

STUDYING **FOOD** AND **EATERS**

A cocktail of perspectives and methods

Olivier Lepiller, Tristan Fournier, Nicolas Bricas,
Muriel Figuié, eds



Studying Food and Eaters: A Cocktail of Perspectives and Methods

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Muriel Figuié (editors)

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Table of contents

A fictional introduction: when disciplines cross paths with eaters	5
<i>Nicolas Bricas, Olivier Lepiller, Tristan Fournier and Muriel Figuié</i>	

PART 1 MEASURING EATERS' PRACTICES AND REPRESENTATIONS

Chapter 1. Individual food consumption measurement: methods tailored to objectives	19
<i>Edwige Landais and Diane Djossinou</i>	
Chapter 2. Measuring individual and household food security: potential and challenges in nutritional and social science collaboration	33
<i>Emmanuelle Bouquet, Alissia Lourme-Ruiz and Anne Bichard</i>	
Chapter 3. Impact assessment on nutritional health prevention and promotion initiatives	47
<i>Marion Tharrey, Mathilde Savy, Marlène Perignon, Caroline Méjean and Nicole Darmon</i>	
Chapter 4. Experimental economics: highlighting the preferences and factors influencing people's decision making	63
<i>Douadia Bougherara, Laurent Muller and Sabrina Teyssier</i>	
Chapter 5. Subjective food wellbeing assessment: how eaters rate their food	77
<i>Christophe Serra-Mallol and Mila Lebrun</i>	

PART 2 TRACKING EATERS AND FOODS

Chapter 6. Ethnoaccounting: monitoring, counting and understanding what eaters value	89
<i>Margalida Mulet Pascual</i>	
Chapter 7. Photovoice: a participatory method to explore food environments from inhabitants' viewpoint	101
<i>Carolyn I. Auma, Michelle Holdsworth and Rebecca Pradeilles</i>	
Chapter 8. Quantified narratives: a research method that combines interviews and statistical analysis of biographical dynamics	115
<i>Grégori Akermann and Paul Coeurquetin</i>	
Chapter 9. Auto/biography: a comprehensive approach for accessing eaters' subjectivity	127
<i>Amandine Rochedy and Tristan Fournier</i>	

Chapter 10. ‘Follow-the-thing’: tracing food products to chronicle their sociospatial biography 137
Michaël Bruckert

Chapter 11. Sociological surveys of young eaters: methodological and epistemological issues..... 149
Anne Dupuy and Géraldine Comoretto

PART 3
UNDERSTANDING AND ASSESSING THE SOCIAL CONSTRUCTION
OF THE FOOD AND EATING FACT

Chapter 12. The URBAL participatory method: collectively documenting sustainable food innovation impact pathways 165
Olivier Lepiller, Élodie Valette, Alison Blay-Palmer, Denis Sautier, Michaël Bruckert, Marlène Pérignon, Nguyen Thi Tan Loc, Nguyen Thi Sau, Ophélie Roudelle and Amélie Wood

Chapter 13. Action research: an analysis and social transformation process to enhance access to sustainable food..... 177
Pauline Scherer

Chapter 14. Theatre workshops: accounting for food-sensitive experience..... 189
Estelle Fourat and Frédérique Jankowski

Chapter 15. Focus groups: studying food and eating through thematic discussion... 201
Amandine Rochedy and Sandrine Barrey

List of authors..... 215

A fictional introduction: when disciplines cross paths with eaters

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Food studies have carved an academic niche in English-speaking countries, especially the United States, yet in France they remain segmented within historically entrenched disciplinary fields (Poulain, 2017). This situation has endured despite institutional calls for interdisciplinarity, which is not always put into practice. Hence, on one side of the Atlantic, there is an established research strand devoted to the food theme that has the appeal of being open and territorial in scope, although confusion sometimes arises due to differences in research methods and conceptual frameworks. On the other side of the ocean, the food topic has gained academic legitimacy in a range of disciplinary areas, while policymakers and funding bodies are increasingly urging these diverse researchers to work together, despite the ongoing difficulties in between-discipline communication.

This book is based on a two-pronged hypothesis. The first is that the food issue now has sufficient legitimacy within the humanities and social sciences disciplines (anthropology, economics, geography, history and sociology) for a fertile dialogue to finally be possible with nutritional science specialists, thereby paving the way for the development of full-fledged interdisciplinary research programmes in France. The second is that researchers conducting studies on environmental, social, economic, political and health issues are prompted to address the challenge of forging a transition to more sustainable food systems, thereby providing a lever for reshaping food studies in France, particularly with a view to fostering an open science sphere to metabolise interdisciplinary interaction.

With this book and the seminar 'Méthodes d'investigation de l'alimentation et des mangeurs (MIAM)' (Methods for studying food and eaters) from which it derives, which was held in Montpellier (France) between 2017 and 2020 and organized by the Montpellier Interdisciplinary Center on Sustainable Agri-food Systems (MoISA) research unit and the UNESCO Chair in World Food Systems, we have sought to identify the possibilities, limits and conditions of this dialogue. Each of the chapters is written by one or more specialists in a given discipline, focused on a specific food research method while also considering the disciplines with which it would be possible and beneficial to collaborate. This broadening of the disciplinary horizons is considered from a data collection standpoint, but also with regard to data interpretation and analysis procedures for which methodological reflections are often relatively muted (Warde, 2014). This is not a pitch to promote mixed methods, but rather an attempt to transcend disciplinary positions based on the following argument: it is the

question that a researcher asks that legitimizes the method to be used, where the question sometimes requires the researcher to be willing to take a step back, to engage in dialogue with representatives of other disciplines and sometimes even to combine different methods. The aim of this English version of the book is to bridge the gap between French- and English-speaking research communities, and more generally between the disciplines and different epistemological traditions that underpin food studies.

By way of introduction to this dialogue project, hereafter is a brief story about a few researchers from different disciplines who meet to discuss a societal issue.

When Charlotte Bond, a sociologist at France's National Research Institute for Agriculture, Food and Environment, received an email from the *Agence Française de l'Excellence Scientifique* her heart was racing. She struggled to put together a response to the Agency's call for projects and then sent a short 4-page submission for the pre-selection phase. Her proposal dealt with the factors impacting meat consumption patterns. Charlotte was keen on the project and had succeeded in bringing together several researchers from different disciplines to focus on the same issue. They had all agreed to it without really discussing the participation details and conditions. Anyway, it was a promising subject but the timing was tight. "We'll see if we get the project", several of the researchers involved had told her.

Moreover, the Agency's comments were right on. They considered the project to be interesting and innovative and it was pre-selected, but the Agency evaluation committee requested that the researchers specify the disciplinary linkages, while taking advantage of the complementarities and possible contradictions of the different methodological approaches. Charlotte was happy even though it meant more investment. It was then essential to sit down around a table and really start talking.

A month later, Charlotte had managed to book two successive days to bring everyone together. She had found a room that could fit a large square table, around which everyone would be on the same level. She had prepared an introductory presentation on the planned structure of the project and had recruited Max Logos, a post-doctoral fellow trained in the history of science and epistemology, who was to participate in the project's Epistemology of Interdisciplinarity strand. "Well, you'll have to explain to them what that means, because I'm not sure everyone will understand", Charlotte told Max.

All the team leaders were there on D-day: Charlotte and Max; Nathalie Vitamine, nutritionist; Alan Smith, economist; Marcel Man, anthropologist, and Fabienne Chart, geographer. After a shared coffee and a round of introductions, Charlotte offered an overview of each of the project's research strands.

The first was entitled 'Describing: the current situation and baseline data on meat consumption'. This discussion focused on defining the scope of the consumption data to be collected. Nathalie Vitamine had given this some thought, and immediately proposed that all data on the consumption of foods of animal origin and protein-rich plant foods, especially legumes "which could serve as a meat substitute", should be collected. Marcel Man grinned wryly and asked: "And cassoulet, lentils with sausage and chilli con carne—which do you put them in, meat or legumes?" It was already clear that each discipline, focusing on one aspect of food, e.g. nutrition for Nathalie Vitamine and culinary culture for Marcel Man, was implicitly mapping out the boundaries of what was relevant and a monitoring priority. In this respect, the situation got more complicated when it came

to discussing the consumption measurements everyone required, i.e. quantities of products by weight for Nathalie, who would convert them into grams of protein and other nutrients, and expenditures in economic value terms for Alan Smith. Fabienne Chart asked whether consumption frequencies could be measured, but was told that it was not precise enough. She then stated that, regardless of the measurement method, she would like data on the products' geographical origins to be collected, but added that this was not an easy task. Otherwise, Marcel Man wanted to be certain that he would be able to identify the dishes being eaten, and specified that he did not want to be restricted to protein-rich foods, arguing that "a meat dish could be replaced by a spinach pie for dinner". But above all he wanted to be able to interview "eaters and not consumers" before they were handed a questionnaire that would give them too many hints as to which aspect of food was being prioritized in the survey. "You see, if your questionnaire suggests to people that you're a nutritionist, they're going to gear their answers towards the relationship between their diet and health, and that's going to bias all my answers". One could sense some irritation at this denunciation of biases associated with the disciplinary focus, and at this determination to be all-encompassing.

To cool things down, Charlotte Bond took the opportunity offered by Marcel the anthropologist to say a word about the eater/consumer distinction: "It's true that some of us here use the term 'eater' rather than 'consumer'. It's not a trite intellectual whim! The aim is above all to stress the fact that food cannot be solely reduced to the consumption stage, which is in any case ambiguous—are we talking about acquisition as a whole? Purchasing? Ingesting and digesting? All of that? Of course, consumption is still essential to consider, but there are also a whole host of foods and practices that are beyond the purview of the market. We can eat what we produce, gather, hunt, trade with our neighbours or families, etc. Otherwise the 'eater' notion helps to position the individuals we are studying in relation to all the other food system actors—from the field to the plate, to put it bluntly—but also those who discuss food in the public sphere, i.e. the media, politicians, experts, doctors, etc. These systems of actors and activities include the vital stage of cooking, which transforms foodstuffs into food, and meal sharing, which is the lifeblood of social life. The term 'eater' also places greater emphasis on meaning, thereby making it possible to consider the values, emotions, representations and rationales that underpin the very act of eating. Besides, when people have a meal or snack they generally use the verb 'to eat'. You wouldn't say to a colleague, "Would you like to consume together at noon?" Finally, there's the organic dimension to eating. We eat plant- or animal-based foods that nourish our bodies, so we're part of the food chain. If you agree, I suggest we use this term throughout this 2-day meeting. It's the term we used when we drew up our project. Don't think of it as a disciplinary lens, but rather as a first step towards interdisciplinarity, an open door to all the dimensions of the act of eating. Moreover, an interdisciplinary approach, a determination to grasp the act of eating in all its biological, psychological, sociological, anthropological, economic, geographical, historical, political and ecological complexity all encompass this 'eater' figure. On this point, I encourage you to read an article by Claude Fischler¹ (1988), chapter 8 in a book of Jean-Pierre Poulain (2017) and an article by Jean-Pierre Corbeau (2021) that reviews the emergence of this 'eater' character."

1. In French, see also the leading article by Claude Fischler (1979) and the entire issue of the *Communications* journal, for which it serves as an introduction.

Then it was time for lunch. On the way to the small restaurant that Charlotte had chosen not far from the meeting room, bilateral conversations began in an attempt to find trade-offs between disciplines. Max heard Nathalie Vitamine and Alan Smith, who were trailing behind, discussing the human sciences, “always a bit paranoid about being misunderstood by the harder approaches”, “always saying that we only see our research topics through our own narrow lenses”. But they did admit that Marcel Man and Fabienne Chart seemed really nice... And actually it was true that they were just about to eat, not consume, together. As soon as they arrived at the restaurant, Max Logos jotted down some details in his notebook. For him, the investigation had begun and he had already filled in pages and pages of notes!

The second half of the day was devoted to the topic of ‘Understanding and explaining: the factors driving meat consumption’. Over lunch, Fabienne the geographer and Marcel the anthropologist had discussed how they intended to work on the determining factors. They began the discussion by explaining that they wanted to talk freely and extensively with a sample of eaters so as to identify their reasons for changes in their meat consumption patterns, while at the same time tracing the channels through which the food had transited before ending up on the plate. Nathalie the nutritionist and Alan the economist looked at each other, and then Alan spoke up: “How many people do you want to interview?” “I don’t know, I’d say around 30”, replied Marcel Man. “You know, I try to vary the people I interview as much as possible and I stop when I don’t hear anything different from what I’ve already heard. That’s often around 30. But then sometimes it’s a bit more,” he explained.

Nathalie Vitamine beamed a big smile and said she needed a large sample size, including thousands of people if possible, so that she could conduct statistical analyses to identify the determinants of the measured consumption, which would thereby warrant publication of an article in her field. She added that a small qualitative sampling could be the icing on the cake. Yet she was aware that there was no way this project could accommodate a very large sample, and that a few hundred surveyed people could be enough. Alan Smith went on to explain that he was interested in measuring whether there were differences in consumption according to household income and that he therefore absolutely required a sample that was representative of the reference population. He too needed a large sample! Marcel Man and Fabienne Chart saw Nathalie Vitamine and Alan Smith glancing at Charlotte Bond and began to suspect that they were going to request a larger budget to carry out their large-survey survey. This would complicate their plans to each recruit a post-doc candidate. Charlotte concluded the session by pointing out that we could combine ‘quali’ and ‘quant’ research. The in-depth interviews and observations, i.e. the ‘quali’ part, would help identify response procedures for factors affecting consumption, which could in turn be proposed as response procedures in the questionnaire for the ‘quant’ part. But then we overheard a slightly disgruntled comment, “So we’re going to have to wait until the ‘quali’ part is finished before we do the ‘quant’?” Charlotte continued without batting an eyelid and concluded, “Well, we’ll also need to discuss the exact timetable, as well as the budget, before tomorrow evening!” That marked the end of the first day, and Charlotte suggested that anyone who wished to do so could come along and have dinner together in a restaurant, “as long as we don’t talk about the project!” “A restaurant serving vegetarian dishes?” someone asked!

The next morning, while coffee was being served in the meeting room, the discussion turned to the subject of ‘Intervening: building and testing ways of shaping consumption patterns.’ Charlotte, the sociologist, had proposed this topic knowing that there was some degree of consensus among the researchers that excessive meat consumption—beyond the strict nutritional requirements—was a source of various problems, i.e. health, environmental and ethical, and that the prevailing militant rhetoric advocating a reduction in meat consumption seemed to be perceived very differently depending on people’s social category. She hence suggested that the reactions of meat eaters to ongoing research initiatives, or those to be implemented in the project, could be analysed to gain insight into their motives, barriers and levers to steer this consumption towards greater ‘sustainability’, as was the overall aim of the project. Then it was Nathalie Vitamine and Marcel Man who turned out to be on the same wavelength. Both advocated in favour of building an experiment with citizen participation, while Alan Smith and Fabienne Chart wanted to test hypotheses put forward in the literature in their respective disciplines. Alan argued that researchers should not monopolize recommendations for action but should instead test a stance whereby eaters’ knowledge and tactics are fostered. They had discussed the matter in the restaurant the evening before and concluded that it would be useful to focus on the way eaters viewed the issue so as to incorporate it in the questionnaire. They thereby wanted to jointly test an action research approach based on interventions, which seemed more ethically contemporary and also easier to publish, since scientific journals were now very interested in such protocols. Meanwhile, Alan Smith was keen to test the effects of price variations through an experiment in which participants would have to demonstrate their willingness to pay a higher price for more sustainable quality meats through a commitment scheme. In order to publish the results, he needed to innovate in terms of bidding techniques, and a recent Australian paper offered a novel avenue that he was determined to test. Fabienne (the geographer), after speaking to Alan (the economist) the previous evening, thought that this experiment could be an opportunity to test the effects of meat origins on consumption patterns. She also wanted to find out whether or not changes in consumption were accompanied by changes in where meat was purchased in the ‘foodscape’, as she called it. Was the trend towards ‘flexitarianism’, in particular, benefitting local butchers? Like Alan, she was quite interested in addressing a question that had remained unanswered in the literature—a research front! “But is this a real grassroots social problem or just a research topic?” asked Nathalie Vitamine, feigning ignorance?

For lunch, Charlotte Bond had prepared a surprise in the meeting room. She had arranged with a friend who worked in a foreign lab to have some meat substitutes delivered, including mini-steaks made from animal stem cells, a kind of small sausage made from bacteria cultured on mushroom tissue, mini-silkworm skewers, and a new type of textured sesame protein bites that were slightly fatty and resembled chicken nuggets. All of these items had been cooked like meat by one of Charlotte’s women friends who was a chef. These different samples were served on attractive bamboo fibre plates and could be eaten just with a fork or even as finger food. “We don’t need a knife!” declared Alan Smith. “Good point!” agreed Charlotte Bond. She then added, “Does it really resemble meat if it can’t be cut with a knife?” Marcel Man was about to start a talk on the use of knives in meals in different societies through the ages, but Alan the economist stopped him in his tracks by quipping, “Hey, that’s a sociologist’s question!”

Who cares as long as it's edible?" "As long as it's protein, as the nutritionists would say," replied Marcel, winking at Nathalie Vitamine. She then went on to say to Alan, "It depends on whether it's a flexible food or a commodity... to be cut, as the economists would say!" "Could you pass me the 'carte'² (menu) to see what they call it?" asked Fabienne, the geographer. "Geographers can't do without 'cartes' (maps)," replied Marcel Man. Max, the science historian and epistemologist, was scribbling away in his notebook and Charlotte Bond was smiling with delight at seeing how bonds were forming based on 'friendly and disciplinary affinities in good humour,' a concept she was in the process of inventing and which she told herself was essential for the success of the project.

The afternoon was devoted to a presentation by Max, who outlined the methodological options available for the project. His talk was meant to fuel future discussions on the practical organization of the project and the guidelines for drawing up the final budget over the following weeks. He began by pointing out that the methods would vary depending on the research targets. "It's the focus issue that dictates the method. Controversies regarding methods are actually often a dialogue of the deaf between researchers who are not asking the same questions".

He explained that if you want to gauge the importance of a phenomenon, as discussed in the first half-day session, you cannot use the same methods as you would if you want to grasp the logic underlying this phenomenon or assess the relative weight of its various determining factors. "A quantitative survey can, for instance, reveal that well-off people with a high educational level eat less meat than middle class people with a low educational level. But that doesn't tell us why from the eaters' standpoint. That's what an in-depth qualitative approach can do". Even the methods will differ depending on whether we want to intervene, propose, implement or assess the effects of an initiative. Marcel Man stepped in to say, "Yeah, OK, the choice of method depends on the question to be addressed. But the choice of method also depends on the timeframe and above all the budget available. A series of in-depth interviews and their analysis can be carried out in a few months, or even a few weeks, and they don't cost very much, whereas a major quantitative survey can take over a year to set up, carry out and analyse the findings". Alan, the economist, could not help joking, "You mean, Mr Anthropologist, that methodology is economy-dependent?" And he winked and added, "...like many things, and actually like almost everything!" Charlotte then concluded, "You have to find the right trade-off between the research stance—often defined by your discipline—the question addressed and the available resources. Moreover, a few trade-offs will be needed in this project to get everyone on the same page!"

Max then delved into some epistemological issues that he said would be challenging but not useless, but which, given all the yawns that were being held back, did not seem to arouse much enthusiasm in the audience—note that the thermos of coffee had already been empty for over an hour. Yet Max was there to get the participants thinking about their research practices and to serve as an interdisciplinary watchdog. "The action of objectifying," he began, "underpins scientific activity. Firstly, it involves clearly defining the scope—or object—of the studied phenomenon and then producing a narrative on this object based on observations that have been empirically documented through data collection, before being analysed according to clear logical criteria.

2. Note that to clarify the wordplay used here in the French narrative regarding the word *carte*, the English meanings are shown in brackets.

