link between good taste and unhealthy foods, this is slowly changing. They indicate the intention to adjust their diet to include more vegetables in a traditional Danish direction, though it remains more an ideal than something actually incorporated into their everyday eating habits. At the same time, they believe in the possibility of behavioural change, seen, for example, in their references to the TV shows of Jamie Oliver as an indicator of the possibility to change habits. As such, the ability to develop a taste for vegetables and wholegrain products is, at this stage, more a desire than a referral to actual behavioural change.

A further issue with respect to the extent to which Somali drivers are active agents in behavioural change rests in the fact that the Somali drivers – all men and all married – do not cook for themselves, but eat “whatever the wife makes” (Omar, Somali bus driver, age 52).

Even though the Somali drivers feel a slight change in their norms, they also feel that it is difficult for them to integrate new knowledge into their eating preferences. The bus drivers mention that most of the fruit and vegetables displayed in a Danish greengrocer or supermarket were unknown to them before they immigrated and they do not know where to go to buy alternative wholegrain products to substitute regular pasta and rice.

Another struggle for them is their sense of a shift from a nomadic way of life to a sedentary work and lifestyle. Although one might expect such a shift to decrease their energy need, this does not seem to be the case. It seems that a common experience is that: “Bus drivers are hungry all the time!” (Hassan, Somali bus driver, age 53). And, as one driver very figuratively puts it, the consequence of that becomes that, during working hours, “I do not decide what to eat, my stomach does” (Omar, Somali bus driver, age 53).

As such, their weight problems can be viewed as a result of changes occurring in their levels of activity in their new setting and concomitant troubles with changing eating habits that allow them to adapt to these radical transformations. This struggle seems to lead to an overall feeling of not being in charge of one’s own eating habits. They link it both to lack of knowledge – for instance knowledge about what is healthy, where health products can be bought, how they have to be cooked etc. – and the feeling that their food choice is deeply embedded in their body and not in their the rational mind.

Generally speaking, the drivers from Africa are also the group that experience language barriers the most. When we interviewed the Somali drivers the process was complicated by their high degree of mistrust. They wondered whether or not we were sent from either the government or the management to check if they were good workers or good immigrants. As a result of these language barriers and the sense that, as immigrants, their behaviour was being continually monitored, they seemed, as a group, reluctant to seek the information they needed or wanted in order to improve their diets – for instance by including vegetables or wholegrain in their diets. This forms special kind of Somali foodscapes where the sedentary nature of the work, the current official health recommendations and the perceived fact that they, as Somalis, just ‘are that way’ keep the drivers in a form of locked position. A position which they do, however, feel is slowly changing.

4.2. Pakistanis: “we eat too much!”

The Pakistanis, contrary to the Somalis, consider their traditional Pakistani dishes as healthy. For them healthy diet is about the ability to control their dietary intake. These bus drivers draw upon advice, experiences and knowledge gained in their home country and in their late childhood/early adolescence when they reflect upon what is needed to stay healthy. As a Pakistani driver expressed it:

“I have always concentrated on the idea… keep reminding myself, what do you say, not to become overweight. But actually we had a schoolteacher in charge of our cricket team, who would tell us not to become overweight as otherwise we would not be able to perform well.” (Usman, Pakistani bus driver, age 61)

Even though some of the bus drivers have tried to pursue cricket as a pastimesport in Denmark, this has failed. This is, as they describe, mostly due to their shifting working hours, both in the bus business and in their former jobs, where some of them worked in family grocery stores. Cricket is not a big sport in Denmark so the shifting working hours make it difficult to join existing teams.

The preceding quote does, however, stand in contrast to another ethnic ‘fact’ that Pakistanis frequently mention. This refers to the fact, as the drivers describe it, that in Pakistan it is a status
symbol to eat much and become bulky. So, the Pakistani bus drivers are left in a "no-man's land" in their new setting where, on one hand, the status symbol of being bulky has vanished and on the other hand, the lifestyle and surroundings, which would support a lifestyle enabling them to remain slim, have vanished as well. This paradox results in different strategies that enables them to cope with these new mental foodscape created in their new surroundings.

Generally speaking, Pakistani bus drivers possess good Danish language skills, they are well educated and most of them can refer to and incorporate the current dietary guidelines into their diet. In this sense, they feel more in control than the Somalis do, but unlike the Somali bus drivers, the Pakistanis are more focussed on their own agency, as illustrated in the following quote: “I think I am somehow a bad person, I think, because of my laziness” (Abdul, Pakistani bus driver, age 43).

In contrast to the Somali bus drivers, who focus on structural change and knowledge deficits, Pakistanis feel that they are responsible for their own health status. It is not the workplace and the health system that have to ensure their good health. They hold a 'blame the victim' attitude rather than a belief in the need for structural change. As a consequence of this perceived responsibility, they create different forms of strategies to stay healthy or at least slim. One of these strategies derives from what they learn at cricket classes in Pakistan, where cricket teaching informs them that they should eat less in order to control weight. In the setting of a Danish bus company, that stored health advice turns into not eating during work hours in order to keep the daily intake low. Pakistani drivers perceive traditional Pakistani food as healthy. For them, it is not the food itself that is unhealthy, but rather the amount.

4.3. The Danish: health is a matter of balance

The Danish drivers showed a much more open attitude to being interviewed about health issues in comparison to the Pakistani and Somali bus drivers. To them, being interviewed was looked upon as a nice interruption in their daily routine and they anticipated, moreover, that the overall health promotion project could lead to improvements. As a result, the Danish bus drivers were the only group where there were too many candidates for interviews. This stands in contrast to the other groups where we had had to ‘hunt down’ interviewees. As a group the Danish drivers perceived themselves as relatively healthy and that may explain why they seemed more eager to talk with us and to tell us about health issues.

The Danish bus drivers’ perceptions of their worksite’s foodscape represent an example of how drivers try to translate health discourse into concrete praxis in everyday workplace settings. They present themselves healthy and in balance, even though some of their behaviours, considered by them to be healthy, would be categorised as extremely unhealthy in a medical sense.

The drivers we interviewed were all physically active and slim and none of them felt that they had severe health problems. Of course this does not necessarily mean that they comply with the national guidelines for healthy living, but rather that they somehow feel in control of their own health status and lifestyle. It means, moreover, that they manage to create strategies and explanations for their health behaviour practices, which make sense to them in their health perspective – even though three out of the four interviewed Danish bus drivers were heavy smokers.

