

Comparative Research Using Secondary Data Analysis: Exploring Europe's Changing Food Consumption Practices

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Discipline

Sociology [D1]

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Social Change and Transformation [SD-Soc-8]

Academic Level

Postgraduate

Contributor Biography

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European workplace regimes, welfare attitudes, religiosity and secularization, sociology of food, consumption and aging, and political legitimacy.

Published Articles

Healy, A. E. (2014a). Convergence or difference? Western European household food expenditure. *British Food Journal*, 116, 792-804. doi:10.1108/BFJ-11-2012-0274

Healy, A. E. (2014b). Eating and ageing: A comparison over time of Italy, Ireland, the United Kingdom and France. *International Journal of Comparative Sociology*, 55, 379-403. doi:10.1177/0020715214561132

Healy, A. E. (2012). *European food consumption: Convergence or persistent difference?* (Unpublished thesis). Retrieved from <https://ulir.ul.ie/handle/10344/2824>

Abstract

Secondary data analysis can make it possible to research questions with high-quality data that would not otherwise be possible, especially for an early career researcher. For my PhD research, I investigated change in food consumption and associated practices across Europe. Historically, as presented by Teuteberg and Flandrin, European food consumption would have varied significantly based on region and country, with Northern Europe relying more heavily on dairy and meat, and Southern Europe relying more on vegetables and legumes. With industrialization and globalization, I wanted to determine whether national differences were still salient or if other factors, such as class and gender, were more statistically interesting for exploring differences in consumption. Given data availability and historical food cuisines (or lack thereof), I used four waves of household budget survey data (1985-2005) from a subset of European countries, specifically Ireland, Italy, the United Kingdom, and France. Given the scope of the project, both

over time and cross-nationally, it was necessary to use secondary data analysis for this research. However, there were challenges that took time to resolve. The data preparation was iterative; coding of one country often meant recoding of others. However, coding, analysis, recoding and more analysis of the data sets for equivalence and descriptive statistics exposed trends and patterns that existed within the data sets. It became obvious that country differences were still important. What also emerged was that older people in Italy and France have very different food expenditure patterns than older people in Ireland and the United Kingdom, which indicate different food consumption practices. These differences coincide with country differences that have been discussed in nutritional literature and named, “the Mediterranean diet” and “the French paradox”, and provide more insight into the health differences in older people that exist between the researched countries.

Learning Outcomes

By the end of this case, students should be able to

- List advantages and disadvantages of using secondary data analysis
- Integrate key organizational tools for secondary data analysis into their own research
- Understand how important (and time-consuming) the data preparation process can be in secondary data analysis

Case Study

Project Overview and Context

For my PhD research, I chose to investigate change in food consumption across Europe nationally and at the social group level to determine whether national differences were still

important or whether other factors, such as class and age, for instance, were more interesting. As a theoretical lens, I used convergence theory. In defining convergence theory, economists such as Eatwell et al. (1998) had hypothesized that countries with similar levels of social and economic development should become more similar politically over time; sociologists such as Inkeles (1998) extended convergence theory to the cultural aspects of society as well. As such, I chose to investigate convergence via food.

With the formation of the European Union (EU) and the establishment of a common European market, countries within the EU have had more exposure and easier access to the same foods than they had in the past. Although this could be seen as a homogenizing force for Europe as a whole, it could also be a diverging force within participating countries if some residents integrate new foods into their diets, whereas others do not, instead choosing to retain more traditional diets and food practices.

From a sociological perspective, I felt that convergence in food consumption patterns was important to study for a number of reasons. First, convergence in consumption would indicate that the inhabitants of countries within Western Europe had reached a similar standard of living in terms of food. Second, convergence in food consumption could indicate that globalization was having a homogenizing impact on at least one aspect of European national cultural identities. Finally, convergence in food consumption patterns could be important from a health perspective. France and Italy have received significant attention for health benefits related to diet. Convergence toward food practices associated with “the Mediterranean Diet” (a diet high in fruit, vegetables, olive oil, and legumes) or “the French Paradox” (a diet like the Mediterranean diet which also includes wine and some animal fats) could indicate improved health outcomes for converging socio-demographic groups or countries. (Recent research related to both diets has

been done by Da Silva et al. (2009); Pelucchi, Galeone, Negri, and La Vecchia (2010) and Rozin, Remick, and Fischler (2011), for instance.)