This narrative is therefore verifiable: in the case of reproducible experimental approaches, it is disprovable or, in the case of other approaches, plausible, i.e. logically sound and based on observations. Amongst scientific approaches focused on food and eaters, several objectification methods are possible depending on their connection with the emic dimension of the studied phenomena.”

Max went on to explain that the emic concept could not be understood without reference to the opposing etic concept. Max urged the audience to read an article by Marvin Harris (1976) and another by Jean-Pierre Olivier de Sardan (1998), while mentioning that, “The etic and emic concepts were coined by Kenneth Pike on the strength of linguistic research and were then embraced in the anthropology field, notably by Marvin Harris. This distinction facilitates insight into the research stances of the different disciplines.”

He continued, “Etics is specific to science. It can be viewed as an interpretative approach to the phenomena being studied—an approach that produces a scientific descriptive, comprehension and explanatory discourse. Scientists adopt clearly identified methods and rational rules to produce this discourse. This is commonly known as the ‘scholarly sense’”. Max gave examples of etic discourses from different disciplines, explaining that such concepts, with expressions like ‘commensal situation’, ‘nutritional density’, ‘food diversity’, ‘willingness to pay’, ‘culinary triangle’, ‘food environment’, etc., often made researchers incomprehensible to ordinary folk.

“In contrast,” Max went on, “the emic approach refers to so-called ‘common sense’. This is the discourse expressed by survey respondents, representations that can be expressed and reconstructed by the interviewer, or sociocultural codes and norms that respondents are able to explain with the researcher’s help, because respondents are not always very aware of them nor are they easy for them to express. A social norm, for instance, is characterized by the social sanction associated with its violation. It can be revealed by asking the respondent to assess supposedly transgressive behaviour. For example, a respondent could be asked what he/she would think if one of his/her guests refused to eat the meat dish he/she had prepared. We would then be able to identify the norms related to vegetarianism and the sharing of meals in vegetarian communities.”

But right after he had explained the distinction between etic and emic, and as humanities researchers tend to do—Nathalie Vitamine silently laughed while saying, “It’s a mania with them”—, Max then made it clear that this distinction should not be regarded as a strict opposition. Instead, etic and emic are two poles of the same continuum. Nathalie picked up on this comment, “By the way, don’t we all ultimately deal with the emic? The fact that we’re studying human food means we’re studying human beings capable of speaking and producing meaning. Let’s not forget that.”

Marcel Man nodded from the back of the room next to the radiator, and said, “I completely agree, but I think we’re all dealing with etics, even us soft scientists!” Max was just about to get to that and then projected a diagram from a book on survey methods for studying food and eaters³. He continued, “All knowledge production processes that claim to be scientific, i.e. that aim to account for the phenomena studied via comparison, generalization and above all criticism, produce an etical discourse.

3. See Figure 0.1 in this Introduction.

This is equally true of the so-called ‘hard’ sciences and the humanities. An approach that focuses solely on emic phenomena, e.g. representations shared within a group, assuming that it’s really possible, can only claim to be scientific if it forges or adopts an etic narrative to account for them. So all of us in this room produce etics. It’s even to some extent our mission and warrants our salaries. Not producing etics at all would mean, for example, reporting on emic discourse gleaned in the field without a clear definition of the subject, without further analysis, without any generalization, without any translation to make the situation understandable and interpretable for readers, colleagues, or even the respondents. This in other words would be tantamount to not producing any objectification. If you stick too closely to emics, you’re not generalizing anything, you’re just being a mouthpiece. To sum up, different methods and disciplines have different positions in relation to etics and emics. Some seek to distance themselves from emics and produce a discourse that is as etic as possible. Here we are more concerned about the epistemology of the so-called hard sciences, objective measurement, the use of statistical tools and experimental protocols. Others focus on emics and seek to produce a comprehensive objectification and reconstruct the rationale that drives the respondents. We’re more on the side of the epistemology of the human sciences, i.e. of the plausible rather than the deniable.”

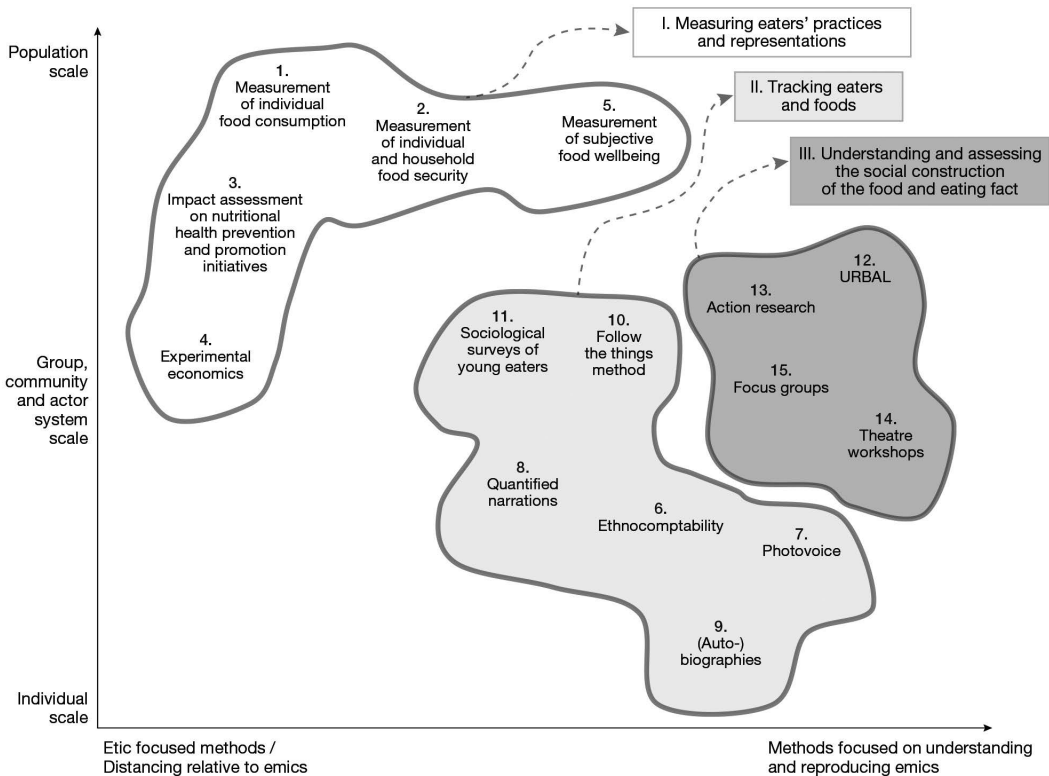


Figure 0.1. Cognitive map of the methods described in the book *Studying Food and Eaters: A Cocktail of Perspectives and Methods*.

After this tangent on etics and emics, which seemed to wake up the audience, Max continued, “Alongside this first strand, which provides a means of structuring the diverse methods of investigating food and eaters, a second strand can be identified, i.e. the monitoring scales, which are more intuitive and obvious, as you can see from this diagram. At the finest level, i.e. the individual. Next, there are groups of different kinds that are defined in different ways by different disciplines, including the family, household, consumption unit, clan, tribe, community, etc. Then there are populations, which can for instance be defined in terms of regional or national boundaries. You might of course argue that we often start with the individual when it comes to generalizing on the group or even population level. But the key point here, when striving to structure the methods, is the scale at which the researchers are ultimately interested and at which the knowledge they produce is focused. Qualitative methods based on interviews and ethnographic observations are often preferred at the most detailed levels. These methods aim to provide a detailed picture but they are time-consuming to carry out given the time/respondent ratio. Moreover, the budget allocated to them within research projects is often limited.” “Don’t even mention it!” said Marcel Man smiling.

Max added, “With these fine-scale qualitative methods, the samples are not designed to be representative of a reference population, but rather of the diversity of situations and possible types. The goal is to interview a range of very different people so as to identify all of the possible discourses and practices—even though some of them may be marginal in the target population or not statistically significant—with the aim of gaining insight into them and their underlying rationale. History illustrates the importance of fringe patterns, e.g. the consumption of ‘organic’ quality meat, which was completely negligible just 30 years ago, but is now much more prominent. We can identify factors that influence what eaters say and do, but we can’t carry out a statistical analysis to measure their relative importance. Statistics can also be used to analyse the discourses, e.g. the frequency with which words or expressions appear. On a larger scale, i.e. the population, the relative importance of what has been identified can be assessed on a finer scale. For example, in-depth interviews with individuals may reveal that the reasons for reducing meat consumption may be health-related, economic, environmental, ethical, taste-related, cultural, social or even animal welfare-related, factors that enable people to stand out or, conversely, to be integrated into a social group. Interviews also help to show how these different reasons for eating less meat combine, and possibly how their combination determines changes in practices. A personal event such as the birth of a child can simultaneously make people more aware of health and environmental issues, forcing them to look to the future of the next generation. A quantitative survey can measure the relative importance of each of these reasons in a population, provided the sample is large enough and sufficiently well constructed, while identifying how these reasons are associated with individual characteristics: age, gender, standard of living, education, residence location, etc.”

Charlotte Bond then added: “These monitoring scales often differentiate disciplines. For starters, psychologists focus on individuals, although some social and cultural psychologists do also carry out quantitative surveys. Otherwise epidemiologists focus on populations. What they observe, each on their own scale, is not always consistent. For instance, major differences in meat consumption may be noted between individuals due to taste preferences, but these are less visible on a population scale,

where economic and sociocultural factors are more important. Even so, we can still try to combine methods that implement different monitoring scales. This is where it is really interesting to combine methods and foster interdisciplinarity.”

Nathalie Vitamine proposed another factor for differentiating research approaches. Firstly, she identified approaches geared towards making progress on a given scientific front—studying something that nobody else has previously explored, e.g. a little-known field or a new method. The key is to innovate relative to what everyone else has already studied. The challenge is to make scientific progress. That is what makes it easier to publish, because that is often what journals are looking for. “Yes, but you see, plenty of papers explore new methods whose results are appallingly trivial in terms of their usefulness,” said Charlotte Bond putting things into perspective. Nathalie picked up where she left off, highlighting that it was also possible to find approaches that took social issues as their starting point and sought to address them. What really counts is being useful in solving societal issues. She added, “This distinction can be summed up by looking at both basic and targeted research.” “I agree, but there’s a risk that if we start from the questions raised by society then we could get trapped in a vision imposed by some of its actors. Often the problem is actually the question and the way it is framed,” declared Fabienne Chart. Then Charlotte repeated what Max had said earlier, i.e. that we often see scientific debates in which different methods clash when we are simply not asking the same questions, before continuing, “Often, the choice of method is made according to the question we ask ourselves, or which is asked socially. We then have to ask ourselves whether the method we choose will really enable us to answer the question we are asking. The issue is primarily the question, not the method. But we also have to admit that a methodological innovation leads us to ask new questions. We can measure new dimensions and thus reveal them and thereby question their role. This is the case, for instance, with regards to the enormous processing possibilities offered by new Big Data methods.”

Charlotte, who could see the clock was ticking, took advantage of the opportunity to thank Max and conclude this productive day with four comments.

The first was that to reach agreement in an interdisciplinary group we have to accept that the importance each discipline attaches to the studied food aspects has to be put into perspective. Each discipline tends to stress the importance of its preferred dimension—social, biological, cultural, hedonic, ecological, psychological or economic—while regarding the other dimensions as secondary. For example, nutritionists consider health to be a primary food dimension, and that pleasure, economic constraints, social norms and cultural practices can be studied in terms of how they shape nutritional health. Sociologists and anthropologists study social interactions and cultural dynamics, which they see as being highly relevant to the behaviours they observe, while economists focus on material and monetary constraints in their search for determining factors. Interdisciplinarity therefore presupposes recognition of this diversity of viewpoints and acceptance of the fact that not all disciplines share a unified vision of the behavioural endpoints, that they zoom in on some rather than others, and that they tend to rank them in order of importance.

The second comment was drawn from a thought experiment involving a 1:1 map superimposed on the entire concerned area, as imagined by Lewis Carroll, Jorge Luis Borges and Umberto Eco (Palsky, 1999). This kind of map is the most reliable representation

of the area, but the only problem is that it is unusable! So we have to accept that there may be some information loss to capture the reality, and the selection of information collected through the implemented method depends on its conceptual framework.

The third comment applied to all qualitative and quantitative survey methods. It concerned the need to take the effects of interactions between interviewers and respondents into account as well as the influence of the question order and wording on the responses. Charlotte recommended that everyone, irrespective of their discipline, should read a selection of works by authors she considered essential on methodological issues: Olivier de Sardan (2012) and his book *La rigueur du qualitatif*, which is geared towards readers conducting qualitative (and even quantitative) research on human beings; Norbert Schwarz and Seymour Sudman (1996), who have conducted numerous surveys demonstrating how the question shapes the response; and Van Campenhout, Marquet and Quivy (2017) and Becker (1998) on rigorous approaches to social science surveys. Charlotte also recommended a book by Alan Warde (2015)—which is more focused on food—on the value of research practices and mentioned a few essential methodological manuals: Macbeth and MacClancy (2004); Poulain (2002); Miller and Deutsch (2010); Albala (2012); Murcott, Belasco and Jackson (2013); Chrzan and Brett (2016); Klein and Watson (2016); and Leer and Krogager (2021).

Charlotte's fourth and final comment was a recommendation to check out a book that would be useful for anyone conducting research on food. This book, entitled *Studying Food and Eaters: A Cocktail of Perspectives and Methods*, is the one from which Max's earlier diagram was extracted. In her view, this book offers an opportunity to review and compare various methods: participatory methods involving respondents, comprehensive methods deployed on individual and group levels, and more explanatory methods carried out on a few individuals or very large population samples. "To present the different methods compiled in the book, the editors opted to arrange them graphically according to the two strands Max was talking about earlier: the etic-emic strand on the x-axis and the monitoring scale on the y-axis. There are other possibilities, of course, but this allows readers to pinpoint each of the methods graphically and also for the editors to organize the 15 chapters of this book into three main groups, each of which includes methods that share a similar family resemblance. The first group is entitled 'I. Measuring eaters' practices and representations'. These are mainly quantitative methods designed to be statistically representative, or to measure the weight of different eating behaviour factors. The second set is entitled 'II. Tracking eaters and foods'. These are methods for grasping the dynamics of food practices, representations and flows, mostly at the sub-population level. The third group is entitled 'III. Understanding and assessing the social construction of the food and eating fact'. These are mainly participatory methods involving respondents in the knowledge production process."

Charlotte continued her discussion of the diagram and then opened the discussion to address the many questions. Someone floated the idea of applying all 15 methods presented in the book to the study of meat consumption. Everyone agreed that it would certainly shed light on the subject from very complementary angles, but that the budget offered by the *Agence Française de l'Excellence Scientifique* would not be sufficient. Charlotte then seized the opportunity to say, "For that, we'll ask Europe for funding for our next project! Meanwhile, how about going for a bite to eat together?"

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Part 1

Measuring eaters' practices and representations

Chapter 1

Individual food consumption measurement: methods tailored to objectives

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The three methods outlined here for measuring food consumption may be implemented to assess food quality and identify food models for a given population. These quantitative methods are based on substantial data collection preparation and management work that should not be overlooked.

“It is easy to ask what people eat, but finding an answer
can be a daunting task” (Helsing, 1991)

Individual food consumption and nutrient intake measurement is a recent discipline that emerged in the early 20th century, particularly with the development of food composition tables to derive the nutrient content of foods. The first publications on this topic are attributed to Percy and Vaquelin in France in 1818 (Church, 2006). However, a more rudimentary form of measuring food consumption has also existed since ancient times when artists were already illustrating daily mealtime scenes on pottery—vases portraying banquets dating back to around 460 BC have, for instance, been found. What and how we eat has been pictorially represented continuously over the course of human history, notably on pottery, tapestries and paintings. In addition to these pictorial representations, writings on the culinary arts have existed since ancient times, including recipe books such as the *De re coquinaria*—a compilation of Roman recipes dating back to the 4th century AD. The advent of paper and printing as of the 15th century led to the distribution of the first cookery books that provided precise information on the types of dishes prepared and consumed at different times. For instance, an 18th century recipe book offers a description of the preparation of pasta in broth: “We make a meat broth without herbs, with salt, and once prepared we put the quantity of pasta we deem appropriate in a dish on a small fire; we gently douse it with broth as it heats up, the pasta soaks and swells, and we serve it at the table once we see that it has swelled to a certain extent and is tender, soft and well moistened” (Flandrin, 1983). Moreover, some registers (community archives, notarial pension acts, in-kind wage payment records) provide a quantitative description of the intake of certain foods. They reveal, for example, that “A Provençal person of the

14th and 15th centuries drank a lot of wine (210 l/year) and ate good quantities of bread (300 kg/year). The staple dish was a cabbage and bacon soup or a bean or lentil soup or meat broth in which the eater dipped large portions of bread. A bit of salted fish and pork, with a little fresh meat perhaps twice a week (up to 26 kg/year consumed in 1473)” (Benassar and Goy, 1975). Individual consumption measurement methods as we know them today only emerged around the 1940s (1942 for the 24 hours dietary recall and 1947 for the dietary history methods⁴) (Biro et al., 2002). These methods are generally classified into two types: *retrospective methods* to measure past consumption patterns, such as methods based on food frequency questionnaires or the 24 hours dietary recall method; and *prospective methods* to measure current consumption, such as dietary records.

► A range of methods tailored to diverse measurement objectives

As a nutritional status and health determinant, food consumption is a major concern of the United Nations Sustainable Development Goals—associated with priority areas including the development of sustainable agriculture, food production and supply, and meeting people’s nutritional and health needs. Yet food consumption is a complex behaviour to assess. The choice of assessment method depends on the study objective (Webster-Gandy et al., 2020). Note, however, that none of these methods enables accurate assessment of ‘real’ food intake patterns.

This chapter describes the three methods most commonly used in population surveys: two retrospective methods (food frequency questionnaire and 24 hours dietary recall methods) and a prospective method (dietary record method).

These three methods can be used to calculate different dietary indices that reflect the quality of the diet (e.g. diet quality index-international, healthy eating index, etc.), but also enable the characterization of dietary patterns (e.g. Mediterranean diet, Western diet, etc.). Moreover, the 24 hours dietary recall can be used to calculate the dietary diversity score, which assesses the nutrient adequacy.

Retrospective methods

Food frequency measurement

In this method, a questionnaire is used to assess the frequency of consumption of foods or food groups by individuals over a given time period (usually a week or month, but sometimes over a longer period of up to a year). This involves the administration of a frequency questionnaire, including a list of foods (or food groups), and corresponding frequency response categories, e.g. ‘never, once a week, twice a month’. The response conditions should ensure that all time categories are included for the target period, i.e. that there are no gaps. The number and types of foods included in the

4. The dietary history method—not covered in this chapter—aims to reconstruct, with the respondent in interviews conducted over a given period, the history of his/her eating habits (distribution of meals and non-meal food intake, frequently consumed foods, tastes and preferences, etc.), his/her problems or observations related to food (eating disorders, intolerances, allergies, metabolic diseases, digestive signs, etc.), food-related care practices (medical care, dietary and nutritional consultations, etc.).

questionnaire depend on the objectives of the study for which the questionnaire was designed, in relation to the study population (e.g. pregnant women, elderly, young children, general population). The questionnaire may therefore contain just a few items, e.g. when focusing on specific nutrients (e.g. dietary fibre or iron), or more, e.g. up to 200 items when the aim is to assess the overall diet (i.e. energy and nutrient intake). The foods (or food groups) included in the questionnaire should generally be informative, i.e. each food item should be consumed quite frequently by a substantial number of people; contain a sufficient quantity of the nutrient/food whose intake is being studied; and be consumed in varying amounts (frequency) among individuals for the questionnaire to be discriminatory.