To them, health and healthy eating were not seen as a matter of eschewing risk factors but more as a matter of paying attention to their body. As one of the drivers explains:

“You have to pay attention to your body; you must do things that you feel like doing. Willing hands makes light work. It has to be con amore or else – if it becomes something you force on yourself, it will never come effortlessly and naturally.” (Ole, Danish bus driver, age 55)

This understanding is shared by the Danish bus drivers, both when it comes to physical activity and when it comes to healthy eating. All four interviewed persons reported to live a life with a high degree of physical activity, which they practice for pleasure rather than because they feel they ought to. This also holds for a healthy diet. As a contrast to the Somali drivers, the Danish describe a direct link between healthy taste and healthy food. The latter is, however, understood with slight differences between the four drivers, with only the limitation of fat and sugar intake as a common ground. When they talk about their diet and how they balance it, one emphasises quality, freshness and taste as a means of staying healthy, whilst another puts greater emphasis on homemade food or food prepared in the ‘good old fashion way’. In all these aspects of perception of healthy eating, it is not the nutritional value of the food that is being articulated. The focus is, rather, on how health and the idea of 'good food' are intertwined in their everyday life. Danish drivers’ overall notion of healthy living is a matter of balance. This even holds true when some of the behaviour, in a medical sense, can be categorised
as unhealthy. A paradoxical consequence of this is that an 'unhealthy' lifestyle, such as smoking, can actually be cast as a healthy behaviour since it serves as a counter to the risk of being 'too' healthy. One of the drivers proposed that smoking actually serves as the means to balance his lifestyle, as he says:

"Health? It implies several things, mental health and physical health, and you might divide it into several different ways: exercise, general lifestyle, what you eat in particular and, yes, it's an interaction between all these things, and we should have a little bit of the bad stuff too, right? Therefore, I have taken the liberty to continue smoking just to maintain the balance."

(Ole, Danish bus driver, age 55)

Even though the Danish bus drivers focus on individual lifestyle as the way of staying healthy, they also take the work structure into account. One driver explained that he sometimes experiences difficulties in the communication with the people in charge of planning his work schedule. The driver in question is a single parent and makes mistakes by the office in his schedule mean that he will not be able to pick up his daughter from school in time. These occurrences make him conclude: "When this happens it makes no difference what you eat and how healthy that is. Then it's just tough!" (Preben, Danish bus driver, age 55). This refers, once more, to the overall notion of balance. If structures at work tip that balance, it really does not matter if diet or other lifestyle factors are healthy or not.

**5. Discussion**

The foodscapes that emerge through the data from the interviews show similarities as well as differences when seen across the spectrum of the ethnic groups in the case. This provides an ideal point of departure for the development of interventions that can be a support to improve health at workplaces.

The data clearly shows that health and understandings of health play an important role in shaping norms of eating patterns and the mental foodscapes that seem to be guiding those patterns. These norms are not restricted to being unfolded, expressed and talked about in the private sphere alone. Against the background of a new health agenda that has gradually been developing over the past decade, these norms and underlying mental foodscapes are increasingly colonising the worksite. As highlighted in the WHO's Ottawa Declaration, "health is lived and perceived within the setting of our everyday lives." And, one could add, so is ethnicity. What is new is that employers are increasingly incorporating health in their human resource strategies and as a result in operational procedures related to food and physical activity.

A particularly interesting notion in the analysis is how the drivers draw upon understandings and strategies from their home country. When migrating they try to incorporate new health advice into the eating patterns they develop based on the culturally rooted mental foodscapes that they bring along. For instance, the analysis showed that Somali drivers developed outlines of mental foodscapes accommodating wholegrain, bread and vegetables, all which is quite new to them.

The framework of food- and ethnoscapes allows us to disclose new interactions and relations between different ethnicities at the workplace. In our study, the Danish bus drivers stand out positively when it comes to perceived health status and health behaviour. Unlike the non-Danish drivers, they seem to have developed a liking for healthy living. The data does not, however, give any indication as to whether this can spread across the social foodscapes of drivers through social interactions or whether the ethnoscapes dividing the drivers act as a barrier.

The study shows that the culturally rooted mental foodscapes that drivers bring along gradually begins to come under pressure when they meet the reality of the workplace and the foodscapes that are evolving in that setting. Health and health behaviours seem to be rooted in the mental foodscapes that drivers develop and are clearly linked to ethnicity. They seem to be acting both as drivers and as barriers for healthy lifestyles. For Pakistanis, for example, the lost opportunity for playing cricket is a concrete barrier to maintaining previous levels of physical activity.

The data reveals some patterns of how traditional national dishes (ethnodishes) interact with health discourses and Danish 'ethnodishes' forming new health discourses and practices. This is, for instance evinced in the liking and validation of the traditional Danish lunch as a proper meal to the Somali drivers. The results suggest that bus drivers develop a variety of strategies on how to incorporate health and healthy living into their everyday work life.

**6. Conclusion**

Looking at ethnicity and food habits, not strictly linked to locality, it is interesting to make further attempts to understand what happens to perceptions of food and to health when combined with migration. It is also noticeable how understandings linked to ethnicity – in interaction
with a new setting, the structure and the nature of the workplace – forms both openings and closures with respect to the possibility of obtaining a healthy life.

The data also show that ethnicity, when it comes to health and healthy eating, is not strictly linked to locality or primordia. As a consequence, it seems increasingly important to continue to develop new methods and tools that can help us grasp and capture how perception of ethnicity and health, taste and valuation of ‘good food’ interacts in specific settings. Understanding how these interactions form new kinds of ethnoscapes, ‘ethnodishes’ and foodscapes will help inform future health promotion activities and interventions.

This study clearly shows that the shaping of eating patterns evolves within a complex matrix of cultural, social, mental and ethnic influences. It also shows that a turnkey and “one size fits all” approach to developing new foodscapes in workplaces will almost certainly run into problems. The inference to be drawn from this is that new developments in the food area must be developed using a participant approach and that it is very important to recognise that food and eating at the worksite cannot be treated in isolation without taking the working conditions into consideration. As such, the agenda on healthy eating must also take into account the broader understanding of health at the workplace, including occupational safety and health.

The methods of combining ethnographic methods and the theoretical framework of foodscapes, ethnoscapes and health set a focus on diversity, both in health perception, health behaviour and the structures that lies behind food preferences. The complexity in the ethnic foodscapes points, retrospectively, to some of the factors that could explain why health promotion activities regarding food at the workplace fail to succeed when using a ‘one size fits all’ approach.