Although agricultural economics research, like that done by Petrovici, Ritson, and Ness (2005) and Regmi and Unnevehr (2005), had analyzed data at the country-level using data such as Food and Agricultural Organization (FAO) food balance sheets, I wanted to look at socio-demographic differences as well which meant using data at the household or individual level. Therefore, instead of being able to compare one summary statistic per year per country across Europe (such as average calories per capita), I needed to analyze thousands of cases per year per country. As such, it was only possible to analyze a subset of Western European countries. Based on data availability and theoretical interest, I chose two countries that were known for their cuisines (France and Italy) and two that, at least until very recently, were not (Ireland and the United Kingdom). Each country was analyzed individually to assess change both at the national level and then within different social groupings within the country. These initial descriptive statistics were also compared across countries. Then, the data from the four sample countries were pooled to assess international change overall and to determine whether nationality was still an important differentiating factor or whether other social groupings were more significant. Factors such as education, class, gender, age, household composition, and employment status, for instance, all needed to be included in the analysis.

In analyzing food expenditure patterns for this research, however, it became obvious that the biggest differences in food expenditures, both statistically and meaningfully, were associated with different food practices. The food expenditure category that differentiated the most between countries, age groups, and class (as measured by educational attainment) was the percentage of the household food budget that was spent on dining out. Also, of interest, were the differences in

relative expenditure on prepared meals. So, what began as a study investigating changes in food consumption evolved into an investigation of changes in practices associated with food.

(Ultimately, this became a separate piece of research investigating cross-national differences in aging and eating.)

Research Practicalities: Availability and Access to Existing Data

Once I had decided on the topic that I wanted to research, the most obvious question was, “Can I do this?” I knew that I would need to use existing data because of the scope of my question, both historically and internationally. However, I was faced with some research practicalities that are specific to secondary data analysis that are not issues when you gather your own data. If you think you need to use existing data for your comparative research, you need to ask the following:

- Does secondary data exist that will allow me to answer my research question specifically (not just something similar)?
- Do I have access to the data?
- If researching a question over time or cross-nationally, are the variables of interest in the various data sets the same? If not and the data sets will be merged, can the matching variables across data sets be made identical? If not, can the research question be answered by analyzing data sets separately?

Although a key advantage to using secondary data is that it may allow you to analyze high-quality data that you would not be able to gather yourself, it is only useful if it is relevant.

As such, the most important question when planning your research is, “does secondary data exist that will allow me to answer my research question?”

Because my research spanned 20 years and covered four countries, there was no way that I would be able to gather my own data for my PhD research. I had to use existing data. There were two options available to me. I could have used existing nutritional surveys or household budget surveys (HBS). I chose the latter for a number of reasons. First of all, HBS have been gathered regularly across Europe for decades, with computerized data sets available for many countries from the 1980s. Nutritional surveys were not collected as regularly in all of the countries that I was studying. Second, although HBS surveys are not standardized across Europe (though there have been efforts made to harmonize), the surveys all gather basic expenditure and socio-demographic data, making them generally comparable across countries. Third, although HBS do not directly measure consumption, they do gather data on expenditure which can serve as a proxy for consumption. Even more importantly (as I discovered during the research), the expenditure data provide valuable information on food practices. Specifically, it is possible to see how much of a household budget is spent on dining out, on prepared meals, and on foods to be prepared at home – all interesting in terms of lifestyle and health. Finally, given that most nutritional surveys are self-report and that respondents are aware that they are completing a survey that will assess health practices, there is a higher likelihood of response bias in self-report nutritional surveys than there is in HBS (which are designed for the calculation of the consumer price index). There is no normative evaluation of “good food expenditure” versus “bad food expenditure” in a HBS, and, therefore, less incentive for people to exaggerate healthy purchases from unhealthy ones, something that is somewhat inherent in self-report nutritional studies.

Once you have determined that the data exist, the next relevant question to ask is, “do I have access to the data?” Another advantage of secondary data is that as a student or a researcher within an educational institution, most countries will give you free access to their data. Data that have been gathered using public monies is often required to be made available to other researchers, at least those within the public sector. Therefore, secondary data analysis can save you a considerable amount of time (and other resources, such as money) that would have been used for data collection. The data are also (probably) of a higher quality than a student or early career researcher would be able to gather. Having said that, not all data are accessible. Some data sets are restricted or have had variables recoded to protect the anonymity of participants.

