Anthropology of food

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Explorations in cross-national comparison of food practices

Associations between meal complexity and social context in four Nordic countries

Liens entre complexité des repas et contexte social dans quatre pays nordiques

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Abstracts

English Français
Contemporary eating is often portrayed by images of snacking, solitary grazing, disintegration of sociability, demise of family meals, and increasingly irregular eating patterns –what Claude Fischler has famously described as gastroanomy. Inspired by the concept of eating system, this article contributes to the discussion about the ongoing changes by examining the relation between meal complexity, sociability and the duration of meals in contemporary Nordic societies. We examine the differences in meal complexity between four Nordic countries, Denmark, Finland, Norway and Sweden, focusing on two main meals, lunch and dinner. The analysis builds on the concept of eating system, examining the effect sociability has on meal complexity. In the end we ask whether complexity can better be explained by social context, or if it, rather, results from social differentiation. The data (N=8248) are drawn from the Food in Nordic Everyday Life survey conducted in Denmark, Finland, Norway, and Sweden in 2012. The Finns and Swedes typically had two hot meals a day, whereas the Danes and Norwegians only had one. Moreover, the differences in the complexity were the greatest in hot dinners, the Danes and the Swedes having the most elaborate dinners. A marked proportion of meals were eaten within structured conditions either at workplace or home. The presence of
any commensal partners increased the complexity of hot dinners, as did the longer duration of the meal. Situational factors were important in explaining differences in meal complexity, but social background, apart from age, did not convey many significant differences.

L’alimentation contemporaine est souvent illustrée par des représentations de grignotage solitaire, de désintégration de la sociabilité, de disparition des repas pris en famille et d’habitudes alimentaires de plus en plus irréglières – ce que Claude Fischler a mémorablement qualifié de « gastro-anomie ». Inspiré par le concept de mode d’alimentation, cet article contribue, à travers l’examen de la relation entre complexité des repas, sociabilité et durée des repas dans les sociétés nordiques contemporaines, à la discussion sur les changements actuels en cours. Nous examinons les différences de complexité entre quatre pays nordiques, le Danemark, la Finlande, la Norvège et la Suède, en nous focalisant sur deux repas principaux, le déjeuner et le dîner. L’analyse se construit autour du concept de mode d’alimentation et examine l’effet qu’à la sociabilité sur la complexité des repas. Nous nous posons finalement la question de savoir si la complexité dépend principalement du contexte social ou si elle résulte plutôt d’une différenciation sociale. Les données (N=8248) sont tirées d’une étude intitulée Food in Nordic Everyday Life (‘La nourriture dans la vie quotidienne nordique’), conduite au Danemark, en Finlande, en Norvège et en Suède en 2012. Elles révèlent que les Finlandais et les Suédois prennent typiquement deux repas chauds par jour, contrairement aux Danois et aux Norvégiens qui n’en prennent qu’un. C’est par ailleurs en matière de repas chauds que les différences sont les plus grandes, les Danois et les Suédois préparant les dîners les plus élaborés. Une proportion significative de repas sont consommés dans un cadre structuré, sur le lieu de travail ou à la maison. La présence de compagons de table augmente la complexité des diners chauds, tout comme la plus longue durée du repas. Si les facteurs situationnels permettent d’expliquer en bonne partie les différences de complexité des repas, les origines sociales, en revanche, ne sont pas source de grandes différences, hormis l’âge.

**Index terms**

**Mots-clés** : recherche comparative, mode d’alimentation, complexité des repas, pays nordiques, sociabilité  
**Keywords** : comparative research, eating system, meal complexity, Nordic countries, sociability

**Full text**

**Introduction**

Previous social scientific research on meals has often focused on the structure or grammar of meals and other eating events. The most prominent conceptualisation has been the proper meal with definite and necessary components originating from British studies and frequently applied in Nordic research (e.g. Douglas & Nicod 1974, Murcott 1982, Ekström 1990, Bugge & Døving 2000). Furthermore, the social organisation and division of labour in meal preparation (e.g. Ekström 1990, Ekström & Fürst 2001, Marshall & Anderson 2002) as well as the sociability and rhythm of eating have been studied (e.g. Gronow & Jääskeläinen 2001, Mestdag & Glorieux 2009). A typical shortcoming in previous research is that commensality in terms of the temporal, social, and spatial setting of the meal is usually studied separately to what is eaten (Domaneschi 2012). Yet, the very combination of these different aspects is focal in understanding the changes in our eating habits.

The past decades have witnessed increasing concerns in Western societies about the demise of structured meals in everyday life. Typically, studies on meals set off from the notion of eating having a certain structure with certain rules. From these premises, the alleged individualisation of eating and the evaporation of these structuring rules have intrigued social scientists. The norms relating to food and eating habits begin to dissolve as practices change. This, according to Claude Fischler (1980,
1990), leads to gastroanomy. In addition, there have been concerns that meals and their preparation not only are losing their significance in everyday life but also that meals are losing their own structure. With the increasing role of convenience foods, such as ready meals and semi-prepared meals, cold meals are replacing hot meals and people are spending less time eating meals than before. This is also challenging the idea of proper meals consisting of clear elements of centre, staple, vegetables, trimmings and bread (Mäkelä 2001). Meals become simpler and may still be regarded as "proper" by the eaters (e.g. Marshall & Anderson 2002).

Mäkelä et al. (1999, see also Kjærnes 2001) have developed a conceptual framework of an eating system with the three dimensions of eating pattern, meal format and the social organisation of eating (see the following section). This framework is useful when trying to see eating as a whole where the various dimensions operate together and are also dependent of each other. This concept of eating system comes close to the concept of practice, which has gained currency in recent research on eating and is defined as a combination of material objects, know-how and meanings, not forgetting about their spatial and temporal organisation (Southerton et al. 2011). As Domaneschi (2012) has noted, practices are also inevitably connected to social structures, experiences and conventions.