By way of overall conclusion this paper suggests, therefore, that health promotion activities at a workplace comprised of an ethnically diverse workforce need to take different health perceptions into account in order to increase the potential for success. It seems likely, therefore, that the secret of health promotion planning is to be found through genuine active involvement of the workforce. This is essential in order to capture the diversity in health perceptions and food norms, and thereby identify how these can be used as a platform to transform and create new ‘ethnodishes’.

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Exploring ‘foodscapes’ as framework for intercultural comparative studies

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Abstract

How can the relationship between food and place be explained in a globalised and de-territorialised world, in which it seems as if the ties between food and place are being weakened? The aim of this paper is to discuss this overarching question through a work-in-progress on the methodological challenges encountered in establishing an analytical framework for a comparative study of France and Denmark. The approach is essentially explorative taking as point of departure the nature of comparative studies and reflecting on challenges in identifying differences and similarities among groups of people. The core question regarding intercultural comparisons seems to be how to apply methodologies that are sensible to cultural contexts without turning them into clichés. A smaller study in Paris and Copenhagen is used as an example, in which the concept ‘foodscapes’ is being applied as an analytical tool to explore the construction of narratives and the role of the researcher, and thus forming the first steps in capturing the complex dimensions of the relationship between food and place

Keywords: foodscapes, comparative study, food culture, de-territorialisation, authenticity.
1. Exploring ‘foodscapes’ as framework for intercultural comparative studies

The aim of this paper is to discuss methodological challenges encountered in establishing an analytical framework for a comparative study of France and Denmark in the field of food studies. It is a work-in-progress, in which the initial steps in exploring the complex relationship between food and place will be taken.

The background of the paper is an analysis of public-private partnerships in health promotion and obesity prevention in EU27 that showed similarities in the content of initiatives in so far as they are predominantly based on nutritional values and carried out as health education and information. There is little mentioning of ‘food cultures’ even if the founding papers from WHO put emphasis on the respect for the cultural contexts of each country (WHO, 2006) and suggest that traditional food cultures might help people obtain healthier diets (WHO, 2008). In other words, traditional patterns of eating are assumed to have an impact on health, but are nevertheless absent in the initiatives carried out within the framework of health promotion and obesity prevention in the EU. This absence led to questions such as: What is a ‘food culture’? Is there a genuine link between food and place? How can the question of ‘food cultures’ be approached in a world, in which food seems to become globalised? What is the position of ‘food cultures’ in the larger political framework for public health?

The focus of this paper is the initial steps in establishing an analytical framework for the comparative study. In the first section, preliminary reflections on the nature of comparative studies will be presented. This leads to deliberations on differences and similarities based on fieldwork in Paris and Copenhagen that will be outlined in the second and third section along with a more detailed description of the methodological tools. As the gathered information reveals ambiguities in terms of difference and similarity, the following section will turn towards questions linked to the challenges that the perpetual movements of persons, commodities, money, ideas and information create for the link between food and place. These reflections will be followed by a presentation of the concept ‘foodscapes’ and a discussion of the possibilities for using the concept as an analytical framework. The discussion will be followed by concluding remarks on the perspectives that ‘foodscapes’ open and suggest paths to be followed.

2. Preliminary reflections on the nature of comparative studies

In the field of food, intercultural comparative studies are carried out, either as comparisons between groups of individuals in different countries (Fischler & Masson, 2008; Shields-Argèles, 2004; Men nell, 1985) or as comparisons between practices of eating pertaining to specific groups within the population of a country (Murcott, 1997; Buckser, 1999). This means that intercultural comparisons are based on the assumption that essential differences can be identified when studying specific research problems across countries or across segments within countries. In other words, in the case of food studies comparisons are based on the assumption that specific ‘food cultures’ can be identified among specific groups of individuals or in specific places.

However, the concept ‘culture’ raises difficulties. Cultures are hardly simply there in the sense of being readily available for definitions of particular practices (Appadurai, 1996) as if cultures were unchangeable or fixed in specific places (Gupta & Ferguson, 1997). Hence, one of the challenges in the conduct of comparative studies is to apply methodologies that are sensitive to cultural contexts without turning them into clichés by creating stereotypes.

3. Difference and similarity

Comparing is ultimately about identifying differences and similarities (Spiggle, 1994), which - in the case of intercultural comparisons - is inevitably an attempt to establish a dichotomy separating one group of people from other groups of people. Studies indicate that cultural oppositions are easily recognisable when exploring citizen’s relationship to food in different places (Fischler & Masson, 2008) and such oppositions are no doubt informative. However, the risk of tailoring findings in a way that supports a presumption of significant differences across national or regional borders is imminent. Despite this risk, the starting point of the present study has nevertheless been the assumption that places and cultural production – in this case food – are connected, and that the connection is observable. This does not imply that the connection should in any way be fixed or naturally given. It is merely a starting point for a description of the ways in which the relationship between place and food appears.

A small study was carried out in Paris and Copenhagen in order to put in place a methodology for the collection of information and to develop the framework for the subsequent analysis. It is well documented that the collection of information through surveys and interviews has limitations in terms of accuracy (Gram, 2010;
Kohlmeyer, 1994) and it is known that observation is likely to change the behaviour of persons who know they are being observed (Barrett-Connor, 1991). These insights indicate methodological challenges and suggest that developing new approaches for the collection of information is imperative. Consequently, an explorative approach was preferred and the small study was carried out through observation as a combination of focalisation (Olivier de Sardan, 2008) and an approach inspired by literary works, in which the observer strolls through urban landscapes in order to take in the feel of the place (Parkhurst Ferguson, 1994; Baudelaire, 1964/1863). This combination of observational approaches permitted to remain open to the context, something that would not have been possible if the precise focal points had been decided in advance. Furthermore, the open approach made it possible to adjust according to findings as the larger study required moving back and forth between France and Denmark.

A first step was getting familiar with the cities by the use of the outlined approach to observation. This process started with acquiring a broad picture by walking the streets, visiting markets and shops, observing cafés and restaurants, watching interpersonal relations unfold in association with food, looking at advertisements in newspapers and magazines as well as at the stations and in the streets of different neighbourhoods at different times of the day. Then followed a process of reciprocal action of zooming in on focal points and floating observations of the broader picture until details were in place, permitting a preliminary analysis. This analysis led to the formation of three categories of information well suited for establishing an initial order permitting the step from observation to description: physical places in which food was present, processes through which food and people were related and virtual representations of food in public spaces.