A good place to start when looking for data is a national or international data archive. In Europe, this is the Consortium for European Social Science Data Archives (CESSDA). CESSDA provides a data catalogue that indexes available data sets, and it also provides links to national data archives across Europe. In addition to France, Ireland, Italy, and the United Kingdom, CESSDA also provides links to archives in Austria, Belgium, the Czech Republic, Denmark, Finland, Germany, Hungary, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and Switzerland. Also of use are national and international institutes for statistics, such as Eurostat. Of use for my research were the Irish Social Science Data Archive (ISSDA), the UK Data Service, the National Institute of Statistics and Economic Studies in France (INSEE), and the National Institute of Statistics in Italy (Istat). Generally, for access to data, I first was required to register on-line. Sometimes this simply required an e-mail address. For some data sets, I was also required to provide a description of the research that I was doing with an agreement to abide by the conditions of use set down by the archive. For some countries,

it was also necessary to have the signature of my supervisor and the official stamp of the university.

One of the big disadvantages of using secondary data is that it has been collected for someone else's research, which may or may not be similar to your research. Even if you have access to data that seems relevant for answering your question, you need to determine whether or not all of the data sets have all of the variables that you need for your analysis. To answer these questions, it is necessary to have done a fairly comprehensive introductory literature review of your topic to see what variables have been used in the past. Even if all of the data sets contain variables that are necessary for your research, you then need to determine whether the variables within the data set have been coded in a way that is useful for your research. If not, can they be recoded to make them useful? One place to look for this information is the coding dictionary that should accompany each data set. However, a difficulty in using secondary data, which often have large number of variables, is finding key variables amid many, many unnecessary variables that are often coded with names that are non-intuitive (e.g. "v164c" instead of "carrots"). Using "Ctrl-F" in the coding dictionary is useful if you know the exact word that you are looking for. Otherwise, finding relevant variables in existing data sets can be time-consuming.

Comparable Data

The next question then, after finding data that you can access, is whether or not the relevant variables in your data sets are the same or can be made the same. In terms of my research, this proved to be my biggest challenge. Although all HBS provided basic food expenditure data, the biggest challenge I faced was making data comparable across time and across countries. The data sets ranged from having only 22 variables specific to food expenditure in the early Italian HBS

(1985-1995 Indagine sui Consumi delle Famiglie), to 265 variables in the 1994/1995 French HBS (Enquête Budget des familles). For comparison, it was necessary to reduce the number of food variables down to the lowest number of variables present in any of the data sets. Many variables needed to be combined in the larger data sets into broader food expenditure categories to reduce the number of variables. As such, much detail that was culturally interesting was lost in aggregation. A particularly large expenditure category, especially for some socio-demographic groups, was related to dining out. The data were not broken down by type of food consumed (though more recent UK data sets do provide this information); generally, it was differentiated by place of consumption.

Another issue was equalizing currencies. Given that the relevant dates for my analysis (1985–2005) began pre-euro, much of the data sets were in national currencies. As a simple way to compare across time and across countries, expenditure data were converted to percentages, making it possible to compare relative expenditure.

Critical socio-demographic variables existed across all HBS, including the key explanatory variables that research literature had indicated were important for studying consumption (gender, age, and educational attainment, for instance). Otherwise, I would not have been able to do my research. However, other interesting variables appeared in some but not all HBS. For instance, although some of the HBS included variables related to parents' educational attainment, which would have given me the chance to look at Bourdieu's (2010 [1984]) theory of cultural capital vis-à-vis consumption, sadly, other HBS did not. So, even though I had the data that I needed to do my research, there was some interesting research that, whereas possible in some of my countries of interest, was not possible across all countries.