The food frequency questionnaire was originally designed to provide descriptive qualitative information on eating patterns. The questionnaire has been supplemented by food portion sizes, thereby making it semi-quantitative (when consumed amounts are estimated based on standard or reference portions) or quantitative (when consumed amounts are estimated based on common household kitchen measures such as spoons, bowls, glasses, or photos of food portion sizes). Quantification thus enables food intake calculation (multiplying the frequency by the quantity).

The principle underlying the food frequency questionnaire is to roughly, rather than precisely, measure food intake over an extended period of time. The food frequency questionnaire approach hence aims to measure people's dietary habits rather than their actual precise intake. It is generally designed to classify individuals into broad categories (e.g. terciles), rather than to calculate exact average intake, while mainly being used to assess associations between eating patterns and disease risk in cohort or case control studies.

The frequency questionnaire is a relatively inexpensive standardized way of collecting data for a large number of individuals. It can easily be self-administered (if the respondents can read and write) or even via a computer-assisted design. The data can be readily processed and computerized. Most questionnaires can be filled in relatively quickly, i.e. within 15-30 min depending on the length of the food list, which places little burden on respondents, hence ensuring better compliance.

One of the main shortcomings of the food frequency questionnaire is that, for its development and validation, existing dietary data must be available for the target population, a validation study must be carried out (comparison with results obtained by a standard method such as blood biomarkers or a weighed food diary survey), which are very time-consuming and heavy (Cade et al., 2002). Another disadvantage of this method is its limited ability to obtain information on how foods are prepared and consumed (e.g. cooking methods), or on meal food combinations. Moreover, the average food intake depends on the number of food items, i.e. the longer the list of foods, the more likely it is that the intake will be overestimated (conversely, the shorter the list, the more likely it is that the intake will be underestimated).

24 hours dietary recall

24 hours dietary recall is the most commonly used method for obtaining quantitative data in population-based surveys. This method usually involves a face-to-face interview (or sometimes a phone interview) conducted by a trained enumerator, in which

the respondent is asked to provide detailed information about everything he/she drank and ate in the day prior to the survey. During the interview, the enumerator seeks to collect complete and accurate information by asking open-ended and probing questions, while maintaining a neutral attitude regarding the responses and avoiding suggestive questions and critical comments.

The four-step multiple pass interview technique is often used and preferred. First, a complete list of foods and drinks consumed by the respondent in the day prior to the survey is drawn up. A detailed and accurate description of each food and drink consumed (including food preparation and cooking methods, commercial product brands) is collected. Then food and beverage intake amounts are usually assessed based on household measurements or photos of food. Information on the ingredients of mixed dishes (recipes) consumed by the respondent should also be collected at this stage. Finally, the 24 hours dietary recall questionnaire is reviewed to ensure that all foods have been properly recorded.

The 24 hours dietary recall interview should ideally be blinded (i.e. the person should not know in advance which day the recall interview will be conducted) and conducted in the respondent's home so as to foster participation, enhance the information quality and facilitate calibration of the household measurements used for the quantifications.

The respondents are usually the 24 hours dietary recall survey subjects. In some cases, when the subject is unable to directly respond—e.g. children under 8 years old whose answers are not sufficiently reliable (Arsenault et al., 2020) or people with memory issues—a parent or care giver may provide the responses.

The 24 hours dietary recall method provides a fairly accurate assessment of respondents' food intake patterns and may be used to estimate absolute rather than relative intake. Therefore, if the study objective is to describe an individual's usual intake or estimate the individual intake distribution in the study population, a single recall interview is insufficient (mainly because of daily variability). Then it is preferable to conduct several recall interviews per individual on several non-consecutive days so as to calculate usual intake patterns. In case of repetition, the 24 hours dietary recall interviews should be conducted on both weekdays and weekend days, based on the assumption that there are differences in food intake between different days of the week. Ideally, each day of the week should be equally represented in the study population, but in practice this is usually quite hard to achieve in a target population.

Interview respondents do not need to be literate in this method—this is one of its strong points. Moreover, the interviews usually take about 30 min, so the respondent burden is relatively low and the response rate generally high. As the 24 hours dietary recall method is based on open-ended questions, this allows for unlimited specificity regarding food descriptions (food types, preparation methods, cooking methods, food sources, etc.). The method also enables the collection of information on the structuring of different food consumption patterns and associated food combinations. The main shortcomings of the 24 hours dietary recall method concern its reliance on the respondent's memory with regard to identifying consumed foods and beverages, as well as estimating the quantities consumed. Intake patterns measured via this method generally tend to be underestimated and there are often variations between participants, with women and overweight people being more likely to underestimate their consumption (Thompson and Byers, 1994; Webster-Gandy et al., 2020).

Prospective method: dietary records

In the dietary records approach, participants are asked to record details on his/her overall food and beverage consumption in real time over a specific period in a notebook. In the past, this was a 7-day period to highlight weekly variations and draw up a so-called food diary. This type of method requires substantial participant investment, yet in practice the time period can be shortened and the dietary records are then generally conducted over a 3-day period. The days are usually consecutive and ideally include a weekend day. Participants can quantify his/her consumption using a kitchen scale—when it is called a weighed food diary survey—or other tools such as household measurements or photographs of food portion sizes. For this type of method, participants must be trained to describe the food precisely (name, type of preparation, type of cooking, etc.), as well as the quantities consumed. At the end of the recording period, a trained enumerator reviews the recordings with the participants in order to obtain a clear picture of the situation and shed light on any overlooked foods.

Dietary records provide a detailed description of the consumed foods, as well as an accurate intake measurement (especially if the intake is quantified by weighing). Dietary diversity may be assessed if the records concern a 1-week period.

A major limitation of the dietary records approach is that the participants must be literate, so it is hard to apply in Global South countries. Moreover, the method requires a high level of participant commitment, especially if it covers a long period, which can lead to participant selection bias with a tendency to select the most motivated participants, and to modifications in participants' behaviour, generally involving under-reporting (in terms of food quantities, mainly if the food is weighed, or of food types, particularly regarding food consumed outside of mealtimes) (Thompson and Byers, 1994; Webster-Gandy et al., 2020).

Advantages and limitations of the different methods

The following table (Table 1.1) summarizes the main advantages and limitations of the food frequency questionnaire, 24 hours dietary recall and dietary records approaches.

Errors associated with food consumption assessment methods

“There is not, and probably never will be, a method that can estimate dietary intake without error.” (Beaton, 1994)

Errors may be random or systematic.

Random errors (daily intake variability, quantity estimates) increase the food intake variance, thereby reducing the accuracy. Random error impacts can be reduced by increasing the number of observations. Variability related to possible specific observation day features can be reduced by increasing the number of observation days or the sample size (Rutishauser, 2005).

Systematic errors may for instance be due to the use of incorrect data on the nutritional composition of a food item, which will generate systematic bias in the estimation of the nutrients ingested by individuals (Rutishauser, 2005). Their effects therefore cannot be reduced by increasing the number of observations.

Table 1.1. Advantages and shortcomings of the three presented methods

	Advantages	Limitations
Food frequency questionnaire (retrospective method)	No change in the survey respondents' behaviour	No/few food details (preparation, cooking, brands)
	Relatively low burden on survey respondents	Respondent cooperation and accuracy decrease with the questionnaire length
	Quick to fill in	Questionnaire formulation and validation is a heavy burden
	Self-administration possible	Long questionnaires overestimate intake and short ones underestimate it
	Possibility of machine readability of responses → reduction in data entry costs	Not very accurate in assessing caloric and/or nutrient intake (hence classification of individuals into consumption terciles, for instance)
24 hours dietary recall (retrospective method)	No change in the survey respondents' behaviour	The previous day may not be a typical one
	Relatively low burden on survey respondents	This method does not account for variability between different days of the week, unless repeated
	Usually carried out with an interviewer, so subject literacy is not an issue	Well-trained interviewers (ideally dietitians) with a neutral interview approach required
	Quick to fill in (± 30 min)	Intake underestimation (with marked variations between individuals)
	Conducted in person or by phone	
Dietary records (prospective method)	Clearly illustrates dietary diversity (especially when conducted over a long period)	Subjects must be literate, otherwise interviewers are needed, which substantially increases the cost
	Accurate in the description of foods, portion sizes (or weights when the foods are weighed)	Heavy time-consuming method
	Few logistical resources required	Possible change in behaviour (food and quantity)
		Data validity declines with the length of the period
		Underestimation of intake

► Legal and ethical implications

As with all research involving human beings, surveys to measure food consumption are subject to the 1964 Helsinki Declaration which sets out ethical principles to protect the health and welfare of research participants and their privacy, and to safeguard their integrity.

All surveys aiming to measure food consumption must be authorized by a local ethics committee to ensure compliance with the ethical principles. Since 2018, in addition to ethics committee authorization, specific steps must be taken in relation to the General Data Protection Regulation (GDPR).

In certain settings and depending on the sociocultural situation, it may also be necessary to contact or request authorization from local and/or religious authorities before any community survey.

Before a survey, each participant, or each legal guardian of the participant if he/she is a minor, must be explained the survey objectives and implications, what will be done with the collected survey data and findings, and what rights he/she has as a participant, including the right to refuse to participate, prior to obtaining his/her informed consent.

Food has always been governed and influenced by cultural, social and religious codes. It is subject to a set of standards that may, for instance, concern dietary exclusions or food preparation or consumption patterns. When measuring food consumption, these specificities must therefore be taken into account in order to not offend participants' feelings (Rucker and Rucker, 2016).

Food consumption measurement can be relatively intrusive depending on the method and the survey context. Beyond the questions participants are asked about their diet—which may be sensitive depending on the context and participants' socioeconomic profile—surveys conducted in Global South countries are essentially handled by enumerators and ideally in the participants' homes as literacy rates are sometimes low. It is therefore crucial to train enumerators to adopt a neutral, respectful and culturally suitable attitude.

► Food consumption measurements and cross-disciplinary collaboration

In the current context of changing food patterns worldwide (e.g. increased consumption of ultra-processed foods and meat products), measuring the food consumption of individuals helps us gain insight into and assess the impact of these shifting trends, particularly regarding the nutritional status and health of populations. The measurement of individual food consumption patterns can, for example, reveal whether the target individuals are meeting their nutritional needs or whether certain food models are risk factors with respect to the development of specific diet-related chronic diseases such as hypertension or type 2 diabetes. Moreover, knowledge on food consumption is essential to design and assess relevant tailored policies and intervention tools, such as micronutrient fortification of certain foods to prevent or combat deficiencies (Eussen et al., 2015), or fiscal interventions to tax certain unhealthy foods as a means to reduce their consumption (Alagiyawanna et al., 2015). At the regional or country scale, food consumption measurement can also underpin agricultural planning initiatives to ensure that the supply matches community needs.

Generally, a number of data are collected simultaneously when food consumption is measured. For example, it is not uncommon to collect data on the origin of the food consumed, the place of consumption (home, workplace, restaurant, etc.), or the dining companions. This ancillary data may be of interest for consideration in

other fields such as sociology and economics. Conversely, as food consumption is socioculturally linked process, the social sciences can help take certain factors into account upstream so as to tailor food consumption measurements to the context (e.g. not asking about taboo foods).

► An application of the 24 hour dietary recall method

Only one of the three above described methods is illustrated in this chapter, i.e. 24 hours dietary recall—a common inexpensive data collection method. Measuring food consumption using the 24 hours dietary recall approach is a three-phase process, involving: a preparatory phase, a collection phase and a data management phase. Note that these three phases also apply to other food consumption measurement methods, although there are differences in content.

Preparatory phase

Implementation the various food consumption measurement methods involves surveys that require the development of several data collection tools that often depend on the target objective. These include questionnaires, lists of foods and recipes consumed by the target population, photo catalogues showing different food portion sizes, household measures (bowls, cups, plates, spoons, etc.) used to quantify food intake. It is essential to use a food composition table or database if the aim is to determine nutrient intake or the coverage of nutrient requirements. Sometimes a specific food composition database is designed and developed in the preparatory phase, although it will ultimately serve as a data management tool, not a data collection tool.

The 24 hours dietary recall questionnaire is adapted and developed according to the type of study and the target group. The survey operator may decide to use an interview guide with open-ended questions (which may be a blank sheet of paper upon which the necessary information is collected) or, conversely, a well-structured questionnaire with closed-ended questions.

A food directory (including recipes) provides information on the name of the food or dish, usually in several languages, including local languages, its identification with a code and the measurement methods used to quantify it (price, volume, weight, photo). This dynamic tool helps in the identification and characterization of foods/recipes during the survey and it may be supplemented during the data collection phase.

A photo catalogue is often developed to facilitate the estimation of intake quantities (Figure 1.1). It presents standardized photographs of food portions or recipes that are regularly consumed by the study target population. There are published guidelines on how to develop and validate this tool (Nelson et al., 1998; Foster et al., 2005; Martin et al., 2014).

It is sometimes of interest to rely on household measures (generally those most commonly used by and for the target population) to estimate the quantities consumed. These graduated and calibrated utensils enable respondents to indicate levels corresponding to the quantity of food or dish they have consumed.



Figure 1.1. Example of photos of common food portion sizes in Benin published in a catalogue of 35 foods and recipes.

Source: French Institut de recherche pour le développement (IRD) and the Beninese Faculté des Sciences agronomiques of the Université d'Abomey-Calavi (FSA/UAC), 2015.

Data collection phase

The data collection phase involves the gathering of both dietary data, or so-called primary data (24 hours dietary recall in this case), and secondary data, such as a recipe index, or quantification tools such as household measures or food/dish prices. Secondary data collection will depend on the survey objectives and whether such data are available for the target population.

Primary data

The data collection strategy used in the 24 hours dietary recall approach is described in the 24 hours dietary recall section.

As explained, the 24 hours dietary recall method is ideally conducted in the participants' homes. One of the advantages of this approach is that, if respondents cannot quantify what they have consumed with the proposed tools, they may use their own utensils to do so, after which a match is made with the investigator's tools.

A 24 hours dietary recall survey may be based on standard recipes, with the average composition for each recipe represented and assigned to all participants who have eaten the dishes. Otherwise, individual recipes for the dishes that each participant has eaten may be collected. The 'average recipe' method saves time in the data collection phase, but omits individual recipe preparation features. Note that a list of average recipes will never be exhaustive, so even when the survey is based on average recipes, individual recipes could still be collected during the process.

Secondary data

List and composition of average standard recipes

The recipes of dishes most commonly consumed (in the preparatory phase) by the target population are listed and then monitored. The different unit operations used when making the recipe are followed from start to finish during the monitoring. All ingredients used in the recipe (including water) are weighed before and after preparation (peeling, pitting, etc.). The total weight of the preparation is then measured before and after cooking. During these steps, it is important to watch out for potential sources of error that could affect the quality of the collected data. For instance, weighing scales must be tared before taking measurements, while also removing lids or utensils left in the pans during cooking. The monitoring should be repeated for the same recipe cooked successively by different people (ideally 10). At the end of the monitoring sessions, the recipes are 'averaged' to obtain a single so-called 'average' recipe, which will be assigned to all individuals who have eaten the dish. An important intermediate task concerns the choice of ingredients for the average recipe, which must be justified and documented. The number or type of ingredients may sometimes vary from person to person. For instance, for the same recipe, some people might use shrimp powder while others could use fishmeal or ginger and others not.

Calibration of household measures

Kitchen utensils commonly used to measure different foods and recipes are identified in the surveys (Figure 1.2). For each household measure/food combination, it is essential to know the weight correspondence of the assessed food/preparation. This is done by calibrating the household measures. For example, when measuring cornmeal in a bowl that can hold the equivalent of 350 ml of water, the calibration will be done by filling the bowl with cornmeal after taring, weighing the bowl and the cornmeal, and then repeating the operation 10 times in order to calculate an average weight.



Figure 1.2. Example of household measures used in the Impact of malaria in early pregnancy on foetal growth in Benin (RECIPAL) project.

Source: French *Institut de recherche pour le développement* (IRD) and the Beninese *Faculté des Sciences agronomiques* of the Université d'Abomey-Calavi (FSA/UAC), 2015.

Food prices

A weight correspondence must be determined for each food item quantified in terms of price through a so-called market survey. Based on the list of target foods and recipes,

samples must be obtained from markets, shops or street vendors in order to determine the quantity corresponding to the price paid by the survey participants. Seasonal and spatial prices must also be taken into account.

Data management phase

The first step involves the verification and correction of all types of input data, which is crucial for the quality of the results. Each primary or secondary data item must be checked for credibility. For instance, when dish recipes are monitored, it is important to check that the final weight of the dish after cooking is less than the total weight of the recipe ingredients before cooking. If this is not the case, the error could be due to misreading of the recipe weight, a spoon forgotten in the pan before the final weighing, an incorrectly recorded ingredient weight, etc. Since each recipe is monitored several times, the values and proportions noted in the different observations may be compared in order to decide on whether to correct, adjust or eliminate non-credible data. Primary data credibility may be checked with regard to the quantities of food or dishes consumed, e.g. it would be unlikely that an individual would consume 4 kg of cowpeas on a survey day.

All data used for the quantification tools and food composition tables must be finalized prior to calculating the nutrient intake. The energy intake credibility should also be checked when the nutrient intake for each individual is calculated on a per-day basis. Food consumption surveys may be hampered by over- and under-reporting issues, which can be identified through daily calorie intake. Under-reporting is the main problem encountered in 24 hours dietary recall surveys. For each under-reporting case, it is essential to look back at the primary data to verify what was reported by the respondent. Different ways of dealing with under-reporting cases are outlined in the literature (Ferrari et al. 2002; Gibson et al. 2017).

► Tailoring the method to the application context

Food consumption assessment methods must be tailored to the context in which they are implemented, i.e. target population, environment (urban or rural), sociocultural standards, available material, human and financial resources, and the time available to conduct the survey. For instance, depending on whether the target population is literate or not, the data collection support, i.e. questionnaire, will have to be adapted so that it can be self-administered or administered by an interviewer.

Quantification tools—prices, household measures or photo catalogue—are only relevant for the population and context for which they have been developed and validated, which includes the food frequency questionnaire.

It is recommended to avoid influencing the eating behaviour of survey participants when assessing food consumption. However, if people are eating from a common plate, the method can be adapted and participants may be asked to prepare individual plates to enhance assessment of the quantities consumed. This can be done over a short period of one to three days. This adaptation is not feasible for a food frequency study. The food frequency questionnaire is the most suitable survey method when a food consumption survey is to be carried out to determine the eating habits of a target population, but a questionnaire specifically designed for

the target population must be available. If this is not the case, another method such as 24 hours dietary recall or dietary recording may be used by lengthening the data collection period.

The choice of method most suitable for collecting food consumption data will depend on the study objectives, but also on the population targeted by the study, the available tools and human and financial resources. Collecting food consumption data may seem relatively straightforward (at least for the three methods covered in this chapter), yet it should be kept in mind that the preparation of the data collection and management of the collected data are generally complex and time-consuming tasks that are often underestimated.

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Chapter 2

Measuring individual and household food security: potential and challenges in nutritional and social science collaboration

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Two main types of indicators are implemented to measure the extent of individual and household food security—those that focus on food eaters’ experience and their personal assessment of their situation, and those that rely on a food consumption measurement such as the dietary diversity score. The latter takes stock of the nutritional quality of people’s diets and the relevance of its findings may be enhanced if supplemented by more comprehensive approaches to food practices and food eaters’ viewpoints.

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” This definition emerged from the 1996 World Food Summit and is now widely acknowledged by development actors (NGOs, government departments, international institutions) and researchers (nutritionists, epidemiologists, economists, sociologists, anthropologists, etc.). However, it poses considerable problems of observability and measurement. The concept spans multiple dimensions (health, economic, social and cultural), and may be applied at different scales (individual, household, country). The challenge for food security indicators—as for any composite indicator of a complex real situation—is to be able to measure a not directly observable variable using approximations (or so-called ‘proxies’) that meet minimum criteria in terms of reliability, relevance and usefulness for action and research.