4. Paris and Copenhagen

The immediate impression of the position of food in the Parisian street scene was the abundance of markets for fresh food products. Differing from neighbourhood to neighbourhood, the local markets on the left bank of the Seine came across as offering mainly French produce of the season, the exception being the part of the 13th arrondissement, in which citizens of Asian, primarily Chinese, descent form the majority of the population. On the right bank, the general impression was that of a larger variation as neighbourhoods are generally more diverse. In Copenhagen, the position of food markets seemed more parenthetic with scattered fish stands and a single farmers market open on Saturdays. One exception, though, was the re-opened central market; a permanent marketplace with attached picnic areas and coffee shops that seemed to invite to lingering rather than to purchase food. Drawing the line between markets and specialty shop was rather difficult in Paris as it seemed common to have shops opening up into the street and, hence, a breakup of the demarcation between public spaces and private business. Such indistinct boundaries were not the case in Copenhagen, where entering the shops in order to purchase food was mandatory. However, markets and specialty shops were only part of the picture in both cities as supermarkets of all imaginable sizes took up considerable space. Contrary to the markets where the food items were displayed in a way that permitted the buyer to see, smell and feel the food, the majority of the food items in the supermarkets were packed and, hence, offered very limited sensory impressions. The large offer of processed food was characteristic for supermarkets in both cities. Some of these products were manufactured in the respective countries, but products from multinational beverage and food industries were widely available in both cities.

But food was not just present in physical places. Food seemed also, and perhaps even more importantly, to be the focal point of processes through which people were related. A blatant difference between Paris and Copenhagen took place every day during the workweek at approximately 12h30: At that time of the day Parisian restaurants filled up with groups of people going out to have lunch together. This synchronised pattern was not found in the street scene of Copenhagen, neither was the seemingly ingrained commensal model of larger groups sharing a meal. However, the multinational food chains represented corresponding patterns in the two cities with primarily young people cueing up throughout the day buying take away foods. In both cities, they often left the place in pairs or in groups, each person carrying their own burger or wrap. Whether this can be called a commensal pattern remains an open question, but in any case it is different from the model of sitting around a table with the purpose of sharing a meal. The use of cafés bore resemblances as they were obviously being used both as meeting places for work and for leisure in both cities.

As for the virtual representations of food in public spaces and in magazines and newspapers concurrent but contradictory messages were found in both cities and were strikingly similar. On one hand, conflicting messages were expressed through images of ideal bodies in coloured magazines and food advertisements urging the
target audience to eat more. On the other hand, magazines and billboards offered images creating narratives of ‘authentic’ food through references to place-specific products or ancient recipes, while concurrently advertising for products from the agro-industry that could have been produced anywhere in the world. One example of virtual representations of food stood out, however. Menus in restaurants were in general quite diverse, both in terms of offer and in terms of price. The availability of lunch deals at a low price in Paris stood out against the pricier menus in Copenhagen. Furthermore, it was striking that children’s menus were commonplace in Copenhagen, whereas they were found in relatively few places in Paris

5. De-territorialisation

Even if these examples are limited in scope and the nature of the information is that of ‘first impressions’ gathered through months of living in the two cities, the study points towards a complex relationship between food and place that seems to escape an analysis based exclusively on an outline of cultural difference. There are differences indicating the existence of a connection between food and place, something that may be named as ‘food culture’. But at the same time there are similarities that speak against such a link and point towards movements making people in different places act in similar ways and purchase foods that are available worldwide. In a certain sense, these movements seem to cause consumption of foods that may be called ‘place-less’ as they could be produced and consumed anywhere in the world. Hence, such foods challenge the idea of ‘food cultures’ and server the ties between food and place.

From a theoretical point of view, the similarities are interesting. They may be explained in terms of displacements, that is a separation of place and cultural product (Lie, 2002), but displacements of foods have been known throughout history (Montanari, 2010). An example could be potatoes that are commonly seen as a basic ingredient in both French and Danish cuisines, but have nevertheless been introduced in France as late as in the 16th century when explorers brought potatoes to Europe from the new world (Hawkes & Francisco-Ortega, 1993) and in Denmark in the 17th century (Ax, 2009). The difference between former and current displacements is the scale and the speed with which they have increased over the past decades, not only due to mass migration of people (Appadurai, 1996), but also because of a global market, in which multi-national corporations can distribute homogenised foods at an increasing speed (Lang & Heasman, 2004). At the same time as the increased mobility of people and resources is taking place, ideas and information are moving rapidly due to technological changes and, hence, a complex flow of changing dynamics is challenging the idea of cultures as stable structures. This means that physical displacements are supplemented by processes of de-territorialisation, which is, in this context, to be understood as complex movements that re-configure the ties between places, cultural production and ideologies (Appadurai, 1996).

Together, displacement and de-territorialisation cause altering of discourses. With regards to the relationship between food and place, the use of terms like ‘authenticity’ or ‘terroir’ may serve as examples of substitution of the meaning of the terms that has changed the narratives of the relationship between food and place. In a French context, the link has traditionally been understood in terms of the human shaping of a product that made it this particular product, grown and processed in this particular place (Ramburg, 2010) and with expectations of a certain quality. However, such narratives of the ‘goût du terroir’ or the ‘authentic product’ from a specific place have been supplemented by narratives, in which the correlation between place and food product lacks the rootedness in the ‘savoir-faire’ that is the foundation of the quality of the food product (Bérard & Machenay, 1995). Hence, the ‘new’ narratives are concrete examples of the challenges encountered in attempting to link food and place: a traditionalistic view confirms a tie between a food product and a concrete place understood in terms of territorial demarcations within which specific cultural practices are maintained (Appadurai, 1996), whereas de-territorialisation creates series of relations or fusions preventing existing relations from settling (Deleuze & Guattari, 1972). Instead of stability, de-territorialisation causes constant changes that transform relations and meanings. Or, to state it otherwise, instead of steady ties between food and place, de-territorialisation weakens the connection between place and cultural practices.

6. Foodscapes

The small study in Paris and Copenhagen accentuates that analytical tools capable of capturing complex information on difference and similarity are needed. In particular, displacements and de-territorialisation seem to possess an explanatory force suitable for the analysis.