Research Design

Based on previous research into convergence and food, I knew what types of analysis were necessary to answer my question. The analysis for my PhD began with descriptive analysis within each country across time; I assessed how relative expenditures on different types of foods varied within subgroups based on age, gender, employment status, educational attainment, domicile, region, and household composition. I also calculated and compared changes in the coefficient of variation (the standard deviation divided by the mean) to determine whether expenditures on certain types of foods/food practices had become more or less varied over time as a way of determining what food expenditures/practices were becoming more or less common. Previous research investigating convergence in food expenditure patterns across Europe, such as Petrovici et al.'s (2005), had used cluster analysis to see whether regions still grouped together in terms of caloric intake and/or expenditure. Therefore, with a merged data set of all countries and all time periods, I also used cluster analysis to explore the data to determine whether my data clustered based on country or whether other factors, such as age and gender, were influential in shaping food budgets across national boundaries. I found four typologies of food budgets which I called: "Traditional", "Healthier or exclusionary", "Modern family," and "Cosmopolitan". Finally, I needed to use regression to explore the relationship between all of my independent variables and spending within food budgets, but I needed a type of regression that allowed me to predict an entire food budget. As such, based on work by Papke and Wooldridge (1996) and Buis (2010), I used a type of regression called fractional multinomial logit (FML) which allows multiple-dependent variables, as long as they all add up to one. With FML, I was able to predict household food budgets using all of these independent variables.

The analysis for my research into eating and aging developed from the initial descriptive analysis that I had done for my PhD research. During the initial, national descriptive analyses, I discovered some interesting trends related to country, age and food expenditure which I developed further after I finished my PhD. The analysis I used for this research was a bit different from my initial analysis in that I wanted to see how all of the explanatory variables included in my analysis interacted with country (i.e. how the impact of age, household composition, and gender differed within each country in predicting relative expenditure on types of food consumption practices). As such, FML to predict household food budgets was used (again), but this time on each national data set separately for the earliest wave of data and the latest. To compare, all of the regression equations were presented together in a table.

However, to do all of this, the data from all 16 data sets had to be made equivalent. Data preparation took a considerable amount of time for this project; I would estimate it took at least 20% to 25% of my research time overall.

“Method” in Action: Data Preparation—Coding and Organizing Data

Equivalence is the key to comparative research. Although some data sets such as the European Social Survey (ESS) and the World Values Survey (WVS) are designed to be analyzed over time and cross-nationally, many sources of secondary data are not. The HBS I used were from four different countries and from four different waves of data collection. Because the survey data from France and Italy were in French and Italian, obviously, this also meant that the data from these countries had to be translated. The data were generally coded differently across countries,

sometimes even within countries over time. Sometimes, variables that were coded the same across time within countries were given different variable names in different waves. To merge data sets successfully for analysis, “matching” variables across all data sets have to share the same name, otherwise the statistical analysis package will recognize them as different variables. Within the matching variables, the coding has to be the same as well. For instance, because age was important to my analysis, I included a variable “AgeGroups” in all of my data sets coded: 15- to 24-, 25- to 34-, 35- to 44-, 45- to 54-, 55- to 64-, and more than 65-year olds for my PhD and 55- to 64-, 65- to 74-, and more than 75-year olds for my analysis of eating and aging. Although the variable was coded into age groups in some of my data sets, others only had a variable for year of birth or age. Therefore, I had to build the variable within some of the data sets so that they matched the other data sets.

Another issue had to do with data structure. Although Ireland and Italy only had one data set per wave of survey, France and the United Kingdom had multiple data sets within some waves of HBS which contained different types of variables (e.g. expenditure data, housing data). As such, it was necessary to either merge data sets together for each survey wave for those countries or extract variables of interest and merge them with expenditure data and other relevant socio-demographic variables that I needed for my within-country analyses. Keeping track of original data sets and new extracted and/or merged data sets took quite a bit of organization and planning.

Practical Lessons Learned: Planning, Organization, and Data Preparation

From a long year of coding, recoding, and merging the data, I discovered that some of the key aspects of doing secondary data analysis were planning, organization, and data preparation. I found it necessary to:

- Keep an original, untouched version of each data set saved just in case something went wrong in the data preparation or analysis process. Although some of the countries had posted the data to me on disks, others had provided electronic links which expired after a certain amount of time. It was important to have a copy stored safely in a number of places (on my PC, on a memory stick, and on the network drive of my university).