Inspired by this approach, we focus particularly on the relationship between two dimensions of the eating system: the meal format and the social organisation of eating. Indeed, earlier research on meal structure implies a strong relationship between meal content and meal sociability (Rappoport et al. 2001; Schutz 1988), but studies on the topic are few. We first examine the differences in meal complexity between four Nordic countries, Denmark, Finland, Norway and Sweden, focusing on two main meals, lunch and dinner. Second, we analyse the country differences building on the concept of eating system, addressing how meal complexity relates to the presence of commensal partners, the meal venue and the duration of the meal. In the end, we discuss whether meal complexity can be explained by social context, or if it is better explained by social background.

The eating system in the Nordic context

The concept of a meal used here concerns structured eating events involving multiple foods and a beverage. Although a meal can be defined as simply as above, on closer look it is evident that across countries and cultures there are differences in, for instance, what types of foods are eaten in meals, whether the food is hot or cold, the number of ingredients and components eaten, the sequences of different dishes, the venue of meals, and with whom the meals are typically eaten (Warde 2005, Warde et al. 2007). In anthropological and sociological meal research, a meal has been identified more specifically as a structured social affair that typically separates the family and friends from other contacts (Mäkelä 2009). Meals are characterised by copiousness, ceremoniousness, and the structural and sensory qualities embedded in the binary oppositions of savoury and sweet, hot and cold, and liquid and dry (Mäkelä 2009; Douglas 1975).

In this study, we frame the general dimensions of the meal using the concept of eating system, which is a concept combining the physical, organisational and socio-cultural aspects of a meal (Mäkelä et al. 1999). The eating system consists of three elements: the eating pattern, the meal format and the social organisation of eating. Here, the eating pattern refers to the rhythm and number of eating events as well as to the alternation of hot and cold eating events. Meal format means the composition of the main course and the sequence of the meal in terms of starter, main course and dessert. The social organisation of eating relates to the venue of the meal, commensal partners and who cooked the meal (see Mäkelä et al. 1999, Kjærnes 2001).
As regards the eating pattern, having three basic meals a day (breakfast, lunch and dinner) has been common in Western cultures ever since industrialization in the early part of the 20th century. According to recent research, the three-meal pattern is still valid, but there have been some results showing that at least in France it mainly concerns families with two adults and children, whereas in other types of social settings eating three meals a day is not as common (Lhuissier et al. 2013). Social rules and norms define the collective timing of meals. However, recently it has been suggested that scarcity of time leads to decreased sociability, deregulation of meals and a breaking down of social ties (Southerton et al. 2011), although research does not always support the interpretation (Mestdag 2005).

A previous Nordic study conducted in 1997 (Kjærnes 2001) showed that the most distinctively differentiating pattern in meal patterns in Nordic countries related to whether the meal was hot or cold. In Finland and Sweden it was common to have two hot meals a day. In contrast, in Denmark and Norway the first elaborate meal of the day (lunch) was usually cold, and only the second meal was served hot.

As regards the meal format, the previous study (Kjærnes 2001) showed that the four Nordic countries formed a rather homogenous group, and that the meals in all the four countries were rather simple. Interestingly, the theoretical idea of a proper meal consisting of a centre, staple, vegetables, and trimmings, which has been imported especially from the British debate (Douglas & Nicod 1974, Murcott 1982), did not seem to match the Nordic countries very well, as less than 20% per cent of hot meals in all the countries, and less than 10% in Finland, could be defined as such (Holm et al. 2012; Mäkelä 2001). Most weekday hot meals consisted of only one dish, starters were relatively rare, and the majority of eating events did not include a dessert. Although in all four countries the most important staple was potato, differences were found in the main ingredients of the hot meals: Eating meat was typical for the Danes, and fish for the Norwegians, and eating bread aside a dish was common in Finland and in Sweden. Vegetables were eaten in all of four countries: In Denmark and Norway they were predominately eaten boiled, and in Finland and Sweden as salads.

From the viewpoint of meal complexity, earlier results indicate that in Sweden the meals were more complex than in the other Nordic countries and in all the countries Sunday meals were more complex than weekday meals (Holm et al. 2012). In general, the perception of what qualifies as a meal has been reshaped in recent years due to increased availability of different ingredients throughout the year, but also because of increased health awareness. Today a salad would probably qualify as a meal, which it did not in earlier decades (Mäkelä 2009). Also, the British understanding of proper meals has become more resilient (Marshall & Anderson 2002).

As regards the third dimension, the social organisation of eating, sociability and commensality are both concepts that have been extensively used in sociological studies to distinguish social meals from other types of eating. Commensality is also an important criterion for a proper meal (Sobal & Nelson 2003, Mäkelä 2009), linking first the venue of the meal, and secondly the commensal partners (Sobal & Nelson 2003, Fischler 2011). Commensal patterns not only reflect the social relationships of individuals, but also wider conventions and practices of how eating events are arranged and conducted within certain social settings.

The research tradition deriving from Mary Douglas’s writings (see Douglas 1975, also Mäkelä 2009) identifies sociability as one of the core criteria of a meal, which is determined by normative pressure. Sharing food is associated with personal relationships, and not any social contacts qualify as commensal partners. Previous research has shown that all the three basic meals are not equally sociable; Rappoport et al. (2001) found that in the US the mid-day meals (lunches) resembled breakfasts, which were rated as inexpensive, casual, convenient, and light. In contrast, evening meals were more commonly hot and eaten with others.
Family is the most fundamental commensal unit, alongside colleagues for working meals, friends, and neighbours (Sobal & Nelson 2003, Bisogni et al. 2007). A family meal is considered to carry many beneficial effects, such as preventing obesity, promoting healthy eating, transmitting important cultural values to future generations, and protecting the offspring from winding up in bad company (Mestdag 2005). According to Sobal and Nelson (2003), the majority of breakfasts, lunches, and dinners in the UK are enjoyed home with the family. Also in France, the prevalent meal type is family meal (Lhuissier et al. 2013). In the Nordic countries in the late 1990s, people living with family members would usually share their breakfasts and dinners with them (Kjærnes 2001). Thus, instead of a nuclear family consisting of parents and children living together, family needs to be seen as a diversified social unit with many possible types of members; partners, children, relatives and maybe even friends – also in the case of one-person households (see Jackson 2009). Maybe because of the persistent ideal of nuclear family, the interpretations of the decline of family meals in Western countries in recent years has a link to the change in family organisation and household structures (Bisogni et al. 2007), but also to the irregularity of working life. Working meal is another special type of meal, which is usually confined by the work and lunch setting. A special research topic has been the organisation of institutional meals, school lunches in particular (e.g. Morrison 2009).