A ‘foodscapes’ approach was chosen for the subsequent analysis as the concept offers a framework, within which processes of de-territorialisation can be explored. Within the past decades, ‘foodscapes’ has become a focal point for
research concerning the interactions between food and people in a broad sense. The common denominator for the use of the concept is a holistic and multi-disciplinary research interest in so far as ‘foodsapes’ has been applied to themes such as food in political economy (Winson, 2004), in cultural geography (Yasmeen, 2001), in analysis of food environments (Burgoine et al, 2009), in health (Whelan et al, 2002) and in the way food is associated with place and diverse cultures (Dolphijn, 2004). However, the multiple interpretations of ‘foodsapes’ are a challenge: if ‘foodsapes’ can be applied universally in the context of food, it may not signify anything specific at all, and if it is narrowed down too much, e.g. to the physical setting in which food is eaten, then applying the concept may be unnecessary.

If de-territorialisation is to be taken seriously, that is recognising that localised, boundary-oriented cultural practices exist but are under pressure, then it seems relevant to interpret ‘foodsapes’ along the lines of Appadurai’s use of ‘scapes’ in his theory of globalisation (Appadurai, 1996). In this approach, the multi-dimensional movements are captured in a complex disjunctive order of relations between five dimensions of ‘cultural flows’ or ‘scapes’ called ethnoscapes, mediascapes, technoscapes, finanescapes and ideoscapes. Together these ‘scapes’ express the perpetual movements of persons, things, money, ideas and information, all of which influence the relationship between food and people and places.

In the small study of Paris and Copenhagen, the differences identified between the two cities could easily have formed the basis of a traditional comparative analysis of national heterogeneity, but this would leave the similarities unaccounted for. Instead, differences were taken into account, but the emphasis was put on the similarities as it seemed relevant to explain them in terms of processes of de-territorialisation. To mention a few examples: The availability of homogenised foods produced and distributed by multinational corporations was significant in both cities; images of lifestyles connected to food-items were visible in both cities and likewise the narratives of authenticity presented through advertising.

First, applying a ‘foodsapes’ perspective, does that mean constructing a relationship between food and place that may not be genuine? In the process of answering this question, Adema’s work on Gilroy as the garlic capital in a ‘foodsapes’ perspective served as inspiration (Adema, 2009). The author implicitly brings forth the question of whether a ‘foodscape’ is a construction, something that is being created for a specific purpose. In the case of Gilroy, the production of garlic wasn’t something new, but in the process of commercialisation it became a trademark for Gilroy. This does not, at first sight, seem to be the case with Paris as food items of high quality, exquisite meals and socialising around the table has been associated with the city through centuries (Rambourg, 2010). But, if associating food and place is also a question of how long this relationship has existed, then a ‘foodsapes’ perspective seems to reveal that Copenhagen has only recently become known as a place, in which it is possible to find extraordinary food in restaurants. In this way, a ‘foodsapes’ approach indicates that one of the specific purposes of connecting food and place is to draw tourists into Paris and Copenhagen. Food is indisputably part of the image that the tourist industry wants to make Paris and Copenhagen known for and, in this respect, a ‘foodsapes’ approach indicates that the association of food and place may – at least to a certain extent – be a construction.

Secondly, if the connection between food and place is a construct, is it then interesting how this construct is created, or is the important question rather how it is being reproduced? Ultimately, the role of the observer seems to be central. The observations in Paris and in Copenhagen were made from the point of view of a foreign observer, or as Dolphijn frames it in his work on ‘foodsapes’: the perspective of the tourist (Dolphijn, 2004). The tourist is coming to the city and has read books that have conveyed information of the close relationship between the city and the food. But this relationship may address the tourist and not the local who may not regard the ‘local food’ as typical for the place. Stated otherwise, the fact that the macarons from Ladurée and the bread from Poilâne have become model exemplars in the Parisian food arena and that the New Nordic Cuisine has become emblematic of Copenhagen can be seen as narratives of a relationship between food and place that is constructed and then reproduced by the tourist who seeks it and, thus, confirms the relationship (Dolphijn, 2004). This means that the observer is obliged to ask if what is seen as specifically Parisian or connected closely to Copenhagen really is typical for the city and what makes it so. Such an inquiry will probably reveal that there are complexities rather than simple answers.

7. Further perspectives

Despite the challenges posed by the multiple interpretations of ‘foodsapes’, it nevertheless seems to be a promising approach in so far as it provides tools for going beyond an analysis based solely on cultural difference. In particular, the
integration of processes of de-territorialisation seems to open new perspectives to be explored in the larger study.

If de-territorialisation weakens the association between food and place, then it seems relevant to gain insights into how the processes influence human experience of this connection. Claiming that the taste of food can bring back memories, as in the passage in Proust where the narrator tastes a Madeleine and is transported back to Combray (Proust, 1954), seems uncontroversial. However, looking at it in a 'foodscapes' perspective positions the relationship between food and place, somewhere between nostalgia and fantasy (Appadurai, 1996) because the taste that is the immediate sensory experience may be remembered, but it may just as well be embedded in imagination.

The question of authenticity may well be linked to this interplay between memory and imagination. When tasting and incorporating food the body, the nature and the culture meet (Trubek, 2005). This means, that when tasting a food item or a drink, the memorised or imagined qualities supplement the concrete sensory experience. Such tastes of ‘place’ may refer to memory as it is the case when speaking about ‘le goût du terroir’ as the specific taste of a specific place. But the reference is also used when the agro-industry plays with the imagination of consumers by using labels of ‘origin’ or ‘tradition’ or ‘authenticity’ on industrialised foods that are most likely produced in the place marked on the label, but not necessarily by standards that encompass the place-related qualities that were attached to the product earlier (Béard & Machenay, 2004). Another example is when product brands refer to much-coveted lifestyle choices as linked to specific products and, hence, create non-geographical communities of consumers adhering to the brand (Muniz & O’Guinn, 2001).

The multiple layers of memory and imagination seem to open a window for further enquiry that could be made within the framework of ‘foodscapes’. Both memory and imagination are tied to corporal experience – not in a biological sense, but along the lines of lived experience in the phenomenological tradition. In this tradition, the body is more than a physical shell. It is physical, but includes cognitive qualities as well (Merleau-Ponty, 1945). This means that not only human action, but also human reflection is mediated by the body and, hence, corporal experience seems to form a point of departure for understanding how the constant movements of cultural practices influence the way in which the relationship between food and place is experienced.