- Keep a diary of the entire process including the decisions made on how variables were named and coded. Because I was working with 16 data sets, I often had to go back to a previously coded data set to re-code based on information gained from coding subsequent data sets. For instance, in checking the coding in one data set, I discovered that household composition only had four codes: single, couple, couple with children, and other. The previously analyzed countries' data sets had many more options including single parents. Ultimately, in merging the data sets together, codes that did not exist across all data sets had to be removed and placed in "other". Although a more thorough review of the data coding dictionaries with each data set would have been a good idea before I started, I found it difficult, at times, to find and decipher the information, especially with some of the earlier data sets. It was crucial to keep notes on this process.

- "Clone" existing relevant variables within the data set(s), leaving the original variables in the data set with their original name and coding. I found that by giving these variables common sense names (e.g. "AgeGroup" for age groupings), it made them easier to work with (much easier to remember "AgeGroup" than "var216c", for instance).

- Keep syntax of all recoding of variables (e.g. “age” to “AgeGroup”). The syntax then needed to be saved with file names that made sense from an organizational perspective (e.g. country name and year, possibly variable-types included in file);
- Save only the variables that I was going to use into a smaller, working data sets with a common sense names (e.g. “France85_55 Plus” for a French data set from 1985 that only included data for those aged 55 and over). Some of the original HBS had literally hundreds of variables that were not relevant to my analysis. Working with that size data set is cumbersome, especially given that the combined sample size of all of the data sets exceeded 210,000 cases. Even when I had restricted my research to those aged 55 and over for my research on eating and aging, the number of cases still exceeded 40,000. Data storage of large merged sets, including analysis and findings, can be problematic; for the FML analysis on Stata using my large, merged data set (210,000 cases), I relied on the network storage facilities at my university.
- Know the data well!

In a way, knowing your data should become somewhat inherent in the process, but it is important that you allow enough time for coding, recoding, and descriptive analysis so that you can learn from your data. Given that the data preparation and coding for equivalence across data sets can become somewhat iterative, it may be necessary to do basic analysis and recoding a number of times for consistency over time and to match the evolving coding of other countries. This analysis and re-analysis of the data sets for equivalence and descriptive statistics can expose trends and patterns within and across data sets. Initial research “findings” may emerge from the data preparation process (somewhat similar to qualitative data analysis). Therefore, although an advantage of secondary data analysis is that you do not have to spend time gathering the data, a disadvantage is that you may have to spend quite a bit of time getting to know very complex data

sets and recoding/restructuring them to work with your research question. This can even be the case with data sets like the ESS and WVS that are designed to be analyzed cross-nationally. Variables may change over time; countries may add their own country-specific questions or coding.

In my research, in comparing across countries, it became obvious that what was interesting was not only the types of foods that households were buying (my initial research question), but the types of food practices that were associated with these expenditures. Expenditure on dining out emerged as a very distinctive type of expenditure, as did relative expenditure on prepared meals. These differences in expenditures were particularly interesting at the subgroup level, which is another advantage of secondary data analysis: my data sets were large enough that it was possible to analyze subgroups, such as Italian people aged more than 75 years, with significant findings (both statistically and meaningfully). Indeed, within my research, one of the most interesting trends was the difference in how older people buy food cross-nationally and what it means in terms of food preparation practices. Although older people in the United Kingdom are increasingly spending more of their food budgets on prepared meals and food away from home, older people from Italy and France spend relatively nothing on prepared meals and dining out. Because the literature on food practices and health like Chen, Lee, Chang, and Wahlqvist (2012) have shown that the activities associated with food preparation are associated with health and longevity, my findings suggest that part of the reason that older people in France and Italy are healthier than their counterparts in other non-Mediterranean parts of Europe may have to do not only with the contents of their diets but with the associated food practices as well.

Conclusion

The analysis of secondary data can make it possible to research questions historically and cross-nationally that may not be possible otherwise. It also can give a researcher access to a higher quality data with a larger sample size than would generally be possible, especially for a student or an early career researcher. Given the large N of many existing sources of data, this can also make it possible to study subgroups quantitatively with some hope of a statistically significant finding! On the downside, using existing data means working with data that have been gathered for someone else's research. It may be challenging to find data that include all relevant variables and that are coded (or can be recoded) in a way that makes it possible to study your research question. Ultimately, careful research into your substantive area, careful selection of relevant existing data, and sufficient time for data preparation, coding, and descriptive analysis are essential when using secondary data analysis.