The venue of the meal affects the social company, norms of food preparation and the type of food eaten. Snacking is typical in limited spaces, whereas proper lunches or dinners are eaten at homes and restaurants (Marshall & Bell 2003). In the previous Nordic study, the majority of eating events took place at home and at the workplace. Moreover, eating events at other people's homes and cafes and restaurants were not very frequent. (Kjærnes 2001, Kjærnes et al. 2009.) The prevalent meal type, home meal, was usually eaten with the nuclear family, although in Denmark friends were present at dinners more often than in other Nordic countries.

In many cultures the lonely meal is perceived as something negative (Fischler & Masson 2008, Pliner & Bell 2009, Bildtgård 2010). Eating alone is often seen as more analogous to snacking than actual meals (Pliner & Bell 2009, 173-174; Pliner & Bell 2004), intertwined with short duration of the meal, informal setting, and minimal sequence of dishes (Fischler 2011, 259). Solitary meals are also more often perceived as exceptional rather than usual, and functional rather than enjoyable. Eating together is often seen in a positive light. In the UK it was discovered that eating together with familiar company increased the food intake, as opposed to eating alone or with strangers (Hetherington et al. 2006). Also from a nutritional point of view, lonely meals can result in irregular eating and weight loss, as fewer calories are gained (Pliner & Bell 2009). As Pliner and Bell (2009) point out, a certain stigma is associated with lonely meals, and lonely eaters often retreat to a private sphere. Mestdag (2005) discovered that eating alone was relatively rare in Flanders. However, particularly on weekdays, breakfasts were eaten alone more often than other meals. Social eating events also tend to last longer (Kjærnes et al. 2009, 84-85), as meals eaten together are seen to require a slower pace than meals eaten alone (Southerton 2005). In the light of studies on proper meals, sociability is linked to a greater variety in what is being eaten, whereas lonely, simple meals are linked to living alone and old age (Pliner & Bell 2009).

Data, measurements and method

The data
The data used in the analysis were collected through a web-based survey conducted in April 2012 as part of the *Food in Nordic Everyday Life: A comparative survey of change and stability in eating patterns* research project in Denmark, Finland, Norway and Sweden. A commercial survey company selected a country-wise stratified random sample from its consumer panels. The respondents in the four countries between the ages of 15 and 80 were invited to take part in the survey through email invitation. In the invitation the survey was presented as a large Nordic survey conducted by universities and research institutes.

The questionnaire was designed to analyse meal patterns in the Nordic populations using a 24-h recall method. The respondents were asked to recall all their eating events from the day before, and to fill in when and for how long they had eaten, whether the meals were hot or cold, and what they had eaten and drunk. Detailed questions on the social context of the eating events were also included.

Since our survey was web-based, the quality of the data warrants a brief discussion. Web-surveys have substantial advantages, such as short turnaround time, low costs, flexibility, and higher quality data as compared to postal and face-to-face data collection (Israel 2010, Schmuhl et al. 2010; Dillman et al. 2009; Couper 2000, Bennink et al. 2013). However, accounts critical towards web-surveys point out that Internet noncoverage weakens the quality of the data (Medway & Fulton 2012). Although the four Nordic countries are among the countries where Internet coverage is the highest in the world (OECD 2014), Internet self-efficacy varies across population subgroups.

Response rates are often treated as an important indicator of survey data (Griffin et al. 2011, Parsons & Manierre 2013; Groves et al. 2006). In web surveys response rates, representativeness, and biased results are often referred to as the major limitations (Pan et al. 2013). Response rates in Internet surveys are generally lower than 25% (Dillman et al. 2009). In total 8,248 respondents answered the web survey. Response rates in our survey are relatively typical for an Internet survey: 9% in Denmark, 10% in Norway, 13% in Sweden, and 11% in Finland. The low response rates here may in part be a result of the length of the survey (20–25 minutes), and the fact that the questionnaires were sent out on a daily basis within a 7-day period during which the survey was to be completed, in order to ensure relatively equally-sized and representative samples for all the seven days of the week.

The low response rate is consistent with a general trend of declining response rates in survey studies of the general population (Holbrook et al. 2008) and is probably also due to a combination of the email invitation format and the short sampling time frame (Kohut et al. 2012).

**Table 1. Distributions of gender, age, and education in the unweighted sample and the populations (15-80 years old) in Denmark, Finland, Norway and Sweden (%)**
National representativeness of the data was secured by using quotas for gender, age, and region. This resulted in a sample that is reasonably well representative of the populations in the four Nordic countries in these respects. However, the lowest-educated population segment (i.e., individuals having completed compulsory school or short-term specialization courses) was in general under-represented. Except for educational credentials, the 2012 data are fairly representative of the four Nordic populations (Table 1). Overrepresentation of highly educated respondents in the data is a general bias in Internet surveys (Dillman 2013).

Differences in response rates have been shown to impose only marginal differences on substantive responses (Kohut et al. 2012). In order to evaluate whether it is likely that the low response rate in this study caused only marginal changes in response patterns, we compared our 2012 data with other relevant studies based on different methods in which higher response rates were retained. We found no substantial differences in, as an example, the responses regarding political voting compared to various polls carried out through CATI in the same period (April 2012), as only in Finland there was some, but not dramatic, deviation. Furthermore, the temporal rhythm of daily eating patterns, which arguably does not change very much during a 15-year period (Rotenberg 1981), reveals similar patterns as in the 1997 data (Lund & Gronow 2014).

**Lunch and dinner complexity**

The analysis is delimited to examinations of two types of meals: lunches and dinners. The selection of the two meals as a unit for analysis was made for two practical reasons: these two meals types are culturally established (Sobal & Nelson 2003), and they are usually the most elaborate meals in terms of content as compared to other meals. In addition, lunch and dinner are the main meals of the day both in everyday parlance and practices, nutrition recommendations and meal research.