This chapter provides a selective overview of the main indicators of individual and household food security from a non-nutritionist perspective⁵. The first section reviews the history of the development of two major families of indicators—one focused on food insecurity experience and the other on food consumption. The second section

5. The authors of this chapter conduct social science research focused on development issues, while having extensive experience in collaborating with nutritionists.

outlines their application scope. The third section considers the practical and relational aspects of producing these indicators in the field. The fourth section discusses the contribution of indicators to the between-discipline dialogue. Finally, the fifth section presents feedback on the implementation of an indicator of dietary nutritional quality as part of a research project on the links between agriculture and food in Burkina Faso, i.e. the Women's Dietary Diversity Score (WDDS-10), based on the counting of 10 groups of consumed food.

►► Origin of food security indicators

The main food security indicators were originally developed by multilateral agencies (FAO, WFP⁶) and international aid organizations (USAID and the NGO Care), with the methodological support of university academics⁷. The history of these indicators reflects changes in the food security concept. (Mal)nutrition has long been the domain of epidemiologists and nutritionists focusing on individuals' nutritional status resulting from food-health interactions. The food security concept is more global in scope—its different pillars (availability, access, use and stability) place individuals' nutritional status in a broader socioeconomic context (the household scale is highly relevant here), while encompassing knowledge areas other than nutrition and epidemiology (FAO and WHO, 1992).

The food security concept has also advanced alongside the malnutrition concept. Nutritionists long focused on calorie and protein deficiencies, which were directly linked to staple food shortages (estimated in terms of cereal supplies and budget-consumption surveys). Since the late 2000s, attention has been increasingly focused on micronutrient deficiencies, which are more related to food and diet quality. The emergence of dietary diversity indicators is evidence of this shifting interest, with the expression 'food and nutrition security' (FNS) now preferred over 'food security'. The more recent trend towards malnutrition due to excess nutrient intake (fat, sugar, salt) has been taking hold in populations that are otherwise food-insecure, thereby adding to the complexity of the FNS concept.

There are two main families of indicators depending on the FNS vantage point (Box 2.1 and Table 2.1).

The first family (HFIAS, HHS, FIES, CSI⁸) is focused on food insecurity experiences and household strategies to prevent or cope with this issue. It is mainly used by social aid⁹ and humanitarian emergency relief (WFP) actors.

6. FAO (Food and Agriculture Organization of the United Nations) and the WFP (World Food Programme) are two United Nations agencies.

7. The Food and Nutrition Assistance Project (FANTA), <https://www.fantaproject.org/> [queried 27/08/2021]) is a good example of collaboration between international agencies (USAID, FAO) and universities (Cornell, Tufts) for the development and validation of indicators. Tufts University has posted a very comprehensive survey of food security indicators: <https://index.nutrition.tufts.edu/data4diets/indicators> (queried 27/08/2021).

8. Note that the following indicator acronyms are used in this chapter. HFIAS (Household Food Insecurity Access Scale), HHS (Household Hunger Scale, from HFIAS), FIES (Food Insecurity Experience Scale) and CSI (Coping Strategies Index).

9. HFIAS was originally developed to assess food aid programmes for poor households in the United States. The indicator was later adapted and extended for application to situations in Global South countries. It is currently being replaced by FIES.

The second family (HDDS, WDDS, MDD-W, WDDS, FCS¹⁰) concerns food consumption based on dietary diversity scores and is mainly associated with nutrition or food security actors (FANTA project).

These indicators can—depending on the case—be applied at the individual or household (generally defined as a unit of residence and consumption) level. At this latter more aggregated level, decisions concerning food and care practices are made, which will ultimately contribute to the nutritional status of each household member. We will further discuss this important distinction in the following sections.

Box 2.1. Differences in approach by indicator family

■ Family 1: Experience and feelings of food insecurity (HFIAS case)

Area	Sample questions
Anxiety	Did you worry that your household would not have enough food?
Quality	Were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?
Quantity	Did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?
Hunger	Did you or any household member go a whole day and night without eating anything because there was not enough food?

Source: Coates et al. 2007, p. 5

■ Family 2: Food consumption—qualitative 24 h recall assessment for dietary diversity scores (WDDS/MDD-W case)

“Please describe the foods (meals and snacks) that you ate or drank yesterday during the day and night, whether at home or outside the home. Start with the first food or drink of the morning [...]”

Source: Kennedy et al., 2011, p. 7

These indicators have been developed from a set of common criteria related to methodological and operational considerations:

- relevance: the indicator should assess different dimensions of reality relevant to individual and household FNS. For epidemiologists who focus on diagnosis and prevalence, as well as for quantitative economists, the relevance may be validated by estimating levels of correlation with other proven measures of malnutrition and food insecurity (Hoddinott and Yohannes, 2002; Leroy et al., 2015). The validation process may be more qualitative for economists and socioeconomists who focus more on livelihoods and strategies, but the approach is the same;
- sensitivity to variation, to ensure that it can be used for diagnosis, comparison and, more generally, statistical analysis;
- comparability in time, space or between sub-populations, which requires substantial work to standardize questions, answers and analyses;

10. HDDS (Household Dietary Diversity Score), WDDS (Women’s Dietary Diversity Score), MDD-W (Minimum Dietary Diversity Score for Women), and FCS (Food Consumption Score).

- (relative) simplicity of implementation. FNS indicators generally opt for information that is less precise, but easier and quicker to collect than other methods. For nutritionists and epidemiologists, the ideal is to carry out quantitative food consumption assessments, supplemented by anthropometric evaluations or blood tests, but these studies are very expensive and intrusive for people. For economists, the simplification is done with reference to budget-consumption surveys carried out by national statistical institutes, which are also very cumbersome and hampered by the extent of measurement errors;
- simplicity of handling. Indicators are presented as scores that pool different information; they can be used for descriptive statistics (e.g. for charts) or be included in more sophisticated statistical or econometric models;
- this simplification of indicator collection and processing methods is not just methodological, it is designed to facilitate data production delegation and multiplication. Detailed guidelines manuals (FAO, s.d.; Coates et al., 2007; Maxwell and Caldwell, 2008; World Food Programme, 2008; Ballard et al., 2011; Kennedy et al., 2012; FAO, 2021) have been produced to facilitate adoption of the methods by field actors or researchers from different disciplines.

►► Use of indicators

Scores to qualify individual and household FNS

The indicators are represented as scores that pool feelings, experience and strategies in the case of HFIAS, HHS, FIES and CSI, food groups in the case of diversity scores (HDDS, WDDS, IDDS and FCS), with a common coding system in terms of occurrences (sometimes combined with frequencies) over a given recall period.

CSI incorporates a weighting system that is adjusted on a case-by-case basis according to prior knowledge of the setting (potentially in collaboration with stakeholders). This system has the advantage of better reflecting the challenges of local situations, but it is limiting when the objective is to compare different contexts.

Methods for developing dietary diversity scores are differently adjusted to the evolutions of the FNS concept. WDDS/MDD-W, i.e. the only validated indicator for assessing individual dietary nutritional quality, includes 10 food groups of nutritional interest, without weighting. HDDS, developed from 12 unweighted groups, has been validated as an indicator of improved household economic access to food. However, three of these groups (sweets, oils/fats and beverages) are now associated with excess malnutrition, and their inclusion may thus be deemed inconsistent. FCS uses weights ranging from 0 to 4 to account for the nutritional quality level assigned to each group, but this indicator has yet to be statistically validated.

Interpretation and comparison

The indicator values are hard to separately interpret as they are aggregated. Thresholds are proposed for HFIAS and CSI (food insecurity severity levels), MDD-W (women—with an average score of 5 or more groups—are more likely to meet their micro-nutrient needs), and FCS (dietary quality levels). In all cases, the guidelines manuals stress the need for caution in handling and interpreting these thresholds and the

Table 2.1. Comparison of indicator features.

	Family 1: Experience and feelings			Family 2: Food consumption (dietary diversity)		
	HFIAS (HHS)	FIES	CSI	HDSS	WDDS/MDD-W	FCS
FNS proxy via...	Feelings and experience	Feelings and experience	Adaptation strategies	Economic access to food	Dietary nutritional quality	Food access ^a
Areas	Access Anxiety, quality, quantity Hunger experience	Access Anxiety, quality, quantity Hunger experience	Strategies for managing food scarcity/hunger season	Access, dietary diversity	Dietary diversity	Dietary diversity and frequency
Analysis unit	Household	Household	Household	Household	Individual	Household
Person interviewed	Person in charge of meals	Person in charge of meals	Person in charge of meals	Person in charge of meals	Woman of childbearing age	Not specified
Recall period	4 weeks	12 months	4 weeks or/1 week	24 hours	24 hours	7 days
Indicator construction	Frequency weighted score Classification (severity)	Unweighted score Classification (severity)	Frequency and type weighted score Classification (severity)	Unweighted score of 12 food groups	Unweighted score of 10 food groups ^b (WDDS-10) Classification: dichotomous indicator equal to 1 if the score is ≥ 5 (MDD-W)	Frequency-weighted score and nutritional value (9 food groups) Classification (quality)

^a The WFP guidelines manual (World Food Programme, 2008) considers that FCS also measures the dietary quality, but subsequent research has questioned the validity of this aspect (Leroy et al., 2015).

^b 1: starch-based foods; 2: peas and beans; 3: nuts and seeds; 4: dairy products; 5: meat foods; 6: eggs; 7: vitamin A-rich leafy vegetables; 8: vitamin A-rich fruits and vegetables; 9: other fruits; 10: other vegetables.

resulting classifications. Moreover, for any indicator, it is always possible to get back to the source data in order to hone the analyses, i.e. feelings and practices for HFIAS, strategies for CSI, and food groups that contribute to the diversity scores.

It is easier to interpret changes in a given indicator over time in terms of improvement or deterioration, subject to the assumption that the recall period is representative of a 'typical' situation. Special attention should be paid to seasonal variations, which are very marked in rural and agricultural areas. For instance, an increase in the dietary diversity score, due to the seasonal availability of fruit and vegetables, may occur simultaneously with a deterioration in the FNS indicators of feelings due to a reduction in cereal stocks (Hoddinott and Yohannes, 2002; Savy et al., 2006; Lourme-Ruiz et al., 2021). Measurements thus must be repeated in the same season in order to monitor structural changes.

Specific difficulties arise when comparing populations, particularly for indicators related to food insecurity experience and strategies. Even if the questions are standardized, answers will depend on the sociocultural context, which may invalidate the comparison. For example, populations regularly exposed to food insecurity may show a form of resignation and therefore express less anxiety than other less exposed populations. This observation prompted the development of the HHS indicator, which focuses on a subset of questions related to hunger experience and is considered to be more universal while having a greater comparability potential than HFIAS and FIES. Yet this gain in comparability comes at the cost of a loss in specificity regarding the degrees and differences in the expression of food insecurity.

Because food group classification remains quite relevant between contexts, dietary diversity indicators are more suitable for between-region comparisons. However, two identical scores can mask major nutritional quality disparities.

Special attention should be paid to differences between MDD-W/WDDS and HDDS, which cannot be equated with a change of analysis scale from individual to household. The two indicators measure different food security dimensions: dietary nutritional quality for the former, economic access to food for the latter. Moreover, unlike the individual indicators, HDDS does not measure out-of-home food consumption (school canteen, market, etc.), which can generate consumption disparities between household members. Finally, although focused on the individual level for data collection, MDD-W is only a valid indicator of nutritional quality at the population level.

Operational and research questions

As FNS indicators have been developed by food aid and development agencies, they primarily meet operational needs: estimating food insecurity prevalence levels and degrees of severity; triggering, targeting and parameterizing food or nutrition assistance interventions, sometimes in emergency situations; and carrying out monitoring/assessment and impact studies. These indicators are also used in broader or longer-term development projects (e.g. agriculture and educational projects), adopting a 'nutrition-sensitive' approach (Ruel and Alderman, 2013). Dietary diversity scores are promoted by donors such as the European Union, who encourage project operators to use them in assessing their outcomes.

These indicators can also help answer research questions and the guidelines manuals are useful for researchers of all disciplines. Indeed, they outline protocols and provide

practical fieldwork advice, while including epistemological and methodological considerations regarding the indicators (analysis units, statistical validation, measurement quality), and meta-analysis for comparative studies. Research using these indicators can be part of nutritional studies or broader studies on household socio-economic functioning, on links between agriculture and food, etc. (see the 'Case study: farm household dietary diversity in Burkina Faso' section later in this chapter).

» Collecting data: ethical and practical issues

Conducting questionnaire surveys for the purpose of developing indicators raises ethical and practical issues. From an ethical (and sometimes regulatory) standpoint and due to the personal nature of the survey data, protection mechanisms are crucial, e.g. ethics committee approval, informed consent of participants and database anonymization. The questionnaire implementation time, which represents an opportunity cost for respondents, is another parameter to be considered. From a practical viewpoint, the collected data quality depends on the biases inherent to declarative data collection, i.e. cognitive, respondent fatigue and social desirability bias. These general considerations are of special importance because of the sensitive nature of food insecurity. Interviewers must balance the methodological rigour required to obtain standardized data with the empathy needed to create a climate of trust with respondents, sometimes in tense and even distressing situations.

HFIAS and CSI questionnaires are quick to implement and not very vulnerable to cognitive bias: they do not cause comprehension or memory problems over the survey recall period, although frequency questions may be harder to answer than occurrence questions. Yet some questions are sensitive, such as those concerning hunger experience or avoidance strategies. The risk of social desirability bias is high, often in two ways: food insecurity over-reporting if respondents are looking forward to benefiting from a future programme; under-reporting if certain practices are socially stigmatized.

Regarding diversity scores, there is also a risk of social desirability bias, as normative representations, which could vary according to the context, may be associated with certain foods. For HDDS and WDDS/MDD-W, implementation of the 24h recall approach (Chapter 1) will not substantially tax the respondents' memory, but the process involves recording details of the ingredients of food dishes consumed, thereby increasing the risk of fatigue, memory and cognitive bias when the dishes have been prepared by a third party. The FCS recall period is longer (7 days), but the added memory effort is offset by the fact that food groups are taken into account, which is more global than focusing on dishes and ingredients.

Finally, it is essential to pay special attention to the questionnaire respondents who may—depending on the context and their status—be unaccustomed to speaking out, or, on the contrary, become 'professional respondents' in extensive intervention conditions. Moreover, the risk of cognitive and social desirability bias is even greater for household indicator sampling as the respondent, i.e. generally the woman in charge of meals, may be asked to speak on behalf of her entire household, i.e. a group of varied size (the boundaries of which must be specified), with diverse degrees of variation between members.

►► Methodological contributions to related disciplines

In this section, we focus on potential synergies between nutrition and social sciences to gain insight into the mechanisms that characterize or determine food insecurity situations at the household and individual levels.

From both development and research standpoints, FNS indicators can be applied in a broader range of fields: poverty, vulnerability, livelihoods, intra-household inequality, gender perspectives, etc. The fact that FNS indicators are standardized should normally facilitate dialogue between operators and researchers, or between researchers from different disciplines.

A growing number of research studies now combine dietary diversity indicators with different agricultural variables (Jones, 2017; Sibathu and Qaim, 2018), yet the conditions needed for a worthwhile interdisciplinary dialogue are not always met. Debates have emerged between agricultural economists and nutritionists that have highlighted selective borrowing, and even methodological or conceptual confusion (on analysis units, groups, etc.). This questions the validity of certain interpretations, while underlining that indicators should not be presented as validated when the survey and analysis methods deviate from those outlined in standardized guidelines manuals (Verger et al., 2019). Conversely, social science researchers may criticise nutritionists for having too narrow a view of food (reduced to its nutritional components), individuals (reduced to their health status) and even more so of their family, social, cultural and material environment.

The synergy potential also depends on linkages between analysis units. The household is a key level, but scaling up from an individual to a household FNS is not clearcut. The contours of the household may be fluid, depending on whether it is considered as a unit of residence, income, consumption, or more specifically of food consumption. The question of contours is all the more critical in extended, polygamous and intergenerational family situations. What is more, farm households are both producers and consumers of food, thereby further adding to the complexity. By characterizing the contours and interactions within the household, social sciences (economics, socioanthropology) can help gain insight into how strategies are defined, how tradeoffs are made to generate, control and allocate resources, and the place food occupies in these strategies and tradeoffs.

Finally, between-discipline dialogue could be enhanced through an analysis of processes based on qualitative approaches (ethnography). Indicators used at the household level (HFIAS, HDDS, FCS, CSI) reveal nothing about the decision-making and allocation processes involving individuals or subgroups within the household (spouses, parents/children, etc.), about the nature of the relationships underlying these processes (cooperation, subordination, negotiation, compromise, conflict), or about possible resulting inequalities (gender, generational). Individual scores (WDDS/MDD-W and its adaptations for other individuals) can identify inter-individual differences within a household, but they are not meant to describe the underlying mechanisms.

►► Case study: farm household dietary diversity in Burkina Faso

This section draws on the multidisciplinary (nutrition, economics, agronomy, socio-anthropology, geography, political science and modelling) RELAX project¹¹, which is

11. <https://relax.cirad.fr/en> (queried 27/08/2021).

geared towards studying the agriculture/nature/market/food nexus in a province of western Burkina Faso. An individual dietary diversity score (WDDS-10 and MDD-W) was incorporated in an economic survey of 300 farming households. This example illustrates the discrepancy between the apparent simplicity of guidelines manuals and the actual implementation conditions—computing a diversity score is more complex than it seems.

Methodological choices

The RELAX project is focused on farm households, but we decided not to use the household HDDS indicator and instead opted for individual dietary diversity scores that enable interpretations in terms of the nutritional dietary quality. We also contemplated the conditions needed to conduct the analysis at the household level. WDDS/MDD-W measures the dietary diversity of women of childbearing age, who for biological reasons (pregnancy and breastfeeding) are more vulnerable to the risk of malnutrition. Moreover, women's dietary diversity can be interpreted as a baseline for what happens at the household level, as gender inequalities in access to food resources disadvantage women in many settings. To assess possible intra-household food consumption disparities, we also split the household into several consumption subunits, and randomly selected a representative from each one: a woman of childbearing age (15-49 years old), a man (15 years and older) and a child (8-14 years old).

We assessed seasonal variations in women's dietary diversity by conducting 12 monthly measurements between October 2017 and September 2018; for men and children (due to budgetary constraints), we limited ourselves to three measurements based on the cereal crop calendar, i.e. February (postharvest), May (onset of the hunger season, with possible pressures on stocks) and August (first harvest). As the agriculture/nature/market/food nexus is pivotal to the RELAX project, questions concerning the food supply mode were incorporated on the basis of four different modalities: self-consumed production, purchased, collected and donated supplies¹².

Field implementation

Considerable attention has been paid to the preliminary survey stage. It is generally recommended to allow for at least several weeks, which may vary depending on the extent of knowledge of the context and the available documentation.

As a first step, we conducted extensive research in collaboration with the project geographers to identify all foods available on farms, in markets and wild-gathered food. These foods were classified in a glossary along with the scientific names and translations into French and several local languages for the purpose of facilitating interviewers' subsequent work.

Once identified, the foods were assigned to one of the 10 food groups defined in the method (listed in note b, table 2.1). This classification is not always clearcut, e.g. maize should be classified in group 1 if consumed in the form of flour (for making *tô*, a dough that serves as a daily meal) or in the 'other vegetables' group if consumed fresh. A distinction should also be made between ripe mangoes or papayas ('vitamin A-rich

12. For children, a fifth modality « school canteen » was added.

fruits and vegetables’) and green ones (‘other fruits’). In situations in which there is very little dietary diversity, as was the case in the project, these classification differences could have a marked impact on the final score.