**References**


Book Review: The Desirable Body: Men and Women Confronting their Weight


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**Keywords:** body fatness, gender, obesity, health, aesthetic.
Thibaut de Saint Pol is an administrator at the National Institute of Statistics and Economic Studies (Institut national de la statistique et des études économiques, INSEE), a researcher at the Sociological Observatory for Change (Observatoire Sociologique du Changement, OSC), and holds a PhD in Sociology. His doctoral thesis, entitled “Body fatness and gender in Europe: weight and the inequalities of appearance and health” was researched and written under the supervision of Alain Chenu at Science Po, in Paris. In 2009, he received the Jean Trémiolières prize for research in nutrition and the Ville de Paris prize for his study of gender. His book, “The Desirable Body: men and women confronting their weight”, presents the findings of his thesis research.

In the past few decades, aesthetic norms have favored progressively thinner bodies (Williams and Germov, 2004) while the prevalence of obesity has increased to the point of being considered a “worldwide epidemic” (Poulain, 2009). The phenomenon of lipophobia (the fear of becoming fat), along with ideals of thinness, have been profoundly engrained into Western culture (Gracia, 2010; Fischler, 1990). The body has become an asset, an object of value, and is systematically a target of attention, concerning both health or aesthetics. This phenomenon is not homogeneous across different cultures and social classes, or between men and women. Thibaut de Saint Pol thus presents a temporal, spatial, and multidisciplinary analysis of these issues concerning appearance, obesity, and principally the resulting social and gender inequalities that exist in French society and in the greater European context.

In the introduction, Thibaut de Saint Pol presents the body as an object of consumption, of differentiation, and of discrimination – a place where we can read a multitude of behaviors which are a result of people’s pursuit for an ideal: the “desirable body”. A closer look at this allows for the examination of different aspects of society and the relationships between its members, wherein body weight and body fatness have become principal channels of this ideal. Weight has a great importance because it is related to concerns of health and of beauty. While largely a sociological study, it also uses a tool of medicine and epidemiology to analyze obesity and its social and gender issues: body mass index (BMI). This was chosen because it provides a precise understanding of body fatness and a statistical measurement of obesity, so that analyses and comparisons within a large population can be made. In order to address all these issues, Thibaut de Saint Pol does his analysis using results obtained through eight large quantitative studies, making it possible to compare different data across a large number of countries and in France.

In the first chapter, “The tyranny of the desirable body: between aesthetic norms and health requirements”, the author begins by showing how physical differences between individuals and between genders are social constructions that cannot simply be reduced to their biological dimensions. Further, he emphasizes that the body is linked to social identity and at the same time may be a reflection of the social context of the individual, of his/her way of life, and social position. The body symbolizes the particular values of different social groups. These values result in different uses of the body, which contribute to shaping it, as people seek similar characteristics. The author discusses the unprecedented importance being placed on appearance, which has reached the point that it is perceived as a commodity and is managed by investing in reaching the goal of having a desirable body. Moreover, he explains, inequalities on economic and cultural levels often reflect inequalities related to appearance. This phenomenon affects men and women differently and it is not only a personal issue, but also a political one. The author explains that when policies emphasize the health dimensions of weight, they also reinforce the aesthetic norms and, by consequence, the pressure to have this desirable body. Both the beautiful and the healthy body become desirable. In order to understand this phenomenon, Thibaut de Saint Pol targets body fatness, since this aspect touches on the tyranny of both beauty and health. The author concludes this chapter by defending the legitimacy of obesity/body fatness as an object of sociological study.

Dedicated to the key issue of measuring the body, the second chapter “Measurable bodies, bodies measured: objectifying of body fatness”, addresses these questions through a multidisciplinary and historical approach looking at how measures of the human body and definitions of norms have been constructed. Thibaut de Saint Pol refers to the importance of the work of the Belgian statistician, Adolphe Quetelet, in anthropometric studies and in defining norms and notions of normality of body fatness, notably through his theory of the average man. According to him, these norms are associated with the idea of conforming to a rule, with a notion of the ordinary, but also with that which serves as a model for beauty. Dealing with physical or moral characteristics, the average becomes “normal”, the ideal norm, and that which deviates from the average is perceived as “abnormal”. The medical world also participates in the definition of physical norms, and far from being a solely scientific field, medicine is itself a social product and, in turn, also
produces the social. Through the arguments in this chapter, the author justifies why BMI and its values for body fatness classification is the most used formula for defining ideal body fatness and the diagnostic criteria of obesity. The author provides arguments in support of using this instrument of measure, but also critiques its limitations and its systematic usage, notably at the individual level, as an instrument for self-control.

In the first section of the third chapter, “Idealization and putting the body to the test: social history of body fatness in Europe”, the author shows, through a historical approach, specifically in the Western world, that the perceived body, the real body and the desirable body differ according to sex and are influenced by the standards of each era and society. He emphasizes the central role that body fatness has always played in representations of beauty. Over the course of history, he explains, the connections between body fatness, diet, and health have grown stronger and a dimension of individual responsibility regarding the body has been established. In the 20th century, body fatness and thinness, chiefly for women, have become inseparable from what is considered a desirable body. In the second part of the chapter, the author explores the differences in the values of average body fatness that exists in countries throughout Europe. He also reveals that the situation between men and women changes within each country and that from one country to another, things vary mostly for women. Likewise, the countries where women have the lowest BMIs are also the countries where the differences between men and women are the most significant, a sign that evaluation and the pressure to be thin is more severe for them, as is the case in France. The author then turns the discussion to the ways in which individuals perceive their bodies. The analysis reveals that almost half of individuals are not satisfied with their weight, mostly feeling that their weight is “too high.” Women are more likely to be dissatisfied. Men are generally more dissatisfied due to low weights, while women due to high weights. This dissatisfaction can grow significantly in the case of obesity for both genders. The dissatisfaction comes from a disparity between the actual weight of an individual, or how weight is perceived, and one’s desired weight: the ideal weight. Thibaut de Saint Pol looks at the ideal values of weight for each sex and shows how the gap between reported average BMI and ideal body fatness is greater for women, which can explain their greater dissatisfaction. The author compares data among European countries and reveals that satisfaction with weight is not connected to the average level of body fatness in each country and that the same level of body fatness can be perceived differently in different countries and between different genders. This dissatisfaction regarding the body and weight has consequences for people’s behaviors, notably with regards to their eating habits. The author analyzes the practices of controlling eating habits among Europeans and reveals that these behaviors play out in different ways across gender lines, but also between one culture and another.