In the analysis below, an eating event is defined as lunch if it was categorised as lunch by the respondent and occurred between 11 a.m. and 15 p.m., and as dinner if it was categorised as dinner by the respondent and occurred between 15 p.m. and 21 p.m. The time frame is based on an examination of eating rhythms published previously (Lund & Gronow 2014). By using these criteria we wanted to make sure that the examined eating events would reciprocate to what is culturally regarded as lunch and dinner in the Nordic countries.

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*Sources of population data: Statistics Denmark (2012 census), Statistics Finland (2010 census), Statistics Norway (2010 census), and Statistics Sweden (2011 census). Due to rounding, the total percentages may deviate from 100.
Meal complexity was examined separately for hot lunches and dinners and cold lunches and dinners. The choice of looking at the meals separately is well-grounded, as essentially, lunches and dinners may be very different. Previous studies provide plenty of evidence on the variation between different countries in terms of whether the meals are hot, or cold, whether the meals are enjoyed with others, and the venue of the meal.

Complexity of a meal can be scrutinised on two levels; first, within the dishes so that complexity portrays the variety of the ingredients used. Second, complexity can be measured by the number of dishes within a meal. As the proportion of Nordic meals that would match the definition of proper meal is low (Mäkelä 2001), we have approached meal complexity from a different angle, placing more emphasis on the total number of different ingredients and dishes within the meal than on the different combinations of food elements. Our complexity measure, therefore, represents the number of elements within a meal. For hot meals, we decided to combine the two approaches, measuring the number of ingredients and beverages as well as the number of dishes.

A hot meal always included a main ingredient (meat, fish, vegetables, or other), and an optional number of different staples (potatoes, rice, pasta or noodles, beans or lentils, bread), vegetables (cabbage, carrot, cucumber, sweet pepper, tomato, lettuce, onion, green beans or peas, dried beans or lentils, other), and trimmings (hot sauce, cold sauce, preserves or condiments, jams or jellies, other). In addition we calculated the number of different beverages (milk or milk products, tap water, bottled water, soft drinks, juice, tea, coffee, other hot drinks, beer, wine, other alcohol, other) in the meal. Also a starter, and a number of desserts (cheese, berries or fruit, ice cream and frozen desserts, cakes and pastries, puddling or jelly or similar, and the option ‘other’) increased the complexity score.

The complexity of cold meals was measured with a simple count variable of items on a predefined list of different foods. These included bread without fillings, bread with fillings or toppings, salty pastries and pies, breakfast cereal, egg, cold cuts, fruit and berries, sweet pastries, yoghurt and other sour milk products, snacks and sweets, vegetables or salads, and other. The number of beverages enjoyed during the meal was summed up with the count variable of different foods.

Context and individual variables

The independent variables in the analysis are measures for meal sociability, venue and duration. Commensal partners for each eating event were mapped out with the question “who did you eat with?” There were seven multiple response options: “alone”, “a spouse or partner”, “my child(-ren)”, “other relatives or family members”, “friends”, “colleagues or schoolmates”, and “others”. Commensal partners were coded as dichotomous variables indicating whether a person belonging to a certain reference group had taken part in the meal. There were a reasonable number of meals that had been consumed with multiple types of commensal partners. Typical combinations consisted of a partner and children, partner and friends, and colleagues and friends. Naming multiple companions may not always relate to eating in big company, but rather to classifying the same people as belonging to multiple groups; a colleague may also be counted as a friend, and so on.

In the questionnaire the question about the meal venue was asked separately for each eating event. The answering options were “at home”, “at someone else’s home”, “at work / school canteen or similar”, “at work/school (during work)”, “at café/restaurant”, “at street kitchen, shop, or gas station”, “on the go (in the train, bus, on the street)”, and “other place”. For the analysis, the marginal categories were combined to build a five-class variable including the categories “home”, “someone else’s home”, “at or during work” (combining the options “work/school canteen” and “work/school during work”), “at café or
restaurant”, and “other” (combining the options “street kitchen, shop, gas station”, “on the go” and “other”), the first being the reference category in the analysis.

There was a categorical variable for weekend vs. weekday. The question about meal duration contained 10-minute categories (less than 10 minutes, 10-20 minutes, 21-30 minutes, 31-40 minutes, and longer than 40 minutes). As the meals tend to be on the shorter side, the two last categories were combined for the analysis.

The background of the respondent was mapped out with the variables of gender, age group and education. Age was grouped into 15-year categories (15-29, 30-44, 45-60, 60+), and education was measured with a 5-class variable (basic education, high school, vocational school, 1-3 years of education after high/vocational school, and more than 3 years of education after high/vocational school).

As the samples deviate from the population censuses, the analyses on the whole data were weighed to obtain the most correct picture about the phenomena on the level of populations. The weights were calculated on the basis of gender, age and education.

### The analysis

Poisson regression was run separately for each of the Nordic countries, using SPSS 22.0. Poisson regression models the log of the expected count of the dependent variable as a function of the predictor variables. The regression coefficients can be interpreted as follows: For a one-unit change in the predictor variable, the difference in the logs of expected counts is expected to change by the respective regression coefficient, given that the other predictor variables in the model are held constant. Meal complexity is the response variable in the analysis, while other meal characteristics are entered as independent variables.

In what follows, meal complexity and the social organisation of the meal are displayed and discussed together as equally important parts of the eating systems, while the socio-demographic variables (gender, age, and education) are used as control variables.

### Meal setting in the four Nordic countries

The theoretical range for hot meal complexity was 1-39 (in the data 1–16). As described above, a hot meal includes a centre, i.e. main ingredient, by default. The variation in meal complexity can consist of vegetables (0-10), staples (0-4), trimmings (0-5), bread (0-1), starter (0-1), desserts (0-6), and beverages (0-12). The number of vegetables and beverages account for most of the complexity.

There were altogether fewer hot lunches than cold ones in the four Nordic countries. Cold lunches dominate in Denmark and Norway, whereas in Finland and Sweden there were more hot lunches by number (see also Kjernes 2001). The mean score for complexity for hot lunches was the highest in Finland, and somewhat lower in other countries. There were no differences in the complexity of cold lunches between the countries.