Finally, interviewer training is essential for mastering the technical features of the indicator, the context and also the relational aspects of the survey. A key challenge is to obtain accurate information while not biasing the responses. For instance, dish ingredients must be recorded without drawing assumptions on the recipes. The individual scope of the indicator must not be overlooked—the ingredients of a dish (meat, vegetables) may be unevenly shared amongst eaters, so it is important to make sure that they have actually been consumed by the respondent.

The interviewer training sessions took place over 6 days: an initial phase to explain the method, discuss local specific features and refine the questionnaires; a role-playing phase during which the participants played the role of both interviewer and respondent; and a test phase under real conditions in a nearby village (not included in the final sample).

The interview respondents were enthusiastic and curious during the first visit. The women were pleased by the attention paid to their food practices, which otherwise are generally not given much consideration. However, this interest waned along with the response accuracy as the survey progressed and the enumerators kept coming every month. We decided to interview women when they were alone in their homes so that they would feel free to express themselves on certain depreciated practices (e.g. eating a food without sharing it with the family, or diluting sauces because of a lack of means). It was sometimes hard to get reliable answers from certain respondents due to problems of comprehension or shyness, particularly when the questionnaire was administered to out-of-school children or to women living with their in-laws and who did not speak the local dialect. On several occasions the interviewers had to call upon an interpreter from the village, while taking care to ensure that he/she did not bias the answers. Another difficulty arose when the respondent had not actually prepared the food (in the case of children, men, and sometimes women when the meal had been prepared by another woman in the household).

Interviewers used a tablet for data input, but we also asked them to take notes so as to have meal cards corresponding to each surveyed household, and to be able to compare them with the food tables. This enhanced data quality control.

Data analysis

In the RELAX project, we computed the WDDS-10 and MDD-W indicators. MDD-W has been validated as a nutritional adequacy indicator, yet it is not as easy to handle as WDDS due to its dichotomous nature, especially when there is little variation and the sample size is small. In the RELAX project, during 6 of the 12 months of the survey, less than 20% of the women participants reached the 5-group threshold, which is problematic for intergroup comparison in the analysis. WDDS-10 is more sensitive to variation and more suitable for use with predictive models.

To answer our research questions, we also considered intermediate data so as to identify food groups and foods consumed. An analysis of the provenance of food enabled us to link the nutritional information to a broader analysis of practices and mechanisms within the agriculture/nature/market/food nexus.

Women's dietary diversity was very low, with an average annual score of 3.6 food groups consumed (Lourme-Ruiz et al., 2021). The daily dish was *tô* (group 1, see note b, table 2.1), served with a sauce made with leafy vegetables (often baobab leaves, group 7), sometimes with vegetables (onion, cabbage, tomato, group 9), groundnuts (group 3) or fish (group 5). The score improved between February and June because of the occasional availability of mangoes (group 8), market garden produce (group 9), and wild-gathered fruits (group 10). As already highlighted in other studies (Hoddinott and Yohannes, 2002; Savy et al., 2006), the score variation could not be automatically interpreted as an FNS variation. It was highest in June, when many households faced shortages of staple cereals, i.e. stockpiles from the previous harvest were not sufficient to bridge the gap to the next harvest, and people were limited in their market purchases due to a lack of available cash, especially as prices generally rise seasonally over the preharvest period.

A look at the supply sources revealed complementarities between food production, purchases and gathered produce, with complex seasonal patterns that depended on crop and livestock farming and non-agricultural systems, and on the status of women in these systems. For example, vegetable production could involve competition for land use and family labour (particularly with cotton or cereals, which underpinned local production systems); the vegetable production periods throughout the year depended on the extent of access to irrigation infrastructure (generally low); and perishable foods (fruit and vegetables) were only consumed at harvest or gathering times, due to the lack of means to preserve these foods. For instance, mangoes, which represented almost the entire group of vitamin A-rich fruits and vegetables, were only available in March–April.

Questions arise regarding the fact that some food groups were scarce in women's diets despite their nutritional value and local availability. Milk produced locally by Peul people and readily available on the markets was hardly ever consumed. Eggs were totally absent from the diet, whereas almost all farms had poultry livestock. Legumes were consumed very little, even though they were grown on many farms in rainfed conditions, and they stand up well during storage. Everything cannot be simply explained by financial and availability bottlenecks. It is essential to gain insight into the mechanisms underlying this under-consumption in order to find ways to remedy the situation. This should take into account multidisciplinary views on knowledge, perceptions and food preferences, on economic tradeoffs (opting to sell rather than self-consume a food product, prioritizing purchases of a given food), on possible intra-household tensions over the control and use of budgets and food stocks, etc.

Home consumption patterns were similar when the three sample sub-populations (men, women and children) were compared, whereas out-of-home consumption patterns differed. Unlike women, children ate more legumes, i.e. cowpeas served in school canteens, and more wild-gathered fruits. Men had more activities outside the family household and thus access to more fish and vegetables such as cabbage served in small informal restaurants. Note that HDDS, which excludes out-of-home consumption, would not have identified these nutritionally important differences.

The RELAX project example highlights the advantages of looking at the data prior to the scores, and assessing the range of causes leading to the consumption (or not) of a given food group or item. The interviews conducted by the project sociologists also

revealed that households did not seek to diversify their diet in the nutritional sense. The priority was to ensure cereal intake. Once satiety was achieved, households sought to vary their dishes by alternating sauces or replacing maize *tô* with rice. These choices did not necessarily result in a higher diversity score. The diversity score is generally meaningless for populations that do not consume food groups, but rather food items and dishes. This research on bottlenecks, rationales and representations provides food for thought on more suitable interventions and messages.

In conclusion, discussions on indicators often highlight the tension between standardization of the method (to produce spatiotemporally comparable validated results within a relatively short time period) and adaptation to the local context (for greater finesse). In this chapter, we show that FNS indicators also have considerable potential by offering the possibility of separately analysing data collected upstream for the purpose of indicator computation, and linking them to more meaningful explanatory schemes. While not overlooking the difficulties that may arise, the chapter showcases the interest of closer collaboration between nutrition and social sciences to produce relevant knowledge while designing or piloting appropriate food and nutrition security interventions.

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List of the main symbols and abbreviations

CSI: Coping Strategies Index

FANTA: Food and Nutrition Assistance Project

FAO: Food and Agriculture Organization of the United Nations

FCS: Food Consumption Score

FIES: Food Insecurity Experience Scale

FNS: Food and Nutrition Security

HDDS: Household Dietary Diversity Score

HFIAS: Household Food Insecurity Access Scale

HHS: Household Hunger Scale, from HFIAS

IDDS: Individual Dietary Diversity Score

MDD-W: Minimum Dietary Diversity Score for Women

WDDS: Women's Dietary Diversity Score

WHO: World Health Organization

WFP: World Food Programme

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Chapter 3

Impact assessment on nutritional health prevention and promotion initiatives

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Public health has shifted towards a more preventive approach over the last 30 years. This chapter outlines different methods to assess the impacts of nutritional public health prevention and promotion measures. Insight gained from these methods may ultimately be used to guide decision making in this sector.

The prophylaxis approach—aimed at preventing disease onset—is as old as the history of medicine. Prior to the advent of the great innovations of the industrial age (public hygiene, vaccination, pasteurization, antibiotics, etc.), the preventive health approach was closely linked to epidemic infectious disease control, yet it took a new direction in the 20th century. In 1948, the World Health Organization (WHO) defined health as “...a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.” This multidimensional wellbeing notion transcends the prior reductive view of health as simply an absence of disease or disability. Major health promotion and prevention concepts stem from this definition. Otherwise, prevention includes all measures aimed at averting or reducing the number and severity of diseases, accidents and disabilities (WHO, 1948). The three levels of prevention are: primary prevention, aimed at reducing the disease incidence (i.e. the extent of disease onset in a population); secondary prevention, aimed at reducing the disease prevalence (i.e. the number of ill people), and; tertiary prevention, whereby chronic disease-linked disabilities and recurrence risk factors are managed. The First International Conference on Health Promotion held in Ottawa in 1986 signalled a public health paradigm shift from disease prevention to health promotion. The Ottawa Charter for Health Promotion that emerged from this conference is the seminal text on health promotion, and defines it as: “the process of enabling people to increase control over and improve their health” (WHO, 1986). In the nutrition field, health promotion thus encompasses a broad range of social, environmental and economic interventions designed to enhance people’s abilities and capacities to curb diet-related health disparities, while ensuring their wellbeing. In the epidemiological outcome framework, health promotion and prevention assessment is focused

on studying the effects of these interventions on health, nutrition and underlying determinants so as to ensure their effectiveness and lack of harmful effects on target populations, while suggesting potential opportunities for improvement. In everyday language, the term ‘impact assessment’ refers to the analysis of the effects of an intervention or programme on the health of individuals. These effects encompass immediate (outputs), medium-term (outcomes) and long-term (impacts) effects. Impact assessment is focused on the causal links (i.e. causal relationships) between an intervention (existing or set up for a given study) and changes in the health status of a group of individuals in order to determine whether or not these changes could be directly ascribed to the intervention.

► Measuring intervention effects: causal inference

A major challenge in impact assessment is to be able to isolate the effects of an intervention so as to ensure that the observed changes are not due to other factors, such as the environment or the participants’ socioeconomic background. Measurement of the presumed effects of an intervention would require a comparison of changes in a given health outcome of an individual if he/she had or not undergone the intervention. However, such comparisons are impossible because an individual cannot be both exposed and unexposed to a health intervention at any given moment. The causal link is therefore not directly measurable and attempts must be made to estimate it via so-called ‘causal inference’. A number of criteria can help distinguish a causal relationship from a mere association. The best known are the Hill criteria drawn up by Bradford Hill in 1965. He set out nine baseline criteria to facilitate causal inference, including: the strength of the association, the temporality of the association (i.e. exposure to the presumed causal factor must precede the disease onset), the existence of a dose-response relationship (i.e. the risk must increase with the level of exposure to the factor), the specificity of the association (i.e. a cause leads to a specific effect), the reproducibility of the association in different populations or contexts, the biological plausibility of the association (i.e. the association considered is consistent with general biological knowledge), the biological consistency (i.e. the causal interpretation of the association under consideration is consistent with available knowledge), the presence of biological or animal experimental data, and the analogy to other causal relationships and their mechanisms.

Regarding measurement, as in all studies, there is a risk that the measured value of an effect (here the causal effect) could be subject to systematic error, or so-called bias. There may be many biases at different levels, e.g. in the selection of study participants (selection bias), during data collection (measurement bias) or during data analysis (confounding bias) (Table 3.1). Impact assessment therefore requires methods that are able to estimate the causal effects of an intervention on the health of a given population while avoiding the biases mentioned above. There are two main families of assessment methods, i.e. experimental and quasi-experimental studies.

Experimental studies, or so-called randomized controlled trials (RCTs), are widely used in experimental medicine to measure the effectiveness of a treatment. These methods involve comparing the change in one or more health outcomes in a group receiving the intervention with the change in the same outcomes in a group not receiving the intervention (control group). The term ‘randomized’ means that

Table 3.1. Survey bias.

Type of bias	Definition	Examples of bias
Selection bias	Occurs during participant selection: Sample not representative of the target population Systematic differences between the various comparison groups in a study	Volunteer bias (also called self-selection bias): people who volunteer have different characteristics compared to those who refuse to participate in a study Attrition bias: individuals dropping out of a study before completion have different characteristics compared to those remaining
Measurement (or information) bias	Estimation error during data collection, which occurs identically (non-differential error) or differently (differential error) in the comparison groups of a study	Reporting bias: misreporting or inaccurate reporting by individuals due to memory issues or deliberate omission (underreporting bias) Bias related to measurement uncertainty: e.g. a non-validated food frequency questionnaire, leading to erroneous estimation of portions consumed Social desirability bias: the tendency of individuals to give socially acceptable responses Interviewer bias: greater interviewer attention to the intervention group
Confounding bias	Misestimation of associations due to an external factor jointly associated with the exposure and investigated health outcomes	

individuals are randomly assigned to the intervention or control groups, allowing the researchers to control the various study parameters, as well as the group's access to the intervention. The health outcomes can be assessed at several time intervals, at least before and after intervention, and possibly during the intervention. Randomization enables the formation of comparable groups. Indeed, pending a sufficiently large sample, random assignment produces distributions that tend to be similar for all factors unaffected by the treatment. Randomization thus tends to equalize the characteristics of individuals between groups. Under controlled experimental conditions and with comparable groups, the risks of selection and confounding bias are reduced and the effects of the intervention on the health status of participants can be more easily isolated. As a result, randomised controlled trials have high internal validity¹³, which gives them a high level of evidence (Haute Autorité de Santé, 2013). This type of study is thus referred to as a gold standard in impact assessment. RCTs are ideally conducted such that either the investigated person only (single-blind trial) or the investigated person and the investigator (double-blind trial) do not know to which group the participant is assigned. This procedure avoids

13. A study has good internal validity if the results are reliable, namely the outcomes measured are those attributed to the intervention. There are two main types of error that could hamper the internal validity of a trial: bias (also called systematic error) and random error (also called chance error or statistical error). The methodological quality of the study depends on the presence or absence of bias.

measurement bias related to the participant (who may react differently depending on the group to which he/she is assigned), but also to the investigator (who is more likely to give extra attention to the intervention group).

Quasi-experimental studies are similar to experimental studies, but differ in that there is no random assignment of participants into the intervention or control group. The researchers must then try to replicate the experimental conditions using suitable study design and relevant statistical analysis procedure.

Experimental and quasi-experimental studies can be explanatory or pragmatic. Explanatory research (also called efficacy trials) aim to assess whether an intervention works under ideal or selected conditions, while pragmatic research (also called effectiveness trials) are geared towards assessing whether an intervention works under real-life conditions. These two notions (efficacy and effectiveness) are important to take into account when designing a health prevention or promotion study as they will determine key methodological points related to the intervention protocol (type of design, intervention site, target population, choice of control group, etc.). Natural experiments¹⁴ are an example of so-called effectiveness trials.

» **Assessment of intervention effects: a diverse range of methods**

Study design

In practice, different experimental or quasi-experimental designs can be considered when conducting an impact assessment study.

Experimental design

Various experimental designs may be possible depending on the context, the outcomes of interest and the study population. The most common experimental designs are: controlled parallel-group trials, cluster-randomized controlled trials, stepped-wedge randomized controlled trials, or randomized trials with post-randomization consent. These designs will be discussed in further detail below.

Controlled parallel-group (or -arm) trials

The standard design for randomized controlled trials is the parallel-group (or -arm) randomized trial inspired by therapeutic studies to test the efficacy of a new treatment (Figure 3.1). This design involves randomly assigning participants to an intervention group or a control group and monitoring them in parallel.



Figure 3.1. Parallel-group randomized trial design.

14. In a natural experiment, intervention exposure is due to natural and/or political causes that cannot be altered by the researcher.

The SU.VI.MAX study presented below (Box 3.1) is an example of a randomized controlled parallel-group trial.

Box 3.1. SU.VI.MAX study (Hercberg et al. 2004)

■ Aim

To test the efficacy of supplementation with a combination of antioxidant vitamins and minerals in reducing the incidence of cancer and ischemic cardiovascular disease in the general population.

■ Experimental design

A total of 13,017 French adults aged 35-60 years were recruited on a voluntary basis. All participants took a single daily capsule of a combination of antioxidant vitamins and minerals or a placebo. Random treatment allocation was performed by block-sequence generation stratified by sex and age group. The trial was double-blinded. Blood sampling, anthropometric measurements and reporting of new health events (cancer or cardiovascular diseases) were performed at different time intervals between the start and end of the intervention. The median follow-up time was 7.5 years.

Health promotion and disease prevention interventions often involve multiple components that may interact with each other and with the contexts in which they are implemented, which prevent the use of parallel arm trials whether for methodological, practical or ethical reasons. Other experimental designs commonly used in public health to assess the intervention efficacy are discussed below.

Cluster-randomized controlled trials

Randomization of individuals is not the most suitable strategy, when an intervention targets groups of individuals or entities (e.g. schools, hospitals, cities, etc.). In such cases it is better to randomize entities directly rather than individuals—this is known as a cluster-randomized trial approach (Figure 3.2).

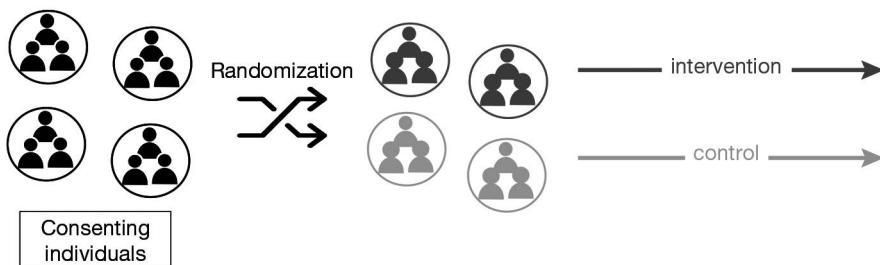


Figure 3.2. Cluster-randomized controlled trial design.

A key advantage of cluster randomization is that it provides an opportunity to geographically separate the intervention group from the control group. This design is therefore preferred when there is a high risk of contamination between groups (i.e. some individuals in the control group receive the intervention), which may lead to underestimation of the real intervention effects. Individuals in a cluster tend to have

more similar characteristics as compared to those in other clusters, so cluster trials require a larger number of individuals to account for this intra-cluster correlation. The Cash for Nutrition Awareness study presented below (Box 3.2) is an example of a cluster-randomized controlled trial.

Box 3.2. Cash for Nutrition Awareness study as part of the SNACK project (Adubra et al., 2019)

■ Aim

To assess the effects of cash transfers and/or nutritional supplements targeting the first 1,000 days of life (from conception to 2 years old), conditional upon attendance at healthcare centres, on reducing stunting in young children in the rural region of Kayes, Mali.

■ Experimental design

Seventy-six community health centres were randomly assigned to a comparison group in which mothers only benefitted from basic health and nutrition activities (= SNACK activities) and three intervention groups where, in addition to SNACK activities, mothers received:

- monthly cash transfers
- lipid-based nutritional supplements for their 6-23 month-old children
- or a combination of cash transfers and nutritional supplements.

In each group, a representative sample of mother-child pairs was selected and surveyed prior to the intervention (2013, $n = 5,046$) and then at the end, 3 years later (2016, $n = 5,098$).

Stepped-wedge randomized controlled trials

A major limitation of parallel group or cluster trials is that the control group does not benefit from the intervention, which raises an ethical issue. One solution may be to gradually include the groups in the intervention, as in stepped-wedge randomized trials. Initially, no individual (or cluster) receives the intervention and then gradually each individual receives the intervention in a randomly predetermined order. The effects of the intervention can then be estimated via comparisons between groups (individuals who have not yet received the intervention form the control group) or within groups (before and after the intervention), thereby enabling intra- and inter-group comparisons of the intervention effects (Figure 3.3).

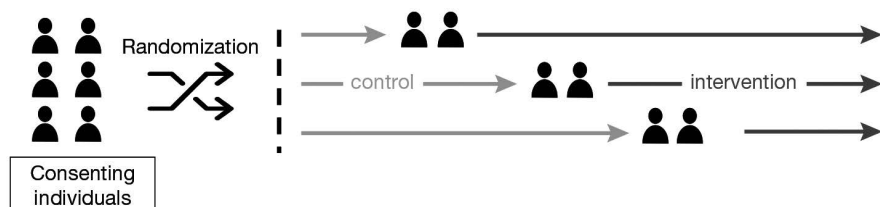


Figure 3.3. Stepped-wedge randomized controlled trial design.