In the last chapter, “Inequalities of weight and the weight of gender”, the author analyzes the social and gender inequalities hidden behind body fatness, by looking at French and European data. The author does a systematic analysis including a number of social variables (age, professional activity, education level, etc.) and shows that in Europe, and specifically in France, different factors play distinct roles in influencing the level of body fatness of individuals, and that this varies between the sexes. These analyses reveal that the level of body fatness and the prevalence of obesity as a function of the standard of living have a different impact on men and women. More inequality seems to exist for women. Women in the worst socioeconomic conditions are the most overweight, while for men this does not hold true: the wealthiest classes consist of a large number of overweight men.

The author focuses his analysis on the rise of obesity in France. He reveals that obesity has increased among people of all social backgrounds, but in different ways, and that this is more significant in more disadvantaged socioeconomic classes, predominantly amongst women. In France, this link between obesity and belonging to a social class matters most for women. For men, this is not a factor, illustrating how differences in judgment of appearance are coupled with the effects of gender differences.

Thibaut de Saint Pol is interested in the repercussions that differences of body fatness can have on the lives of individuals. He takes the concept of stigmatization of the individual, proposed by Erving Goffman, to discuss how obesity, more than just a medical issue, has become a stigma, a social handicap. His analysis reveals that in Europe, while for men a small and weak body can provoke negative consequences, for women it is being overweight or obese that has significant consequences for social mobility and on social interactions. To deepen his study of the effects of stigmatization, the author analyses discrimination and people’s relationships with their bodies in France. He shows again that weight, particularly elevated weight, plays an important role in discrimination and that it is women who are the most affected. This reflects the strong pressure
that is exerted on their bodies and elucidates the intensity of that pressure to achieve high standards of beauty. Other characteristics, like height, age, and social background, also play into the level of discrimination (different between men and women), and exacerbate social and gender inequalities. It is generally the poorest, and among them women, who suffer the greatest consequences. This stigmatization of those who are obese causes suffering, a loss of self-esteem, and has consequences for the way in which individuals perceive themselves, characterize their personalities, and on the way they behave.

This study thus shows how, far from representing simply a public health issue, disparities in weight and body fatness also translate into inequalities between social groups and between sexes. Obesity appears as a sickness of the poor and chiefly of poor women. Body fatness is thus a criteria of distinction between men and women. It is not the result of a natural difference, but rather the result of different ways of conceiving and of molding the body, that reflect social and masculine domination. The author also illustrates the particular situation in France, which is characterized by an even stronger pressure on body weight, principally for women, partially as a result of the slenderness of the average body and thus the physical norm. In the French context, the link between obesity and poverty is especially true for women. Using a spatial approach, this study demonstrates the existence of a “country effect” on body fatness and on the issues that accompany it, producing behavioral patterns specific to individuals in different areas. In terms of body fatness, these variations make impossible to speak of identical situations, whether in Europe as a whole or in specific geographic zones inside it. Thibaut de Saint Pol’s research suggests that studies about body fatness and obesity, as well as public policies, must take into account differences in gender, and also the effects of each social and cultural context.

Weight and obesity, more than problems facing just the medical field, are phenomena marked by the social and the cultural (Sobal and Maurer, 1999). Thibaut de Saint Pol developed a very complete analysis of these complex issues. His originality and his merit come from the fact that he has grouped together and compared a number of significant data from France and other European countries in order to compare a number of variables. These analyses have brought to light the social and cultural dimensions of this problem which is often characterized as a medical issue. In this way, he proves how medicine, the social and the cultural are interwoven on a number of levels, and reveals the importance of connecting all of these elements when carrying out studies, but also when making public health policies. This study does however have some limitations, as Thibaut de Saint Pol himself points out, since the analyses rely on research using data gathered through self-reporting (e.g. of weight), which can effect the validity of responses. A qualitative approach also could compliment this research, especially by studying of individuals’ representations.

It is very important for health professionals and for those responsible for the development of public health policies to take into account the social and cultural dimensions in the prevention, treatment and reduction of the consequences caused by biopsychosocio-cultural phenomena associated with weight. Therefore, this book will be of interest and provide relevant knowledge for governments, physicians, nutritionists, dieticians, psychologists, psychiatrists, sociologists and others who are confronted daily with these issues in their professional activities.

References


Book Review: Adventures in Eating: Anthropological Experiences in Dining from Around the World


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In *Adventures in Eating: Anthropological Experiences in Dining from Around the World* edited by Helen R. Haines and Clare A. Sammells, fourteen anthropologists take readers on a global journey through the exploration of unusual, and sometimes downright repugnant eating practices. The book, divided into fifteen chapters and an epilogue, has two distinct but overlapping aims. The first is methodological in nature, and looks at how food plays a crucial role in the processes of data collection and field work for anthropologists (and arguably, for other researchers who engage in field work as well). *Adventures in Eating* positions food and eating as methodological tools that anthropologists can use to interact with their research participants and to gain acceptance in the field. Reflexivity is central to the different accounts included in this book. The authors all question their roles and positions as researchers, and how these can influence their data collection. The authors also explore the tension between being “culturally sensitive” and being turned off by the foods and dishes that are offered to them while in the field. Is research compromised when anthropologists cannot completely adhere to the eating practices they encounter because food is distasteful, or runs against their beliefs or dietary choices? The chapters in *Adventures in Eating* examine how food can be at once a mode of integration and a barrier for researchers.

The second goal of this book is to evoke the influence of globalization on foodways across the globe. The sheer variety of accounts in this volume speak to the heterogeneity of global food culture. As the editors argue in their opening chapter, the world may not be as “small” as what is often portrayed in globalization literature (Chapter 1, p.9). While it is true that tourism around the globe increasingly involves experiencing other cultures through their foods and cuisines, the “global citizenship” suggested by these experiences may be more superficial than really existing (p.8). As several of the accounts in this book show, certain “exotic” foods (llama meat) have more currency than others (freeze-dried potatoes or guinea pig meat). Often, the politics that put certain global foods and cuisines onto tourists’ plates (and eventually, allow them to circulate outside their areas of local consumption) are quite complex. *Adventures in Eating* uncovers a variety of perspectives and regions of the world through the eyes of anthropologists originating from different subspecialties. Each chapter starts with a biography of the author, making the subsequent account very personal and reflective. The book is divided into sections organized around general themes, like main courses or drinks. Generally, the emphasis is on how food marks differences and similarities between researchers and the people they research. In other words, the authors are looking at how food can be both a bridge and a boundary in anthropological research. It is important to note that most of the authors are not anthropologists of food, thus they are not primarily interested in the study of food. In this respect, their observations about food arise from their experience as anthropologists in the field rather than from a particular research question or interest.