**Table 2. Meal complexity by country (Means, SD, weighed)**
Nine out of ten dinners were eaten hot in all the four countries; hot dinners being slightly more elaborate in Sweden and in Denmark than elsewhere. Similar differences between the countries were reported in an earlier Nordic study (Kjærnes et al. 2009, Kjærnes 2001). In the complexity of cold dinners, there were no differences between the countries.

Table 3. Commensal partners for lunches and for dinners by country (per cent, weighed)
Table 3 shows country differences in commensal partners for lunches and dinners. Lunches were eaten most often either alone or with colleagues. The Norwegians and Danes had lunch alone more often than the Finns and Swedes. The proportion of lunches eaten with colleagues was somewhat bigger in Norway than in the other Nordic countries. Lunches with partners and lunches with friends were slightly more prevalent in Denmark, Sweden and Finland than in Norway. Lunches were eaten with children more often in Finland and Sweden than in the other countries. Dinners were had most often with a partner, with children or alone. Having dinner alone was more typical in Finland than in the other Nordic countries, despite the fact that the household compositions in the four countries were quite similar. The percentage of dinners with a partner or children was slightly higher in Norway and Denmark. In Sweden dinners were eaten slightly more often with relatives, friends and colleagues than in the other Nordic countries.

Table 4. Meal venue for lunches and dinners (per cent, weighed)
Although lunches and dinners in the Nordic countries are usually sociable occasions, most dinners were had at private settings (home) in 2012 (Table 4). More than a third of the respondents had their lunches at work or at a school canteen. Approximately one in 3-4 lunches were had at the work or school canteens, the extremes being Sweden (26%) and Norway (34%). In addition, 5-10% of the respondents ate their lunch during work. In all the four countries having street food for lunch was marginal, around one per cent. Having lunch on the go was also relatively rare (at highest 2.5 per cent in Norway).

A brief glance at the connection between age and lunch venue reveals that lunch venue is age-specific (no data shown): In all the four countries seven out of ten respondents over sixty years of age have lunch at home, whereas among the 15-29 year old respondents the proportion is only one third. Thus, for the groups in working age, the most usual choice is to have lunch either at the school or workplace canteen or at or during work. The proportion of workplace lunches is similar in the four countries, but café and restaurant lunches are more prevalent in Finland and Sweden than elsewhere.

Dinner venues differed somewhat from lunch venues, but there were few national differences. In all countries the majority of the respondents ate dinner at home. The Danes had dinner more often at someone else’s home, and the Swedes at a café or restaurant. Still, in 2012, same as in 1997, more people had eaten at home than in any other place (Holm, 2001).

A majority of lunches in the Nordic countries took less than half an hour. Very short lunches were slightly more prevalent in Norway than elsewhere, although lunches in Denmark and Finland were not much longer. In Sweden almost a fifth of all lunches took longer than half an hour. The duration of dinners was in general longer than the duration of lunches. Still, the majority of dinners lasted under 30 minutes (in Denmark 72.3%, in Finland 84.7%, in Norway 75.7%, and in Sweden 70.1%). In other words, dinners were longer in Sweden and Denmark than in Norway and Finland.

### Lunch sociability and complexity

http://aof.revues.org/7666#article-7666
We also examined to what extent meal complexity is associated with other aspects of the eating system representing the social setting of the meal: Presence of commensal partners, meal venue, day of the week, and duration of the meal. Socio-demographic variables were used as controlling variables. The independent variables’ effects on the complexity of hot lunches are presented in Table 5 (mean scores only for the significant differences). The effect of the presence of commensal partners for hot lunches was not very strong. In Denmark, only the presence of relatives affected hot lunch complexity in a positive way. Finland is an exception in that the presence of almost any company had a positive impact on hot lunch complexity.

Table 5. Mean scores for the complexity of hot lunches in the four countries, significant differences
The venue of the meal was important in explaining complexity especially in Finland and Sweden. Home lunches were the least complex in both countries, and in Finland hot lunches eaten at work or at a café or restaurant were more complex by comparison. In Sweden, having hot lunch at a café or restaurant increased the complexity substantially. Also having lunch at someone else’s home increased the complexity to some extent. Moreover, in Denmark and Norway the venue of the hot lunch did not have a significant effect on hot lunch complexity.
In Norway and Sweden lunches at weekends were less complex than lunches on weekdays, which may reflect the variety within working lunches and the simplicity of home lunches. Longer duration was linked to hot lunch complexity in all of the four countries.

Individual background did not have a strong relationship with hot lunch complexity. In Finland, women had less complex hot lunches than men, and in Finland and Sweden the over-60-year-old respondents ate more complex lunches than the reference group, the youngest respondents (age 15-29). Education did not have a significant effect in Finland or in Norway, but in Denmark respondents with vocational schooling had less complex lunches than respondents with basic schooling. In Sweden the respondents with vocational schooling or 1–3 years of education after vocational school or high school had more complex hot lunches than the group with the lowest level of education.

The independent variables proved mostly inoperative in explaining the variety within cold lunches. However, both in Denmark and in Norway longer duration was linked to the higher complexity of cold lunches. In Norway cold lunches eaten at work or at a café or restaurant were also less complex as compared to cold lunches eaten at home. Generally, the differences in the complexity of cold lunches were small (no data shown).

**Dinner sociability and complexity**

In table 6 we present the mean scores for the complexity of hot dinners. The full Poisson regression models are presented in the annex (Table A2). The presence of commensal partners affected hot dinner complexity in all the four countries (Table 6). In Denmark the presence of relatives, colleagues or friends added to the complexity of the hot dinners the most, and the presence of a partner to a lesser extent. Only the presence of children did not have an effect on hot dinner complexity. In Finland the presence of relatives, a partner, colleagues or others increased the complexity of hot dinners. The presence of children or friends did not prove significant in explaining the complexity. Also in Norway and Sweden, the presence of a partner, relatives or friends increased the complexity of hot dinners. Thus, the presence of children, colleagues or others did not have a significant effect on the complexity in either Norway or Sweden.