By temporally staggering the intervention, stepped-wedge trials also offer a possibility of studying the temporal effects of the intervention. This design can be especially

useful for interventions that are hard to conduct simultaneously on half the population for ethical, practical, logistical or budgetary reasons. The costs can, however, turn out to be high in the long term as all of the people receive the intervention. Moreover, the main shortcoming of stepped-wedge trials is that they take longer to conduct than other trials due to the successive inclusion of groups, which may increase the participant dropout rate, but also increase the risk that factors external to the intervention might have changed over time, thereby complicating between-group comparisons. This is called 'situational bias'. The study presented below (Box 3.3) is an example of a stepped-wedge randomized controlled trial.

Box 3.3. School intervention (Ni Mhurchu et al., 2013)

■ Aim

To assess the effects of a free school breakfast distribution programme on children's school attendance, academic achievement, psychosocial behaviour, food habits, hunger, breakfast habits and food security.

■ Experimental design

Fourteen primary schools in disadvantaged areas of three New Zealand regions (Auckland, Waikato and Wellington) without a school breakfast programme were identified in 2010. A total of 424 students, 5-13 years of age, met the eligibility criteria and agreed to participate in the study. All schools served as controls at the intervention launch and were then randomly assigned to start the intervention in one of the four school periods (3-4 schools per period). All schools had received the breakfast programme by the end of the school year.

Randomized trials with post-randomization consent (Zelen's design)

In addition to ethical concerns, parallel group or cluster trial designs may result in high dropout of participants assigned to the control group. To overcome this issue, Zelen's randomized trial design with post-randomization consent was proposed by Marvin Zelen, a statistician at the Harvard School of Public Health. Unlike other trials, where randomized assignment to the intervention or control group is only done after the individual has given informed consent, Zelen's design involves randomizing individuals before they have given their consent. Individuals assigned to the intervention group are then informed and can refuse to receive the intervention (Figure 3.4).

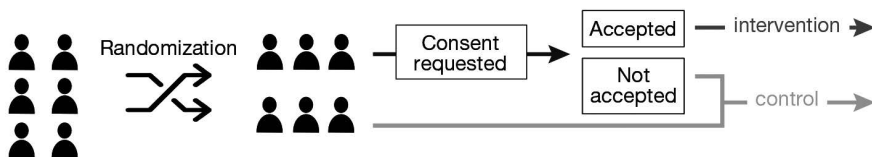


Figure 3.4. Design of a randomized trial with post-randomization consent.

Zelen's design has two major advantages, i.e. a greater number of individuals may be recruited as consent is only required from members of the intervention group, while it also reduces the dropout rate by avoiding participant disappointment for

being assigned to the control group (as they are unaware of the existence of the intervention). Yet this design is seldom used because of the many ethical issues it raises, including the fact that control group members are included in the study without their prior informed consent. Moreover, this design involves data collection from participants assigned to the intervention group who have refused to receive the intervention. In compliance with the randomization principle, Zelen's trial design results are assessed on an intention-to-treat basis, i.e. according to the groups within which individuals were initially randomized, regardless of the actual treatment received. The intention-to-treat analysis principle retains the benefits of randomization in the outcome analysis, thereby avoiding bias due to deviations between the trial protocol and its actual implementation, which would not be due to chance but instead related to the administered treatment. During data analysis, individuals assigned to the intervention group are thus compared to those in the control group regardless of whether or not they have accepted the intervention. The intervention efficacy may then be masked if the refusal rate is high. The Lyon Diet Heart Study presented below (Box 3.4) is an example of a randomized trial with post-randomization consent.

Box 3.4. The Lyon Diet Heart Study (de Lorgeril et al., 1994)

■ Aim

To compare the effects of a Mediterranean alpha-linolenic acid-rich diet to the usual post-infarct prudent diet after a first myocardial infarction.

■ Experimental design

A total of 605 patients under 70 years old who had survived a myocardial infarction in the previous 6 months were recruited at the University Hospital of Lyon (France). During the hospital stay, patients agreed to participate in a 5-year cohort without being fully informed on the study design, particularly with regard to the comparison between two diets. Only patients assigned to the experimental group signed a second informed consent, whereby they agreed to modify their diet and were encouraged to adopt a Mediterranean-type α -linolenic acid-rich diet. During the first 4 years, dietary habits were assessed only in the experimental group, using 24 h recall and food frequency questionnaires so as not to influence the behaviour of the control participants. Medical interviews, blood sampling and blood pressure measurements were conducted at 8 weeks and then annually to identify cardiovascular deaths, non-fatal infarcts, and the onset of vascular disorders such as angina, heart failure, stroke and pulmonary embolism.

Quasi-experimental designs

The main non-experimental designs used in nutritional health promotion and prevention interventions are nonrandomized controlled trials and time series. These designs will be discussed in further detail below.

Nonrandomized controlled trials

Randomized controlled trials are considered to be the optimal study design for minimizing bias and providing an accurate assessment of an intervention impact, yet many

constraints preclude their use, particularly in the public health field. Researchers may not be able to control the site and extent of exposure to the intervention, which may have been selected prior to the assessment study. Study sponsors may also object to random allocation of individuals and want to serve all those in need of the intervention, hence making it difficult to set up a control group. When it is not possible to randomize individuals between the intervention and control groups, nonrandomized controlled trials (also known as before-and-after studies with a control group) can be used to investigate causal inference (Figure 3.5).



Figure 3.5. Nonrandomized controlled trial design.

The main shortcoming of this type of study is the risk of bias due to the lack of randomization, which may lead to incomparable groups prior to the intervention. Individuals participating in the intervention may differ from those in the control group in terms of some characteristics, such as sociodemographic criteria. Subsequently observed between-group differences in health outcomes may hence not be due to the intervention but rather to the fact that the groups were not comparable at the outset. Such biases undermine the internal validity of the study, thereby complicating the causality assessment. Nonrandomized controlled trials degree of proof is therefore lower than that of randomized ones (Haute Autorité de Santé, 2013). The JarDinS study presented below (Box 3.5) is an example of a nonrandomized controlled trial.

Box 3.5: JarDinS study (Tharrey et al., 2020)

■ Aim

To assess the impact of the first year of community garden participation on the three dimensions of lifestyle sustainability (social/health, environment and economic).

■ Experimental design

Seventy-five individuals entering a community garden in Montpellier (France) were recruited in 2018. A control group of non-gardeners was formed by inviting volunteers involved in a population-based survey on food supply behaviours in Montpellier to participate in the study. Each gardener was matched with a non-gardener according to the following matching criteria: age, gender, household composition, household income and type of neighbourhood in which they resided. Household data (nutritional quality, environmental impact and cost of monthly household food supplies) and individual data (physical activity, mental wellbeing, social isolation, sensitivity to food waste and connection with nature) were collected at the time of inclusion in the study and again 1 year later.

Time series

It may, depending on the setting, be hard or impossible to set up a control group that is not exposed to the intervention (e.g. when a new law is passed or a new prevention campaign has been launched). Without a control group, just pre- and post-intervention measurements of the studied health parameter will not reveal a causal relationship. An unbiased assessment of the causal effects of an intervention is only possible if the intervention is the sole factor altering the studied health outcomes. This is, however, seldom the case as the environment may have changed between the beginning and end of the intervention, thereby leading to changes in the target variables (situational bias). One option is to collect data at several different times pre- and post-intervention to determine whether the intervention has changed a pre-existing trend—this is known as a time series study design (Figure 3.6).

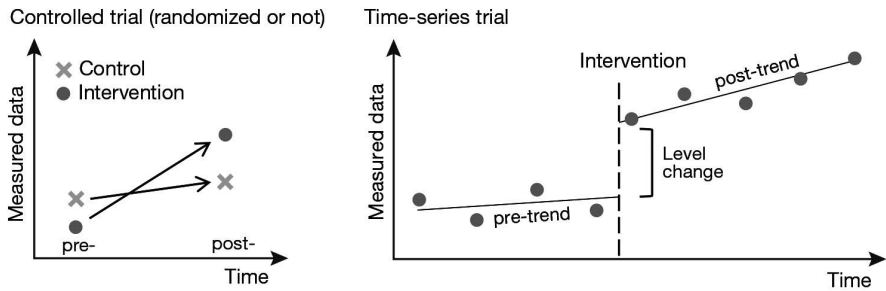


Figure 3.6. Time series study design.

The degree of proof of these studies is lower than that of randomized and nonrandomized controlled trials (Haute Autorité de Santé, 2013). The advantage of time series is that they are relatively fast to carry out if inexpensive routine data are available. They are also preferable when monitoring the long-term effects of an intervention. However, even when they are well conducted, time series do not offer the possibility of accounting for events other than the intervention that otherwise might explain a change in the studied health parameter. Moreover, these trials require greater commitment from the research team, which must collect data regularly over long periods of time using the same collection methods. The study presented below (Box 3.6) is an example of a time series design. Table 3.2 summarizes the different study designs presented in this section and their respective advantages and disadvantages.

Enhancing between-group homogeneity: the matching solution

As discussed in the previous section, the greater the number of individuals, the more similar groups are formed by randomization due to the law of large numbers¹⁵. However, technical and budgetary constraints may limit participant recruitment. Stratified randomization may enhance homogeneity between the intervention and control groups without increasing the sample size. By this method, participants are

15. The law of large numbers is a mathematical theorem which states that the characteristics of a random sample will get closer to the statistical characteristics of the concerned population as the sample size increases to infinity.

Box 3.6. Price levy on sugar-sweetened beverages in a chain of restaurants (Cornelsen et al., 2017)

■ Aim

To assess the impact of a £0.10 per-beverage levy on sales of non-alcoholic sugar-sweetened beverages (SSBs) in a national chain of commercial restaurants in the UK.

■ Experimental design

On 1 September 2015, a national chain of UK restaurants added a £0.10 levy to the price of each non-alcoholic SSB sold within them. To assess the efficacy of this natural experiment, detailed time series data on the number of drinks sold before and after the intervention in 37 eligible restaurants were supplied by the company. Changes in the number of SSBs and other beverages sold per customer in the short and long term were measured based on weekly (12 weeks pre- and post-intervention) and monthly (6 months pre- and post-intervention) data, respectively.

grouped in strata based on one or more factors and randomization is performed within each stratum. This participant grouping according to budgetary constraints may limit participant recruitment. Stratified randomization may enhance homogeneity between the intervention and control groups without increasing the factors deemed relevant is called 'matching'. Let us consider a study focused on the effects of fruit and vegetable consumption on the risk of developing breast cancer. As menopausal hormone treatments can increase the risk of breast cancer, it may be essential to stratify according to the menopausal status so that each group will have the same proportion of pre- and post-menopausal women.

Stratification factors are generally sociodemographic variables such as age, gender or education level, but may also be criteria related to the environment or individual lifestyles. The main advantage of matching is to balance the between-group distribution of factors, thus enhancing the comparability of the groups with respect to the stratification factors. Matching can also be used to over-represent some population categories of special interest for the study.

In quasi-experimental studies, another option to reduce confounding bias due to the lack of randomization is to separately match control group individuals with those in the intervention group based on one or more known confounding factors. However, matching should not be done on the basis of an excessive number of variables to avoid making it harder or even impossible to identify similar individuals to form the control group. Moreover, matching according to variables that are not potential confounders and that are closely associated with exposure generally enhances the intervention and control group comparability with respect to the studied exposure, thereby leading to a loss of power and underestimation of the intervention effects, i.e. so-called over-matching. This issue is often sidestepped by matching only on the basis of potential confounding factors that are well established in the literature. A method that can be used when many variables could jointly influence the intervention participation and the variable of interest is to match individuals on the basis of a propensity score rather than of a limited number of observable characteristics. This score is calculated from a set of observed individual characteristics and summarizes their impacts on the propensity to participate in the intervention. Regardless of the chosen method, the

Table 3.2. Advantages and disadvantages of different experimental and quasi-experimental study designs.

Randomized controlled trials		Degree of proof
EXPERIMENTAL STUDIES	ADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
QUASI-EXPERIMENTAL STUDIES	DISADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
	Zelen's design	
Nonrandomized controlled trials		Degree of proof
EXPERIMENTAL STUDIES	ADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
QUASI-EXPERIMENTAL STUDIES	DISADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
	Zelen's design	
Time-series trials		Degree of proof
EXPERIMENTAL STUDIES	ADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
QUASI-EXPERIMENTAL STUDIES	DISADVANTAGES	
	Parallel groups	
	Clusters	
	Stepped-wedge	
	Zelen's design	

main drawback of matching is that the selected variables are generally observable individual characteristics. However, other unobservable variables (e.g. motives, beliefs, etc.) can also influence the intervention participation and lead to biased estimates of the causal effects.

Sample size

Once the most suitable assessment method for the context has been identified, the statistical power should be calculated to determine the minimum number of individuals to recruit into the study to assess the intervention impact. This step is essential because the intervention impacts cannot be estimated without a sufficient number of individuals—the statistical power increases with the sample size. The sample size calculation depends on the study design, the type of data collected, the main outcome variable chosen for the calculation and the expected significance level. It is also essential to estimate the attrition rate (i.e. the participant dropout rate before the end of the study) and to increase the sample size accordingly. Indeed, a higher than expected attrition rate will lead to a loss of statistical power, which could in turn have far-reaching methodological consequences. Moreover, a high attrition rate increases the bias risk since the characteristics of individuals remaining in the study are likely to differ from those who have dropped out.

► Ethical and legal issues

The main ethical principles applicable to research involving humans were set out in the World Medical Association (WMA) Declaration of Helsinki (1964). They aim to preserve the integrity of participants by ensuring that all studies respect their health, wellbeing, privacy and personal data. Only research that is warranted by offering a potential benefit to individuals' health while not jeopardizing their integrity may be conducted. For interventions with a control group, there must be absolutely no risk that the control group could be harmed by not receiving the intervention. For instance, if individuals are recruited from waiting lists for access to community gardens to assess the benefits of these gardens on people's diet, some of the individuals cannot be forced to give up their potential access to the gardens. Designs such as stepped-wedge trials are therefore preferred to ensure that all individuals could eventually benefit from the programme. All studies must first be evaluated by an institutional review board to check that the research protocol complies with established ethical principles. Participants must also give their informed consent prior to the study, i.e. they must be informed about the study targets, protocol, data collected, as well as their rights and safeguards prescribed by law. In France, the requirements for informed consent and confidentiality vary depending on the type of intervention and data collected and are regulated by Jardé's law (decree n° 2016-1537 of 16 November 2016), while processing of the collected data is controlled by the general data protection regulation (GDPR).

Participant involvement throughout the study is essential for the success of an intervention. This involvement largely depends on the stance of the researcher, who must establish a trusting relationship by encouraging communication and listening to the participants. The use of incentives (usually financial), regular follow-up to keep in touch with participants, or the involvement of participants in the study design (co-construction) are options that can foster participation. Yet compliance with the

research ethics is also crucial. For instance, financial incentives cannot be proposed to vulnerable populations (e.g. children) and participants cannot be urged to act against their moral principles. Moreover, monitoring must not infringe on privacy, etc.

Finally, health prevention and promotion intervention research aims to be socially beneficial by identifying initiatives that could enhance the health of individuals while combating social inequalities with regard to health. This research can thus serve as a decision-making tool for policymakers so that projects (generally health programmes or policies) geared towards enhancing the health and wellbeing of populations can be developed. Co-construction of the intervention and assessment with all of the concerned stakeholders—institutional, territorial, professional or citizens—is especially important to ensure that the intervention is relevant and readily transferable in the studied context.

►► Contextual adaptation: example of the Cash for Nutrition Awareness Study in Mali

The design and/or implementation of impact studies may have to be tailored to the specific context. For instance, several adjustments were necessary in the randomized controlled trial conducted in Kayes region in Mali exemplified above (Adubra et al., 2019):

- control group: as in many other intervention studies, it was not ethically possible to form a control group that would not benefit from the intervention. In agreement with the programme operators, it was thus decided that the control group would receive a minimum health and nutrition activity package. The intervention groups also received this package, in addition to the interventions, thereby ensuring between-group comparability. From a research standpoint, under this configuration the interventions were assessed in comparison with the minimum activity package, not with a strict control group (no intervention);
- randomization: the randomization of individuals or groups of individuals into different intervention arms is a complicated process that must be understood and consented by all study participants. If the randomization process is not blinded, it should be transparent in order to increase acceptance by the target populations. In the Malian study example, as very strong beliefs prevailed in the target population, it was essential that the randomization process be in the form of a public large event to which the administrative, religious and traditional authorities and concerned communities were invited. Randomization was then carried out in a transparent straightforward way by asking an uninformed person to draw coloured balls from a bag;
- intervention monitoring: the distribution of nutritional products in a context such as that in Mali could give rise to evaluation issues as the distributed products are often resold or exchanged on local markets. Verifications should hence be carried out during evaluation surveys to offset this issue, e.g. by checking the empty pots or bags of distributed products.

►► Intervention theory and process assessment

Public health interventions are relatively complex unlike clinical trials where the intervention efficacy is assessed using a single criterion. The causal relationship between the intervention and the health effects may involve a chain of mechanisms

interacting with each other and with the local context. Nutrition and health prevention and promotion interventions are therefore based on a holistic view of health while focusing on the different individual, social, societal, economic or environmental determinants that influence health. A consistent, useful and explanatory assessment must primarily be based on the intervention rationale (or theory), i.e. on the underlying causal assumptions. When based on a logical model, impact pathways of the intervention may be theoretically identified to gain insight into how it has or not achieved its targets via testing of the hypothesised impact pathways identified in the intervention design process. A comprehensive intervention theory should also include a process theory, i.e. a clear operational plan to ensure optimal implementation of the intervention as originally designed. Both impact and process assessment are tightly linked, i.e. if the targeted intervention impact is not achieved, the assessment must be able to identify whether the failure is due to an implementation or design flaw. If the implementation process is at fault, recommendations should be put forward to enhance the intervention quality, whereas the adopted intervention strategy should be completely rethought if the theory is at fault. The intervention rationale should be considered during the study design stage to help determine what data should be collected and analysed. Moreover, it is essential to consider the intervention effects on people's abilities, beliefs and values as a first clue to the intervention efficacy in cases where the health impacts are not immediately clearcut within the research timeframe—it could then be assumed that these impacts might emerge in the long term. Interdisciplinary dialogue (nutritional epidemiology/public health/social sciences) and qualitative survey methods (in-depth interviews, monitoring, etc.) are thus often necessary to get a comprehensive view of the causal relationships tested via quantitative assessment, and to explain the behavioural change mechanisms involved (or not).

Note also that health prevention or promotion intervention assessments should be broadened to encompass the economic, social or environmental impacts so as to help determine the intervention relevance. This evaluation approach should apply at all stages of the study in order to verify: 1) the relevance of the initiative (i.e. that the objectives meet the identified needs), 2) the efficacy (i.e. the results obtained are in line with the targets), 3) the effectiveness (i.e. the extent of the material, human and financial resources used), and finally 4) the assessment of direct and indirect impacts, such as those observed on the environment, field operators or other groups of people not directly targeted by the intervention.

In conclusion, impact assessments are essential for documenting the efficacy of interventions, in turn providing decision-making support. Experimental studies involving random assignment of individuals (or randomization) have high internal validity and are therefore considered as a gold standard for intervention impact assessment. Different study designs may be considered depending on the research issue, study context and target population. Quasi-experimental designs are preferred when randomization is not possible for practical or ethical reasons as they can provide the least biased assessment of the intervention effects. Even though context-specific adjustments may be possible, these studies must meet numerous methodological criteria in order to provide a sufficient level of evidence to be able to attribute the observed effects to the intervention.

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Chapter 4

Experimental economics: highlighting the preferences and factors influencing people's decision making

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Experimental economics is focused on people's preferences and decisions, while seeking to objectify causal factors that prompt people to adopt certain behaviours rather than others. Experimental procedures ensure the control of decision variables and enable assessment of the relative weights of different factors.