Exercises and Discussion Questions

1. Healy said that she could not have done her research without secondary data analysis. Why?
2. What problems may arise from secondary data analysis?
3. Why is it important to have done a literature review of relevant research before you begin looking for secondary data sources?
4. How is it possible that two surveys could be collected on a similar topic and yet not be comparable?

5. Healy listed a number of useful organizational strategies to use when working with secondary data. What are they? What strategies would be useful with your data? Are there others strategies that you have used that you want to share with others?

Further Reading

Allum, N., & Arber, S. (2008). Secondary analysis of survey data. In N. Gilbert (Ed.), *Researching social life* (3rd ed., pp. 372-393). London, England: SAGE.

Bryman, A. (2015). Using existing data. In A. Bryman (Ed.), *Social research methods* (5th ed., pp. 308-328). Oxford, UK: Oxford University Press.

Web Resources

The Consortium for European Social Science Data Archives (CESSDA) at <http://cessda.net/>

- In addition to links to European data archives, CESSDA also has a range of online materials related to data management, digital preservation, and training.

Eurostat at <http://ec.europa.eu/eurostat/>

The Irish Social Science Data Archive (ISSDA) at <http://www.ucd.ie/issda/>

The UK Data Service at <https://www.ukdataservice.ac.uk/>

- The UK Data Service website includes useful guides and tutorials on data sets, topics, methods, software, and exploring online.

The National Institute of Statistics and Economic Studies in France (INSEE) at

<http://www.insee.fr/en/default.asp>

The National Institute of Statistics in Italy (Istat) at <http://www.istat.it/en/>

References

- Bourdieu, P. (2010). *Distinction: A social critique of the judgement of taste*. London, England: Routledge. Original work published 1984
- Buis, M. (2010). *Analyzing proportions*. Retrieved from http://www.stata.com/meeting/germany10/germany10_buis.pdf
- Chen, R. C. Y., Lee, M. S., Chang, Y. H., & Wahlqvist, M. L. (2012). Cooking frequency may enhance survival in Taiwanese elderly. *Public Health Nutrition, 15*, 1142-1149.
doi:10.1017/S136898001200136X
- Da Silva, R., Bach-Faig, A., Quintana, B. R., Buckland, G., de Almeida, M. D. V., & Serra-Majem, L. (2009). Worldwide variation of adherence to the Mediterranean diet, in 1961–1965 and 2000–2003. *Public Health Nutrition, 12*, 1676-1684.
doi:10.1017/S1368980009990541
- Eatwell, J., Milgate, M., & Newman, P. (1987). *The new Palgrave: A dictionary of economics*. London, England: Macmillan Publishers.
- Inkeles, A. (1998). *One world emerging? Convergence and divergence in industrial societies*. Boulder, CO: Westview Press.
- Papke, L., & Wooldridge, J. M. (1996). Econometric methods for fractional response variables with and application to 401(K) plan participation rates. *Journal of Applied Econometrics, 11*, 619-632. doi:10.3386/t0147

- Pelucchi, C., Galeone, C., Negri, E., & La Vecchia, C. (2010). Trends in adherence to the Mediterranean diet in an Italian population between 1991 and 2006. *European Journal of Clinical Nutrition*, *64*, 1052-1056. doi:10.1038/ejcn.2010.158
- Petrovici, D. A., Ritson, C., & Ness, M. (2005). Exploring disparities and similarities in European food consumption patterns. *Cahiers d'économie et sociologie rurales*, *75*, 24-49.
- Regmi, A., & Unnevehr, L. (2005, August). *Convergence or divergence in food demand: A comparison of trends in the EU and North America*. Paper presented at 11th Congress of the EAAE, The future of Rural Europe in the Global Agri-Food System, Copenhagen, Denmark.
- Rozin, P., Remick, A. K., & Fischler, C. (2011). Broad themes of difference between French and Americans in attitudes to food and other life domains: Personal versus communal values, quantity versus quality, and comforts versus joys. *Frontiers in Psychology*, *2*, 1-9.
doi:10.3389/fpsyg.2011.00177
- Teuteberg, H. J., & Flandrin, J.-L. (1999). The transformation of the European diet. In J.-L. Flandrin & M. Montanari (Eds.), *Food: A culinary history* (pp. 442-456). New York, NY: Columbia University Press.