**Table 6. Mean scores for the complexity of hot dinners in the four countries, significant differences**
<table>
<thead>
<tr>
<th>Country</th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>(means)</td>
<td>(5.1)</td>
<td>(4.9)</td>
<td>(4.9)</td>
<td>(5.3)</td>
</tr>
</tbody>
</table>

### Commensal partners

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner (ref nc)</td>
<td>5.9 (+0.4)</td>
<td>6.6 (+0.7)</td>
<td>5.5 (+0.4)</td>
<td>5.8 (+0.3)</td>
</tr>
<tr>
<td>Children (ref nc)</td>
<td>6.2 (+1.0)</td>
<td>6.7 (+0.9)</td>
<td>6.5 (+0.4)</td>
<td>6.9 (+0.6)</td>
</tr>
<tr>
<td>Relatives (ref nc)</td>
<td>6.0 (+0.9)</td>
<td>6.7 (+0.9)</td>
<td>6.4 (+0.4)</td>
<td>6.9 (+1.0)</td>
</tr>
<tr>
<td>Friends (ref nc)</td>
<td>6.1 (+0.5)</td>
<td>7.1 (+1.6)</td>
<td>6.1 (+0.5)</td>
<td>6.0 (+1.0)</td>
</tr>
<tr>
<td>Colleagues or others (ref nc)</td>
<td>6.1 (+0.5)</td>
<td>7.1 (+1.6)</td>
<td>6.1 (+0.5)</td>
<td>6.0 (+1.0)</td>
</tr>
</tbody>
</table>

### Meal venue

<table>
<thead>
<tr>
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<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home (ref)</td>
<td>5.7</td>
<td>5.9 (+0.6)</td>
<td>6.0 (+1.3)</td>
<td>6.0 (+0.7)</td>
</tr>
<tr>
<td>Someone else’s home</td>
<td>6.7 (+1.0)</td>
<td>6.7 (+1.0)</td>
<td>5.9 (+0.6)</td>
<td>6.9 (+0.6)</td>
</tr>
<tr>
<td>At or during work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Café or restaurant</td>
<td>7.0 (+1.3)</td>
<td>7.0 (+1.3)</td>
<td>6.0 (+1.3)</td>
<td>6.0 (+0.7)</td>
</tr>
<tr>
<td>On the go or other</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### Day

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
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<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday (ref)</td>
<td>5.4</td>
<td>5.8</td>
<td>5.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Weekend</td>
<td>5.8 (+0.3)</td>
<td>5.6 (+0.3)</td>
<td>5.5 (+0.3)</td>
<td>5.8 (+0.3)</td>
</tr>
</tbody>
</table>

### Duration

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
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<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 min (ref)</td>
<td>4.0</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>16-20 min</td>
<td>6.6 (+1.7)</td>
<td>6.1 (+1.6)</td>
<td>5.8 (+0.5)</td>
<td>5.8 (+1.2)</td>
</tr>
<tr>
<td>21-33 min</td>
<td>6.1 (+2.0)</td>
<td>7.1 (+2.0)</td>
<td>5.5 (+1.1)</td>
<td>6.0 (+1.8)</td>
</tr>
<tr>
<td>Longer than 30 min</td>
<td>7.4 (+3.3)</td>
<td>7.9 (+3.4)</td>
<td>6.6 (+2.1)</td>
<td>6.9 (+2.7)</td>
</tr>
</tbody>
</table>

### Gender

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (ref)</td>
<td>5.4</td>
<td>5.8</td>
<td>5.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Female</td>
<td>5.8 (+0.3)</td>
<td>6.1 (+0.3)</td>
<td>5.5 (+0.3)</td>
<td>5.5 (+0.3)</td>
</tr>
</tbody>
</table>

### Age group

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-29 (ref)</td>
<td>5.4</td>
<td>5.8</td>
<td>5.1</td>
<td>5.2</td>
</tr>
<tr>
<td>30-44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60+</td>
<td>6.0 (+0.8)</td>
<td>6.9 (+1.1)</td>
<td>5.7 (+0.8)</td>
<td>6.3 (+1.0)</td>
</tr>
</tbody>
</table>

### Education

<table>
<thead>
<tr>
<th></th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic (ref)</td>
<td>5.4</td>
<td>5.8</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Vocational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1-3 years after</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;3 years</td>
<td>5.9 (+0.5)</td>
<td>5.6 (+0.5)</td>
<td>5.8 (+0.4)</td>
<td>5.8 (+0.4)</td>
</tr>
</tbody>
</table>

51 Meal venue was not a significant predictor for hot dinner complexity in Denmark or Norway. In Finland and Sweden the hot dinners eaten at someone else’s home or at a café or restaurant were more complex than dinners eaten at home.

52 Hot dinners at weekends and on weekdays were equally complex in Denmark, Finland, and Norway. Only in Sweden were the weekend dinners slightly more complex than those on weekdays. The duration of the dinner had a positive effect on hot dinner complexity in all of the countries, the more complex dinners taking more time.
Individual background (gender, age group, and education) was also linked to hot dinner complexity. In Norway, women’s hot dinners were slightly more complex than men’s, whereas in other countries there was no gender difference. Moreover, in all the countries, the over-60-year-olds had slightly more complex dinners than the youngest group (age 15-29). The differences related to education were small and few; only in Denmark and Sweden the group with the highest education had slightly more complex hot dinners than the group with basic schooling.

While especially meal sociability and duration were linked to hot dinner complexity, none of the independent variables conveyed significant differences in relation to cold dinner complexity. The primary reason for this is that there is not much variation in the complexity of cold dinners within the different countries, nor between them (no data shown).

**Discussion**

In the Western countries popular concerns about changing food habits have to do with sociability, the decline of the family meal, the erosion of national culinary cultures, and the increased popularity of convenience and fast foods (Rozin et al. 2006, Warde et al. 2007). This general destructuration of eating practices (Mäkelä 2001) may mean that meals are becoming simpler and shorter, and that in general the meanings of eating in everyday life are changing. In this study, we approached these questions empirically by looking at the complexity of meals in Denmark, Finland, Norway, and Sweden, through a comparative analysis of meal complexity in these countries, examining to what extent the social context of the meals as well as social backgrounds have an effect on meal complexity.