Imagine being offered to play a coin toss game. You may keep tossing the coin as long as it comes up heads. You win €1 on the first toss and the winnings are doubled for each subsequent toss (€2 on the second, €4 on the third, etc.). The game ends when the toss comes up tails. How much would you be willing to pay to play a game like this? Probability theory is clearcut in this regard—since the expectation of winning is infinite¹⁶, you should bet everything you have, but this of course is not empirically supported. The first example of an experimental economics study is attributed to this so-called 'St. Petersburg paradox', which was identified by Daniel and Nicholas Bernouilli in 1738 (Roth, 1995) when monitoring people's decision-making in a risky environment to test theoretical predictions.

Around the same time, in his book *A Treatise of Human Nature*, David Hume introduced a natural science-based method involving careful and rigorous experiments to gain insight into the human spirit and reasoning (Bardsley et al., 2010). In the late 19th century, neoclassical economics pioneers used experimental psychology results to formulate the diminishing marginal utility hypothesis, while William Jevons was the first to publish controlled economic experimental results in a scientific journal in 1870. However, few economics experiments were subsequently undertaken, apart from those conducted by Louis Thurstone in 1931 to estimate indifference curves¹⁷ for a person according to his/her (hypothetical) choices between different options.

16. The expected gain is equal to $\frac{1}{2} \times 1 + \frac{1}{2} \times \frac{1}{2} \times 2 + \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times 4 + \dots + \frac{1}{2^n} \times 2^{n-1} + \dots = \sum_{n=1}^{\infty} \frac{1}{2}$.

17. Indifference curves in economics represent the preferences of economic stakeholders and are used to analyse their choices in different settings. This concept is a pillar of neoclassical economics.

The advent of experimental economics as an economic discipline is considered to have been confirmed following publication of the *Theory of Games and Economic Behavior* by John Von Neumann and Oskar Morgenstern in 1944. The rational choice theory and the new strategic behaviour theory presented in this book had a major influence on experimental economics by steering experimental testing in a new direction. In 1948, Edward Chamberlin, renowned for his work in industrial economics, carried out a market experiment with his students to test the price formation mechanism. Thereafter, in 1951, Frederick Mosteller and Philip Noguee conducted the first experiment to assess real choices, i.e. with real monetary implications, in a risky environment. Meanwhile, Merrill Flood and Melvil Dreher tested John Nash's concept of equilibrium via several experiments geared towards studying strategic interaction behaviours in games. In 1953, Maurice Allais used an experimental method with hypothetical choices and focused specifically on the rationality concept in economics (Allais paradox). Then a few years later, in 1961, Daniel Ellsberg carried out the first experiment in an uncertain setting (Ellsberg paradox). Most of these early experimental studies were published in leading economic journals, yet they were not considered major contributions by the economics community at the time.

The subsequent development of experimental economics, which emerged in the 1960s and 1970s, may be divided into three main periods (Serra, 2012). In the early 1960s, Vernon Smith published an influential experiment that set the stage for further development of the discipline. He added choice repetition to Chamberlin's experimental protocol and tested different market rules. In 1975 he set up the first computerized experimental economics laboratory, i.e. the Economic Science Laboratory, at the University of Arizona, before publishing a seminal paper on experimental methodology in economics in 1976 (Smith, 1976; reprinted in Smith, 1982). Experimental economics developed in parallel in Germany, notably with Reinhard Selten's research, and several general economics journals began publishing experimental studies from the late 1970s.

Experimental economics really took off in the 1980s with exponential growth of research in this field and its recognition as a positive contribution to mainstream economics. The experimental economics community then became structured with the creation, in 1986, of the Economic Science Association¹⁸ responsible for promoting experimental economics and organizing conferences for experimental economics specialists. The mid-1990s marked the age of maturity, with many studies in this field accepted for publication in a range of scientific journals, special issues and a first handbook published in 1995 (Kagel and Roth, 1995), followed by others, and even the launch of a specialized journal, i.e. *Experimental Economics*, by Charles Holt in 1998. In 2015, the *Journal of the Economic Science Association* was also launched to validate the experimental method via the publication of replication studies, robustness tests, meta-analyses, as well as studies using validated protocols, even when the results were not significant¹⁹. Experimental economics became fully recognized in the discipline when the Nobel Prize in Economics²⁰ was awarded to Vernon Smith in 2002 "for

18. <https://www.economicsscience.org/> (queried on 30/08/2021).

19. These initiatives aim to combat publication bias, i.e. the tendency to favour the submission and publication of articles with statistically significant results, with work with non-significant results being sidelined for being less easily promoted.

20. The full official name of the prize is: the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms” and to Daniel Kahneman “for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty”²¹. The contributions of V. Smith and D. Kahneman represent two main trends in experimental economics—the study of market institutions and the study of the rationality of economic agents. Other Nobel Prizes in Economics have since been awarded to specialists for work involving extensive use of experimental economics methodology, including Elinor Oström in organizational economics (2009), Alvin Roth in game theory (2012) and Richard Thaler in behavioural economics (2017).

►► Methodological approach to experimental economics

Experimental economics has the same methodological foundations as scientific experimentation. Like researchers assessing the effects of injecting chemicals into test tubes, the aim here is to monitor people and test the effects of external shocks under controlled environmental conditions. For instance, if we want to assess the impact of an organic label on people's willingness to pay (WTP) for a food product, we would compare a non-organic food WTP with that for the same food with an organic label. With all other aspects being constant, the difference in WTP would reflect the impact of the organic label. Experimental economics is based on precise methodological principles regardless of the issue being tested. Here we will first define experimental economics and then present its aims and the principles that underlie economics experimentation. Then we will specify the components of an experimental procedure and explain the nature of a treatment. Thereafter will outline the framework for two types of food experiments and conclude by highlighting some of the issues to be considered.

Definition

An economics experiment consists of studying people's behaviour, i.e. experimental subjects, by simulating a simplified economic situation in a controlled environment. From the outset, economics experiments have been focused on studies of three types of behaviour: individual decision making, decision-making with strategic interaction, and decision-making in impersonal exchange situations, i.e. via market-oriented institutions. To date, food behaviour studies have mainly been conducted through individual decision-making experiments. We will focus on studies of individual decision making hereafter in this chapter. In this specific setting, experimental economics enables assessment of preferences of consumers by placing them in choice situations, as well as measurement of the impact of explanatory variables, e.g. price or supply, on consumer purchasing decisions.

Objectives

Experimental economics has three objectives (Roth, 1988): to test the theory so as to identify mechanisms that current models have not predicted; to generate facts that will help pinpoint behavioural regularities so as to integrate them into existing theoretical

21. <https://www.nobelprize.org/prizes/economic-sciences/2002/summary/> (queried on 30/08/2021).

models; and to construct a new theoretical model. The first two objectives are interdependent and mutually supportive, while the last one provides decision-making support by testing the implications of setting up a new organizational or institutional mechanism. Experimental economics thus enables assessment of the impact of the implementation of various public policies, such as information policies (labelling, labels, messages), or the introduction of a tax or subsidy.

Principles

Experimental economics is based on four principles: control, replication, financial incentives and no deception.

Investigators control all the variables, i.e. controlling the variables of interest and their values allows measurement of their impact on the subjects' behaviour under perfectly identical conditions (*ceteris paribus*), while controlling variables other than those of interest but that may have a bearing on behaviour enables consideration of their potential influence. Through this control, investigators may identify the factors that have given rise to the observed phenomenon and thereby identify the causal effects of the studied mechanism. This is referred to as the internal validity of the experiments.

An economics experiment must be designed to be replicable by other researchers. The experimental protocol therefore has to be described and explained in detail. The replication of experiments with minor differences enables testing of the robustness of the results obtained in the initial experiment.

One of the features of economics experiments (especially compared to psychology experiments) is the use of financial rewards that are offered to test subjects according to their decisions in the experiment—these decisions thereby have real consequences. Financial incentives aim to foster real behaviour from the subjects, thus reflecting true preferences. Without financial incentives, test subjects might be tempted to choose randomly between several options or make decisions according to criteria unrelated to their true preferences (desirability bias). In experiments designed to study dietary behaviour, it is very important that the subjects' choices have real consequences, such as the actual purchase of products so as to highlight their true preferences for the products offered. Financial incentives can be implemented in two ways (all subjects are informed at the outset of the experiment): either all subjects or a few subjects drawn at random at the end of the experiment see that their decisions have real consequences. Subjects may also receive participation compensation, which is independent of their choices (unlike incentives), while being very useful when the experiment generates losses and not gains (risky choices, purchase of goods).

Deceiving participants is an unacceptable practice in experimental economics—test subjects cannot be given false information. For example, it is unacceptable to give false instructions, use enablers, or lie about the payoff. This ensures that participants know that their choice decisions in the experiment will have the actual consequences described by the investigator at the start of the experiment, thereby guaranteeing revelation of their true preferences. This rule is strictly enforced to avoid contamination of participants in future experiments who may—if they feel that the information they are given is misleading—make decisions that do not reflect their true preferences.

Experimental protocol

According to Smith (1982), the experimental protocol is based on three elements: the environment, institution and outcome.

The environment of the experiment corresponds to the set of initial circumstances of the experiment. This includes the type of subjects involved and the set of their characteristics in the experimental context, depending on the focus of the study. These criteria can be their socioeconomic situation (age, gender, professional category, income, etc.), geographical situation (place of residence, place of work, etc.), educational level (degree, discipline, etc.), as well as eating habits (typical meals, meat consumption, cooked or uncooked dishes, etc.). Subjects' characteristics in the experimental context include the initial endowments offered to them (money, products, no endowments, etc.) and the technologies they have to use (computer, paper-pencil, etc.).

The institution corresponds to the rules of the experiment, including the type of task required of the subjects (effort, lottery choice, product purchase, etc.) and the course of the experiment (number of games, task order, etc.). At the outset of the experiment, the investigator gives instructions to the subjects describing the host institution. These instructions are given in the same way to all subjects in the experiment so that everyone will be aware of the same rules. The experiment only starts after all subjects have understood these instructions, while the investigator asks a few comprehension questions to ensure that the instructions are clearly understood.

The outcome corresponds to the investigator's observations of the subjects' decisions and choices throughout the experiment. The investigator must ensure that he/she has monitored all variables of interest so as to be able to address the target question of the study. The outcome is a result of the environment and institution of the experiment.

Treatments

A specific environment associated with a specific institution is a treatment, i.e. a term derived from clinical medical trials. To test the effects of a medical treatment, part of the sample is subjected to the treatment and the effects are compared with an untreated (placebo) group. The same principle is used in experimental economics. The investigator changes the environment or institution between treatments. To monitor these changes, it is highly recommended that only one change be made at a time so as to isolate the effects of the change. The investigator is thereby able to measure the causal impact of one aspect of the environment or institution on the outcome. Let us consider a research study on the impact of an organic label, i.e. its impact on consumer preferences for cartoned semi-skimmed milk. A relevant experiment here would be to assess the monetary value that subjects²² place on a litre of semi-skimmed milk with an organic label and, under *ceteris paribus* conditions, on a litre of semi-skimmed milk without this label. The value attributed to the organic label is then obtained by the difference between the values attributed to the two milks (organic and non-organic).

When designing a protocol, an investigator can basically choose between two different formats, i.e. between- or within-subject comparisons.

Inter-individual comparisons refer to situations where each subject participates in a single treatment. In our example, one group of subjects estimates organic milk while

22. See the 'Valuation and choice experiments' section below.

another group estimates non-organic milk. In this case, the subjects assigned to the two treatments should be as similar as possible to ensure that the between-treatment comparison will be able to identify the causal effects of the organic label on the outcome. Yet it is very hard to build two perfectly comparable samples, even when a questionnaire survey precedes the subject recruitment step. Conventionally, subjects are therefore randomly assigned by chance to the different treatments. If the sample size is large enough, then the unobservable factors that characterize the subjects should be evenly distributed across treatments.

Intra-individual comparisons are also possible. Each subject participates in several treatments sequentially. Hence, in our example, the same subject successively estimated organic and non-organic milk. Sample comparability was therefore no longer an issue since the same subjects participated in the different treatments. Yet another problem surfaces, i.e. the order effect. The task order may have an impact on the results. The estimates of our milk bricks could have differed depending on whether the organic milk was assessed first or second. The investigator must thus make sure that the treatment order does not alter the behaviour. This order effect is often controlled by randomly proposing the treatments in all possible orders according to the subjects²³.

► Valuation and choice experiments

Experiments designed to study individual decisions reveal subjects' preferences for different food products with different attributes. The two main categories are valuation experiments and choice experiments.

In valuation experiments, the investigator assesses the willingness to pay, i.e. the maximum amount an individual is willing to pay for a product or product attribute. It should be kept in mind when assessing the willingness to pay that subjects' decisions have real consequences—a key precept in experimental economics. The product purchase is the consequence here. Auction mechanisms such as Vickrey auctions or the Becker, DeGroot and Marshak (BDM) mechanism are regularly used for sales (see Lusk and Shogren, 2007, for an overview of the method). These auction mechanisms reveal the subject's true preferences since it is in the participants' interest to offer an amount matching what they are willing to pay. Let us take the BDM mechanism and our organic milk carton as an example. Subjects declare the maximum amount they are willing to pay for the milk carton. At the end of the experiment, the investigator draws a price from a set of prices set before the experiment. If the maximum amount the subject is willing to pay for the milk carton is less than the price drawn, then they do not buy the carton and they pay nothing. If, conversely, the amount declared is higher than the price drawn, then the subject buys the carton and pays the price drawn. So it is in the subject's interest to reveal the true amount he/she is willing to pay. Indeed, if the subject overestimates his/her willingness to pay, then he/she runs the risk of buying the milk brick for more than what he/she really considers it is worth. Otherwise, if the subject underestimates it, he/she runs the risk of not buying the brick at a price that is lower than what he/she is willing to pay.

In choice experiments, subjects must choose between products that differ in terms of attributes and price. This is a more natural task than in valuation experiments,

23. As a particular order is sometimes natural (provision of information, simple situation prior to a complex situation, etc.), only one order is proposed in such cases.

i.e. it is easier to choose a favourite product from a set of products with displayed prices (as everyone does regularly in supermarkets) as compared to estimating a threshold amount at which we would be willing to buy the product. However, when assessing the willingness to pay by this method subjects are asked to choose from multiple price combinations. A statistical analysis of the set of choices can then be conducted to determine the subject's willingness to pay for a particular attribute (Louviere et al., 2000). In our example, the subject is offered a carton of organic milk and a carton of non-organic milk and asked to choose his/her preferred option for different price combinations. At the end of the experiment, the investigator draws a choice situation and the subject's choice is applied—if he/she has chosen a carton of milk then he/she buys it at the indicated price.

Valuation and choice experiments are used to assess people's willingness to pay for a specific food product or attribute. These experiments may also be implemented to study people's diets (or food baskets), as we will see in the example presented at the end of the chapter (see the section 'An application example: financial incentives and food baskets').

► Concerns and limitations

The issue of the external validity of experimental results is an experimental economics limitation that may impact the study of food consumption and practices: are individuals' decisions in experiments an accurate indicator of their behaviour in real economic environments? Steven Levitt and John List (2007) criticized the artificial nature of laboratory experiments, which may generate results that differ from those that could potentially be obtained in an *in vivo* economic situation. The first point they make is that experiment participants know that they are under the scrutiny of investigators and hence may adapt their behaviour to satisfy them. Second, they highlight the importance of context, which will differ between the experiment and the real economic environment. Third, they point out that individuals freely choose to participate in an experiment and this volunteer selection process may bias decisions they make in this setting. Finally, they question the role of financial incentives, the extent of which may not necessarily be comparable between the experiment and the real economic environment.

Efforts have been made to address this external validity issue by contextualizing experiments (Harrison and List, 2004). More contextualized experiments have emerged, such as controlled field experiments, where the subjects belong to the target population and the environment reflects the studied issue. Studies involving behaviour monitoring in natural experiments have also emerged, whereby subjects perform a task in their usual environment without knowing that they are participating in an experiment and without any investigator intervention. The investigator simply monitors the decisions made in the different treatments that have naturally been set up by public policymakers or private actors. However, it is increasingly common for policymakers to decide on how to implement certain measures in collaboration with researchers so as to create a natural experiment that will generate treatment effects that can be tested²⁴.

24. For instance, researchers were reported to be involved in the implementation of a direct mail fundraising campaign by the University of Florida to equip a research centre with computers. The researchers proposed several versions of the campaign—with requests sent out at random—to test the impact of the level of funding already received on the amount of contributions. The findings indicated that an already secured increase of 10-67% in the amount of funding boosted contributions by sixfold (List and Lucking-Reiley, 2002).

While experimental contextualization may enhance mainstreaming of the results (external validity), it often reduces the control of explanatory variables and thus the investigator's ability to infer causality (internal validity).

► Ethical and legal aspects

In France, experimental economics laboratories depend on research laboratories, i.e. often joint research units (UMR), associated with universities and national research institutions (CNRS or INRAE). Financial incentives are often paid to subjects in cash, so experimental economics laboratories generally have a petty cash fund for this purpose.

Non-deception is one of the core requisites of experimental economics. Investigators must be certain that the subjects who are to participate in their experiment are aware of this condition. This problem may be encountered when participants are also involved in studies in other disciplines that use deception (e.g. psychology).

As with any research involving individuals, the data confidentiality issue also arises in experimental economics. Subjects are guaranteed anonymity in economics experiments. First, subjects are given a code and the decisions they make during the experiment cannot be associated with their identity, even by the investigator. The subjects' identities are never mentioned in the experimental data files. Second, subjects do not know the identity of other participants in the experiment, unless that is the focus of the study. As experiments generate personal data, in Europe they must comply with the EU General Data Protection Regulation (GDPR).

Moreover, a growing number of entities, such as scientific journals and research funding agencies, require experimental protocol validation by ethics committees. These ethics committees are usually established locally by universities or public research foundations and the members include researchers from different disciplines that commonly conduct experimental studies with humans. Investigators must submit their experimental protocol to the committee, which checks that the procedure does not raise ethical issues.

Finally, some investigators are now posting their study protocol and objectives on online platforms. This guarantees that the results analyses are in line with the problem studied, thereby preventing researchers from claiming to have sought to address a different problem on the basis of the results obtained.

► Interdisciplinary scope of the experimental method

Experimental economics can contribute to a holistic approach to food and eating behaviours. The experimental method is used in other disciplines, especially in food science (sensory analysis and nutrition science). Experimental food science studies focus largely on sensory analysis and individual preferences with regard to different sensory attributes of food products. Economics experiments complement these studies by incorporating the economic dimension and assessment of subjects' willingness to pay for food products according to their attributes (Lange et al., 2002).

More broadly, food behaviour is experimentally studied by researchers from different disciplines, e.g. neuroscience, psychology, marketing and sociology. Figure 4.1 illus-

trates the connections between experimental economics and other disciplines in studying food behaviour.

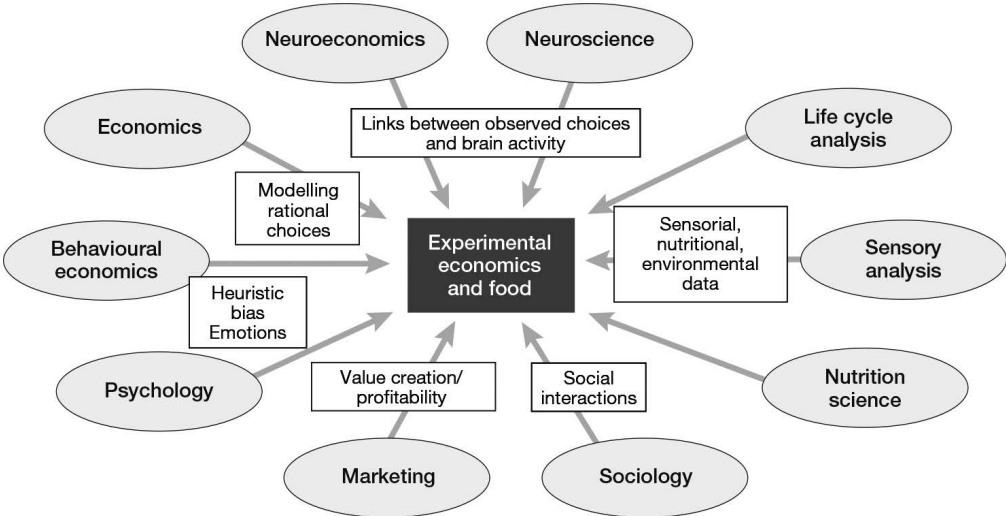


Figure 4.1. Experimental economics and contributions from other disciplines.