In the first section of the book (Chapters 2 to 5), the authors explore dishes and foods that constitute “main courses” in other cultures. For many cultures, main courses imply some type of protein, usually in the form of meat. Several interesting themes are explored in this section through accounts that take the reader to Papua New Guinea, Belize, Peru and Kenya. Goldstein and Cattell explore the disappearance of traditions, whether they are social or alimentary, in their accounts (Chapters 4 and 5). Cattell, who studies the Luyia people of Kenya, observes how scarcity has changed the social relations around food practices, like the sharing of food with neighbours. Goldstein sees the “cuy” – a type of guinea pig that is a national source of pride in Peru – become less of a staple and more of an “exotic” food for curious tourists. For Lohmann, commensality is not “all-or-nothing” (Chapter 2). In other words, sharing the foods of others does not automatically make one a “member” of a group. Conversely, rejecting foods does not inevitably create a barrier and make one an outsider (Chapter 2, p.29). The difficulty of navigating social acceptance in the field is readily obvious when one is presented with strange foodstuffs, but as Lohmann discusses, it is more complex than simply saying “yes” or “no” to a particular food. For Haines, reflecting on her initial rejection of gibnut meat in Belize makes her realize that language and cultural upbringing have important effects on the foods we consider “good to think”, and not just “good to eat” or tasty (Chapter 3).

In the second section of *Adventures in Eating* (Chapters 6 to 8), authors address foods that are central to meals, but that are often forgotten or ignored. An excellent example is found in Sammells’ account of chuño, a freeze-dried potato eaten in the rural highland regions of Bolivia (Chapter 6). The technique of freeze-drying potatoes to preserve them over several seasons creates a food that is completely different from the traditional potato. Observing differences in how llama meat is accepted as an exotic, but palatable representation of local food culture for tourists while chuño is not, Sammells is able to reflect on how certain foods become emblematic of a culture because they combine authenticity with just enough familiarity to outsiders, while others never
make it. Certain foods may hold a fascination that is difficult to understand, as McBriinn discovers with the durian in Malaysia (Chapter 7). Despite her best efforts to embrace this exotic “top ten eating and dining experience”, the author is unable to fully understand the attraction of this fruit. Again, the idea that cultural and sensory factors contribute to determining what is edible or inedible for certain people, is explored. For Marte, a severe allergy to many of the additives in Dominican condiments and ingredients creates some difficulties in the field, despite her “insider” status as a Dominican immigrant herself (Chapter 8). Here, Marte looks at methodological concerns of doing fieldwork with constraints (i.e., accepting hospitality and foods while balancing health issues). Though Marte does not offer any ready-made solutions, she does reflect on the techniques she developed to ensure data collection while neither jeopardizing her work nor her health.

Refusing to eat whale meat while in Japan, Aimers reflects on the cultural relativism that anthropologists advocate in the field (Chapter 9). What is being open-minded and culturally sensitive? How is diversity defined, and by whom? Along with these questions, Aimers also connects debates on whale meat to issues of globalization, homogenization and identity. Like debates around foie gras (see DeSoucey 2010), affirming the right to eat whale meat in Japan is a statement against the perceived threats to cultural identity brought on by globalized culture. Methodological concerns are more central to Zycherman’s observations of her refusal to eat meat while researching in Argentina’s meat-centric culture (Chapter 12) and Johnston’s discussion of the bidirectional gaze she encountered while studying Blackfeet eating habits (Chapter 13). For Zycherman, admitting dietary differences actually helps her collect the data she needs because it encourages people to reflect on their relationship to their eating habits, and to eating meat in particular. For Johnston, the observational data gathered while eating with research subjects may prove to be insufficient since participants are likely to play up certain parts of the meal (and downplay others). Household meal situations call into question the objectification of participants as researchers and participants play off each other.

The final section of the book looks at drinking habits in Ethiopia (Reminick, Chapter 14) and Honduras (Palka, Chapter 15). Chaiken concludes the volume by connecting the different chapters to the core anthropological concept of cultural relativism (Epilogue). Indeed, several of the authors demonstrate how difficult it is to maintain a neutral and culturally sensitive stance when faced with unusual foods and food habits. Even though globalization is presented as a backstory to the accounts in this book, it is actually at the forefront of many of the observations made by the different authors. If there is a common theme that unifies the varied chapters in this book, it is that food traditions and foodways are changing across the world due to globalization. Certain traditions are being transformed, or are disappearing altogether, and food provides an interesting way of understanding these changes.

The anthropologists in this volume highlight how sharing meals with research participants is one way to gain insight into certain aspects of the lives of the people they study. It provides a mode of integration as a researcher, but it can also mark differences in striking ways. In this respect, the book is of interest to food scholars because it discusses the role of the participant observer and the issues that may arise when studying food practices while also partaking in these eating practices. In particular, it addresses the issue of bridging cultural differences in food practices and preferences: as a researcher, do we have to embrace the practices of the people we study, even when they run against our own beliefs or dietary choices? Many of the researchers in this volume find that it is possible to maintain one’s own food practices and beliefs, while still obtaining rich data on other people’s food practices.

As mentioned, the book includes chapters authored by researchers who encountered eating experiences while studying other topics, and researchers who set out precisely to study eating practice. There is a difference in how these chapters are written. In the first case, the food practices are a side note – something that the anthropologists observed but were not seeking in the first place. In the second case, the anthropologists are more aware right from the start of what they are looking for. In these chapters, there are generally more questions around research and methodologies relating to the study of food in varied contexts that may or may not be comfortable for researchers. Generally, the book will appeal to a variety of audiences because the accounts are personal, in the first-person, and colourful. Some of the accounts could include more reflection on the role of the researcher, rather than just being an account of “strange” or exotic eating practices (and the social practices that surround them). These chapters are interesting in terms of the raw qualitative data they provide, but they do not necessarily hold much analytical interest (see Reminick’s chapter, Chapter 14, for example).

Food scholars have long known that one of the most basic of human activities – eating – often encompasses a multiplicity of social meanings,
practices and boundary-making. Haines and Sammells have brought together an interesting collection of anthropological accounts that further explore these crucial roles played by food in the researcher-participant relationship. For both food scholars and those who are newer to the study of food, these accounts offer interesting entry points into issues of methodology, the role of the researcher and the effects of globalization on culture.
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