The previous Nordic research from 2001, which was used as a basis for the 2012 study, indicated that eating patterns in the Nordic countries were home-based: most of the eating took place at home either alone or with the family. Eating with colleagues was common on weekdays, but eating with friends was rather rare (Kjærnes 2001, Holm 2001). The findings contradicted with other research that has suggested that because Nordic people are active outside home in leisure time, it could be expected that much of the eating would also take place in the public sphere.

Our results indicate that still in 2012 meals at other people’s homes and eating out in cafés or restaurants constituted only a minor proportion of everyday eating. For lunches, commensality had a bearing on the complexity of the hot meal only in Finland. This suggests that lunch has a different kind of status in Finland, resembling the trends that are discernible for dinner in all the other countries. In Finland and Sweden both hot lunches and hot dinners eaten in public at restaurants or cafés were more complex than private home lunches and dinners, whereas in Denmark and Norway they were not. For lunches, this may be partly explained by the fact that in Denmark and Norway hot lunches were relatively rare, and with dinners, it may be speculated that in these countries after having eaten a simple cold lunch, people prefer more elaborate hot dinners irrespective of whether they have dinner at home or elsewhere. In general, both the hot lunches and dinners that took more time were more complex in all the four countries. The difference in complexity between weekday and weekend meals was substantial only in hot dinners in Sweden. Despite the fact that at weekends more time and effort is spent on cooking (Gatley et al. 2014), this is not reflected in complexity as measured by the number of various elements in the meal. However, it may well be that the ingredients, seasoning and cooking methods differ between weekends and weekdays. The elaborateness of Swedish dinners as compared to the other three countries is supported by findings in an OECD study, which shows that in Sweden as many as four out of five of the adult population report to cook daily. Cooking is nearly as popular in Norway and Denmark, although less
time is devoted to the activity. Also in Finland more than 70 per cent of the respondents engage in cooking (OECD 2011). These qualitative differences call for further research on food preparation.

The complexity of hot dinners had a strong relation to commensality, but in cold dinners the differences were not articulate. Hot dinners within the immediate family differed from each other in that the presence of a partner increased meal complexity, whereas the presence of children had no effect on the complexity compared to dinners eaten alone. The presence of companions from outside the immediate family was unusual in most of the countries. The national meal conventions are practical and somewhat uniform: Commensal partners and meal venues are determined by family structure and employment status (see also Kjærnes et al. 2009). Sobal and Nelson (2003) came to the conclusion that usual commensal partners, such as colleagues and family members, are seen as related to routines in meal eating, whereas unusual partners for meals may be rare but socially significant and related to special meal occasions. Our results imply that the presence of members of the immediate family does not increase meal complexity. Having relatives over for dinner had a positive impact on hot dinner complexity across the countries. The presence of friends, colleagues or others, which is exceptional, is reflected in meal complexity (see also Grignon 2001, Holm 2001).

Relatively few consistent socio-demographic patterns were found to explain the differences in complexity. In all the four countries, the respondents in the oldest age group had more complex hot dinners than the youngest age group. In Finland and Sweden, the oldest age group also had more complex hot lunches. The educational differences were small, although in Denmark and Sweden the group with the highest level of education had more complex hot dinners. For hot lunches some educational differences were found only in Sweden. Regarding indicators of social differentiation, it could be argued that the relatively high level of welfare of practically all social groups, which is a distinct feature of Nordic welfare states, has made it possible, economically speaking, to procure a large number of food items for the household, irrespective of education and income disparities. This in turn could be why there is no stratification. Regarding age, a life course factor could be in effect – both the results from this analysis and recent results from Lund and Gronow (2014) suggest that age and life course effects appear to have an important influence on eating practices. Based on the findings, it seems that, instead of socio-demographic patterns, meal complexity is better explained by social and situational factors relating to where and with whom the meal is eaten.

The country comparison carried out in this article is based on the assumption that people within each country have more in common with each other than with people in neighbouring countries (Kuipers 2012), although ideas of convergence between different countries have been displayed in recent research (see Warde et al. 2007). From a comparative perspective, there were few differences between the four Nordic countries. The similarity may result from similar ingredients being used for cooking across the borders (see Amilien 2012). Thus, the complexity measure is not the best tool to depict these differences, as actual dishes and national peculiarities cannot be captured with a simple count measure. Further research is needed in order to study these specifics, and the relationship between lunch and dinner complexity.

Finally, the response rates of the survey data in this study were quite low in all the countries. As discussed earlier, response rates are not per se a good indicator of data quality. In line with this, we also showed that the data produced results and patterns that were similar to other data sources. This indicates that the results of this study probably represent the eating patterns of Nordic populations quite well. Even though the previous analyses of the 1997 data support the validity of our data and results, we note that the analysis presented here should ideally be reproduced using data with substantially higher response rates.
**Bibliography**


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**Annex**

**ANNEX**

**Table A1.** Meal complexity for hot lunches by social context and background in the four countries, Poisson regression (B, Sig.), unweighed sub-sample

<table>
<thead>
<tr>
<th></th>
<th>Denmark (N = 310)</th>
<th>Finland (N = 1077)</th>
<th>Norway (N = 254)</th>
<th>Sweden (N = 1108)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B, p, SE</td>
<td>B, p, SE</td>
<td>B, p, SE</td>
<td>B, p, SE</td>
</tr>
<tr>
<td><strong>Interact</strong></td>
<td>1.2** 0.14</td>
<td>1.0** 0.08</td>
<td>1.1** 0.07</td>
<td>1.5** 0.07</td>
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<tr>
<td><strong>Commonalperson</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Partner</td>
<td>1.6 0.06 0.08</td>
<td>2.4 0.12** 0.04</td>
<td>1.6 0.01 0.00</td>
<td>2.3 0.06 0.04</td>
</tr>
<tr>
<td>Children</td>
<td>0.9 0.01 0.12</td>
<td>0.9 0.01** 0.00</td>
<td>0.9 0.01 0.12</td>
<td>0.9 0.00 0.00</td>
</tr>
<tr>
<td>Relatives</td>
<td>3.1 0.07 0.08</td>
<td>3.1 0.06** 0.00</td>
<td>3.3 0.07 0.06</td>
<td>3.1 0.08 0.08</td>
</tr>
<tr>
<td>Friends</td>
<td>1.0 0.12 0.09</td>
<td>1.1 0.09** 0.00</td>
<td>1.0 0.06 0.11</td>
<td>0.7 0.01 0.05</td>
</tr>
<tr>
<td>Colleagues or other</td>
<td>1.2 0.15 0.09</td>
<td>1.0 0.08** 0.00</td>
<td>1.0 0.11 0.03</td>
<td>1.0 0.02 0.07</td>
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<tr>
<td><strong>Meal venue</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At home</td>
<td>3.2 0.0 0.0</td>
<td>4.6 0.0 0.0</td>
<td>3.2 0.0 0.0</td>
<td>4.6 0.0 0.0</td>
</tr>
<tr>
<td>Someone else’s home</td>
<td>2.6 0.12 0.10</td>
<td>3.2 0.04 0.02</td>
<td>3.1 0.17 0.09</td>
<td>3.1 0.16 0.04</td>
</tr>
<tr>
<td>At or during work</td>
<td>4.1 0.10 0.05</td>
<td>3.1 0.07 0.04</td>
<td>3.1 0.12 0.02</td>
<td>3.1 0.06 0.04</td>
</tr>
<tr>
<td>Café or restaurant</td>
<td>1.0 0.0 0.0</td>
<td>1.5 0.05 0.00</td>
<td>1.0 0.05 0.01</td>
<td>1.5 0.08 0.02</td>
</tr>
<tr>
<td>On the go or other</td>
<td>1.1 0.12 0.09</td>
<td>1.0 0.08 0.02</td>
<td>1.1 0.12 0.09</td>
<td>1.0 0.08 0.02</td>
</tr>
<tr>
<td><strong>Day</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Today</td>
<td>7.5 0.0 0.0</td>
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<td>7.6 0.0 0.0</td>
<td>7.5 0.0 0.0</td>
</tr>
<tr>
<td>Weekend</td>
<td>2.6 0.0 0.0</td>
<td>2.3 0.0 0.0</td>
<td>2.6 0.0 0.0</td>
<td>2.3 0.0 0.0</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
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<td></td>
</tr>
<tr>
<td>Longer than 10 min</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
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<tr>
<td>2-30 min</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
</tr>
<tr>
<td>10-20 min</td>
<td>1.5 0.0 0.0</td>
<td>1.5 0.0 0.0</td>
<td>1.5 0.0 0.0</td>
<td>1.5 0.0 0.0</td>
</tr>
<tr>
<td>Less than 10 min</td>
<td>1.2 0.0 0.0</td>
<td>1.2 0.0 0.0</td>
<td>1.2 0.0 0.0</td>
<td>1.2 0.0 0.0</td>
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<tr>
<td><strong>Center</strong></td>
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<tr>
<td>Main</td>
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<td>0.0 0.0 0.0</td>
<td>0.0 0.0 0.0</td>
<td>0.0 0.0 0.0</td>
</tr>
<tr>
<td>Private</td>
<td>5.2 0.0 0.0</td>
<td>5.7 0.0 0.0</td>
<td>5.2 0.0 0.0</td>
<td>5.7 0.0 0.0</td>
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<tr>
<td><strong>Age group</strong></td>
<td></td>
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<td></td>
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<tr>
<td>15-29</td>
<td>2.5 0.0 0.0</td>
<td>3.0 0.0 0.0</td>
<td>2.5 0.0 0.0</td>
<td>2.5 0.0 0.0</td>
</tr>
<tr>
<td>30-44</td>
<td>3.8 0.0 0.0</td>
<td>3.8 0.0 0.0</td>
<td>3.8 0.0 0.0</td>
<td>3.8 0.0 0.0</td>
</tr>
<tr>
<td>45-59</td>
<td>2.2 0.0 0.0</td>
<td>2.2 0.0 0.0</td>
<td>2.2 0.0 0.0</td>
<td>2.2 0.0 0.0</td>
</tr>
<tr>
<td>60+</td>
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<td>1.3 0.0 0.0</td>
<td>1.3 0.0 0.0</td>
<td>1.3 0.0 0.0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>11.2 0.0 0.0</td>
<td>11.2 0.0 0.0</td>
<td>11.2 0.0 0.0</td>
<td>11.2 0.0 0.0</td>
</tr>
<tr>
<td>Vocational</td>
<td>1.9 0.0 0.0</td>
<td>1.9 0.0 0.0</td>
<td>1.9 0.0 0.0</td>
<td>1.9 0.0 0.0</td>
</tr>
<tr>
<td>High school</td>
<td>0.2 0.0 0.0</td>
<td>0.2 0.0 0.0</td>
<td>0.2 0.0 0.0</td>
<td>0.2 0.0 0.0</td>
</tr>
<tr>
<td>1-3 years after</td>
<td>2.5 0.0 0.0</td>
<td>2.5 0.0 0.0</td>
<td>2.5 0.0 0.0</td>
<td>2.5 0.0 0.0</td>
</tr>
<tr>
<td>3+ years after</td>
<td>4.2 0.0 0.0</td>
<td>4.2 0.0 0.0</td>
<td>4.2 0.0 0.0</td>
<td>4.2 0.0 0.0</td>
</tr>
</tbody>
</table>

**Table A2.** Meal complexity for hot dinners by social context and background in the four countries, Poisson regression (B, Sig.), unweighed sub-sample
Notes

1. Although web-based surveys are sometimes seen as a means to improve response rates, it is known that mail surveys incorporating a concurrent web-option have significantly lower response rates than those that do not (see Medway & Fulton 2012).

2. The parameter estimates (B) for the effects of different explanatory variables to the complexity of hot lunches were calculated by using Poisson regression. The full country models are presented in the annex (Table A1).

3. Poisson regression, like most models in the GLM family, has no direct analogue to the explanatory rate $R^2$. Deviance for intercept-only model and deviance for the fitted model were used to calculate Pseudo $R^2$ (see Coxe et al. 2009, 126-127).

List of illustrations
References

Electronic reference
Nina Kahma, Johanna Mäkelä, Mari Niva and Thomas Bøker Lund, « Associations between meal complexity and social context in four Nordic countries », Anthropology of food [Online], S10 | 2014, Online since 12 December 2014, connection on 11 October 2016. URL : http://aof.revues.org/7666
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