» An application example: financial incentives and food baskets

As a practical example of the method, we will discuss an experimental study that aimed to assess the impact of a policy of taxing ‘unhealthy’ products and subsidizing fruit and vegetables and ‘healthy’ products on the nutritional quality of people’s diets and on the prices paid. This study was conducted by Laurent Muller, Anne Lacroix, Jayson Lusk and Bernard Ruffieux (Muller et al., 2017) to address the issue of the growing obesity rate in France.

This study complied with experimental economics principles (control, replication, financial incentives, no deception). We outline the experimental protocol chosen, including the environment, institution, outcome, type of treatments and financial incentives, as well as their implementation.

Environment

The study focused on food choices of 20-50-year-old women in a low income bracket, where obesity is known to be highly prevalent. Recruitment was therefore based on these criteria. A control group of women in the same age range and income bracket was also included. A total of 160 women between the ages of 20 and 52 participated in the experiment, including 103 in Grenoble and 57 in Lyon, France. The average monthly income was €572 for women in the lowest income bracket and €1,459 for the others. Twenty-one experimental trials roughly 2 h long were conducted. Subjects were recruited through a recruitment agency, but also via health centres in Grenoble, *Secours populaire* and *Secours catholique* charities in Lyon, as well as socially-responsible grocery shops. Figure 4.2 shows an example of a recruitment flyer distributed in Lyon.



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Figure 4.2. Flyer distributed to recruit volunteers.

Institution or ground rules

The investigator provided instructions to participants at the beginning of the experiment, while explaining the task they were to perform. In this experiment, they had to plan a food day by selecting food products for the next day from among those proposed according to their prices. The choices were made online. A total of 180 products were available. These products were displayed on a computer screen in an easy-to-use tree structure. The products were classified in product categories according to their nutritional composition: fruit and vegetables, 'healthy' products and 'unhealthy' products. These were low-end French supermarket products. Figure 4.3 shows how the products were displayed on the screen.

Before the task, subjects were asked to declare their sociodemographic characteristics with a 24-h recall period, i.e. all food items consumed the previous day. After the task, they were asked to answer both a consumption frequency questionnaire and a health questionnaire.

Results

In this experiment, the investigator monitored the nutritional quality of the subjects' food choices and the amount spent on the selected items.



Figure 4.3. Example of products (dish portions) offered to respondents.

Type of treatments

The procedure was based on within-subject comparisons. Subjects participated in several phases sequentially throughout the experiment. They had to select food products to be consumed the next day according to online prices of the target supermarket (phase 1); a 30% price decrease for fruit and vegetables (phase 2); a 30% price decrease for 'healthy' products and a 30% price increase for 'unhealthy' products (phase 3). A comparison of the food choices, i.e. the nutritional quality of the selected products and the amount spent, of respondents in phase 2 and phase 1 revealed the impact of implementing a subsidy policy geared towards reducing fruit and vegetable prices by 30%. Otherwise, a comparison of respondents' choice decisions between phases 1 and 3 highlighted the impact of implementing a subsidy/tax policy with a subsidy on 'healthy' products and a tax on 'unhealthy' products.

Financial incentives

Subjects were offered a cash lump sum at the beginning of the experiment. Their food choice decisions in the three phases had real consequences. At the end of the experiment, one of the three phases was drawn by the investigator and the subjects in the session bought the products they had selected at the prices displayed in the draw phase. The subjects left with the products they had purchased. The amount of cash they received at the beginning of the experiment was calculated so that each subject left with cash in their pockets. Figure 4.4 shows the food items displayed for sale to the subjects.



Figure 4.4. Food products for sale.

This experiment revealed a consumption structure effect, i.e. low-income women consumed more ‘unhealthy’ products and less ‘healthy’ products. Hence, due to their choices, they benefitted less from the ‘healthy’ product subsidization, while facing higher overall taxation for their consumption. A policy responsiveness effect was also noted, i.e. low-income women were less responsive to policies. This lower sensitivity to price changes could be explained by behavioural effects such as consumption patterns. According to the experimental results, this type of subsidy/tax policy was therefore doubly regressive from a fiscal standpoint.

►► Tailoring the method to the context

The experiment exemplified in the previous section was also chosen to showcase the importance of tailoring experimental protocols to the study context. One of the difficulties of this experiment concerned the study population, i.e. some subjects were unfamiliar with computers, which could have made them panic during the decision phases. Several people were thus present at the investigator’s side to assist the respondents. This difference in treatment between the low tax bracket sample and the control sample jeopardizes the strict *ceteris paribus* principle by generating greater desirability bias²⁵ for the assisted subjects. The conclusions may thus be weakened if this bias is not taken into account in the results interpretation. More generally, the investigator must adapt to the type of subjects present in the experiment so as to ensure that, prior to the experiment, these respondents will understand the instructions and the attribution of payment or purchase of products. The investigator should also adapt the equipment used in the experiment, e.g. avoid computer-based tasks.

Recognized good experimental economics practices should be followed. Yet the existence of the different types of experiments described above (Harrison and List, 2004) already highlights the adaptability of experimental economics to the study context.

25. Conscious or unconscious willingness to behave in a way as to give a good image of oneself to the investigator.

The extent of adaptability is even greater because each experiment is designed by the investigator to study a specific context, so it is actually tailored to that context. The investigator must be inventive in order to create an experimental protocol that is best suited to questions addressed in the study. This is particularly true when applying the method to assess food consumption issues. The food products may also generate constraints for the researcher due, for instance, to their perishable nature (logistics) and the management of food preferences and prohibitions (allergies, philosophical or religious positions). Moreover, it may also be hard to adapt the method to a large study population that may not always be fully at ease with the instructions associated with the study procedures.

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Chapter 5

Subjective food wellbeing assessment: how eaters rate their food

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The wellbeing eaters attribute to their food can be assessed on the basis of how they experience the different associated situations over a given period. Such assessments shed light on the range of criteria food eaters rely on to appraise their wellbeing in relation to the many food aspects, while also clarifying the overall role of food in wellbeing.

Contemporary research on food wellbeing stems from very long-standing philosophical considerations that would be impossible to outline here. Note, however, that beyond the difficulties in coming up with a definition of this phenomenon, what we now call happiness long corresponded—from Ancient Times to the 18th century—to a virtue related to wisdom, before being linked to pleasure from the Age of Enlightenment onwards, and then more recently to wellbeing (Diener, 1984). It was not until the latter half of the 20th century that wellbeing became recognized as an empirical and systematic research focus. Thereafter the topic was taken up by economics and ‘positive’ psychology researchers, whereas the strictly material and quantitative development aspect was challenged. Throughout this chapter, happiness is understood as being a lasting, pleasant and balanced state of spiritual and physical fulfilment, while taking into account both its hedonic (satisfaction with experienced emotions, i.e. subjective wellbeing, in nutritional terms) and eudaimonic (contentment with one’s life and the overall relevance of food) dimensions. Hereafter the terms satisfaction and wellbeing will solely refer to this first (hedonic) dimension of happiness.

What everyday life conditions are necessary to be happy, and what are the determining factors? How does the satisfaction or wellbeing derived from everyday experience shape overall life satisfaction? These questions are now being addressed via social science research methods and tools, while also being applied to food, although the specific interest in ‘food wellbeing’ is more recent, and the methods used often involve adaptations of tools for measuring overall wellbeing.

This chapter presents and puts into perspective different methods of assessing food wellbeing, while being focused on respondents’ self-perception of food wellbeing and the different methods for measuring it.

► Wellbeing as a research focus

Wellbeing could be seen as a state linked to various more or less external factors: health, social/economic success, pleasure, self-fulfilment, harmony with oneself and others. It should therefore be differentiated from the sensation of pure pleasure and the state of happiness. This notion of wellbeing currently prevails in many fields, e.g. education, health, and even business.

The economics of happiness is a branch of economics based especially on the seminal work of Easterlin (1974)—it is primarily geared towards the definition and objective measurement of social wellbeing. Economics and political science research on the quality of life has gained considerable ground since the 1970s on the basis of socioeconomic indicators, such as the Human Development Index (HDI) and other indicators proposed by the Organisation for Economic Co-operation and Development (OECD)²⁶. From this standpoint, wellbeing and quality of life largely depend on purchasing power, as well as on situations encountered in economic/political liberalism and health domains. In psychology and medicine, quality of life refers to a person's view of various aspects of their physical, social and psychological wellbeing, and can be assessed by standardized gauges, e.g. quality of well being (QWB), Nottingham Health Profile (NHP), sickness impact profile (SIP), etc.

Recent attempts to develop growth indices that are more representative of wellbeing than just the gross domestic product (GDP) and gross national product (GNP) have defined wellbeing as a complex multidimensional phenomenon (Stiglitz et al., 2009a and 2009b), and the use of subjective wellbeing measures is firmly recommended. The cultural dimension, however, is often the dark side of wellbeing economics, which makes it essential to take the local cultural context into account. Economists and psychologists currently conducting scientific research on happiness have proposed the term subjective wellbeing, i.e. individuals' self-assessment of their lives (Diener, 1984). Subjective wellbeing components include a cognitive aspect, i.e. life satisfaction, as well as an individual's overall judgement of his/her life, satisfaction related to salient life domains, in addition to the prevalence of positive affect and a low level of negative affect in everyday activities. Self-assessment of minor emotional episodes is less subject to heuristic bias than that of major episodes, which people tend to match against their general beliefs and ideologies. By this definition, individuals are the best judges of their own happiness, which is far removed from the ancient and classical elitist notions of happiness.

While individuals differ in their overall wellbeing level, each person's affective experience shapes his/her overall level of satisfaction, even though this may vary substantially over the course of a day depending on the activities in which the individuals are involved and the prevailing social context. The wellbeing level is dependent on the

26. HDI, which was created in 1990 and adopted by the United Nations Development Programme, pools several human development indicators (per-capita GDP, life expectancy, average adult education level, etc.). Countries are thus classified according to development levels rather than strictly economic criteria. OECD is an international organization founded in 1948, which groups member countries committed to principles such as democratic government and the market economy. It publishes numerous reports on economic development and the effects of public policies, and produces economic and social indicators and measures of subjective wellbeing, e.g. the Better Life Index, which includes subjective wellbeing among a dozen macro-social dimensions (income, housing, education, environment, etc.).

extent of satisfaction derived from different activities—individual happiness on a given day can thus be defined by the average of affects experienced during the different activities, while considering their relative duration, as is generally the case for food. Many studies have demonstrated the role of social relationships and interactions in the subjective wellbeing of individuals.

Several methods can be used to determine a person's happiness level. Firstly, a person can be asked one or more questions about his/her overall level of happiness (e.g. "are you generally satisfied with your life?")—these methods are geared towards determining a person's degree of life satisfaction, e.g. the Satisfaction With Life Scale (SWLS), which involves seven questions (Diener et al., 1985). A person can also be broadly asked how he/she appreciates a given activity—this method was applied in early American and European time-use surveys, e.g. Eurobarometer surveys.

The level of satisfaction gained from an activity can then be assessed in real time using instant information retrieval methods, e.g. the experience sampling method (ESM). The latter may be the ideal experimental method for assessing affect during an activity, but it is impractical to apply with large samples due to the high cost of its implementation and the tedium involved in having respondents assess their affect randomly over the course of a day or week. The event reconstruction method (ERM) can also be used to not overlook reporting low-frequency events at the individual level—this method captures respondents' feelings about the most recent episode in a series of activities, including the most infrequent. However, contrary to the previous approach, the risk is that the memorization of infrequent (and therefore temporally remote) events may be subject to high cognitive bias.

The so-called Day Reconstruction Method (DRM) developed by Kahneman et al. (2004) is a good trade-off. It is designed to collect recent retrospective data (usually from the previous day) on respondents' affects during their various daily activities, including eating activities. The DRM protocol is based on a questionnaire consisting of several booklets. Respondents are first asked a series of questions about their overall satisfaction. Then they are asked to reconstruct the sequence of episodes of their previous day, including food activities in the broad sense (from the production or availability of resources to their consumption, including their preparation), while differentiating each episode according to the activity performed. Each episode is temporally qualified by its start and end time, and episodes can include 'focal' activities (e.g. 'eating'), 'multiactivities' (e.g. 'watching TV' and 'chatting'), with the possibility of subjectively classifying one activity as being the 'main' one. Respondents are then asked questions about where the episode took place, whether they were alone or not or verbally interacting with anyone (who they had to identify), and the emotions they experienced during the episode by noting a list of 10 positive/negative affects on a Likert scale. Finally, they are asked to answer questions about the joys and sorrows they experienced in relation to a list of activities (including food-related activities) and about their perception of their own health. The questionnaire can be administered to respondents individually or in groups (each respondent fills it out individually), and it takes 45–60 min on average.

Surveys conducted to test the DRM reliability revealed that overall life satisfaction issues may be influenced by daily events or information gaps. Conversely, assessments of affective episodes for daily activities may be less subject to such cognitive bias and

they have the added benefit of aggregating different activities and their related affects for a given day. Finally, comparative surveys have highlighted that the differences are generally more intracultural (between age and gender groups) than intercultural.

► Food wellbeing measurement

As with the life satisfaction and overall wellbeing assessment, food satisfaction assessment can involve two types of measurement, i.e. an 'objective' approach based on *ad hoc* indicators (e.g. individual and social criteria, such as the amount spent on food and its income share, household cooking equipment, food availability, type, variety and origin of food consumed, level of nutritional insecurity, etc.), and a 'subjective' approach based on individual self-assessment.

The latter subjective food wellbeing measurement may be based on cognitive components (a person's appraisal of his/her extent of satisfaction with various food-related factors, his/her dietary satisfaction) and affective components (related to his/her perceived affects). Subjective food wellbeing measurement can also be global in scope, i.e. related to food in general, or detailed, i.e. focused on different aspects of food, such as the type and variety of food and the way it is provided, prepared, cooked and consumed.

Relevance of food in wellbeing assessment

Food and related activities were not measured separately in life satisfaction and wellbeing assessments until the 2000s. The food aspect of wellbeing has thus long been overlooked, despite its importance in people's lives in terms of time, necessary resources (personal and economic) or symbolic and cultural dimensions. Assessments on the impact of food on quality of life were first conducted in the health field, i.e. in clinical studies on diabetes, cardiovascular and renal diseases, and then from a strictly nutritional perspective (Jackson et al., 2005). Dietary patterns linked to diseases were thus the focus of the first studies, based on the belief that a poor diet had harmful effects on people and their wellbeing.

The first assessments were essentially nutritional in scope, while combining objective indicators and subjective assessments of wellbeing and being both in general and specifically targeted towards economic, psychological and health domains, but without including specific questions on food assessment. This was the case for the Nutrition Quality of Life Survey (Barr and Schumacher, 2003), the household food insecurity score of Frongillo and Nanama (2006) focused on nutrition insecurity, as well as the Quality of Life Factors Questionnaire (Corle et al., 2001), and the Health-related Quality of Life index 4 (Guyatt et al., 1993).

Subjective food wellbeing

In addition to complementing the objective dimension of food wellbeing via individual or collective indicators, a subjective food wellbeing approach may be implemented to fulfil several objectives. Food may thus be (re)considered as a factor of individual wellbeing, as highlighted by happiness economics (Veenhoven, 1995; Barr and Schumacher, 2003; Kahneman et al., 2004), thereby broadening the scope of food assessment based solely on biological issues (quantities, qualities) so as not to take for granted a 'nutritional rationality' of individuals in terms of their food experience. Food is thus recognised as being a multidimensional experience.

Finally, the notion of food wellbeing, which is focused on people's feelings about their food experience, helps incorporate the subjective viewpoint and eaters' emotions into the analysis of their eating behaviour and its determining factors. This circumvents the difficulties and pitfalls of normative determination (e.g. in the case of food safety measures) since each individual is considered to be the only one who can judge his/her dietary situation and his/her food-related life according to his/her own criteria and priorities. It also recognises that interviewed people's opinions are no less worthy of consideration than those of experts with regard to issues that directly concern them, such as their diet.

Subjective food wellbeing assessment

Given the nutritional and objectifying aspects of food wellbeing assessments, an assessment focused specifically on food-related satisfaction, without including it in other more general domains, seemed necessary. This is the thrust of the Satisfaction with Food-related Life Scale (SWLF) tool (Grunert et al., 2007)—it is a food-oriented adaptation of the SWLS tool based on seven general questions on food-related satisfaction: “food and meals are positive elements in my life”; “when I think of my next meal, I only see problems, obstacles and disappointments”; “I am generally pleased with my food”; “food and meals give me satisfaction in daily life”; “my life in relation to food and meals is close to my ideal”; “I wish my meals were a much more pleasant part of my life”; and “with regard to food, the conditions of my life are excellent”. This helps identify objective factors not related to food that influence the food satisfaction level, and determine the extent to which it is correlated with overall life satisfaction and related domains. Further questions may focus on the reasons for the perceived food satisfaction levels, and tangible changes in the food situation to enhance satisfaction. Food satisfaction measurement consistency tests have proved to be robust and consistent.

This scale may be subject to the same criticism as the SWLS, i.e. it is based on general and abstract perceptions, as satisfaction assessments are biased by sensitivity to the eater's emotional state at the time of the survey. To overcome this bias, some studies suggest grounding the subjective assessment in concrete terms by basing it on the recall of recent lived experiences, as proposed in the Day Reconstruction Method (DRM).

The use of DRM via assessment of affective episodes of the previous day's activities in a given situation facilitates the extraction of all food-related activities: production (fishing, farming, gathering, hunting, donations and exchanges, purchases, etc.), preparation (cleaning, storage, chopping, pounding, etc.), cooking (culinary preparation, cooking methods, etc.), as well as consumption and its different forms (alone or in a group, on a daily basis or in a festive setting). The episodes can have food as a ‘focal’ activity, involving ‘multi-activities’, or otherwise as a secondary activity. The aim is to measure the impact of three criteria that determine the level of perceived food wellbeing: people's social traits, the extent of interactions involved in eating, and the way people experience and feel about their daily eating activities (Kahneman et al., 2010), and their detailed food satisfaction.

Two case studies: Rapa (Austral Islands) and Mali

The practical aspect of subjective food wellbeing assessment and of adjustments necessary in a survey setting has been addressed through two research studies, both of which took

a different stance on the food issue: 'global', on Rapa Island²⁷, by taking the food system overall into account (from the production of food resources, their provision and preparation, to their consumption and its different forms) and by placing food activities within the context of all other daily activities; and 'detailed' in Mali²⁸, by looking at activities linked to food consumption (food supply/preparation/consumption, tea sharing).

In both cases, the DRM principle was used by describing all activities of the previous day (Rapa), or by focusing only on activities related to food consumption (Mali), and by assessing, for each identified sequence, the indicators specified in the original method for Rapa (emotions and satisfaction), or only the level of satisfaction experienced and its determining factors (with additional open-ended questions to substantiate the reported levels) in Mali.

Regarding the use of these instruments—as with any subjective wellbeing assessment—it is important to avoid biasing the assessment by not mentioning 'wellbeing research' when presenting the instruments to the survey respondents. The assessment was therefore incorporated in broader research on the role of food in various daily activities (Rapa) or on nutritional insecurity (Mali), and the surveyed populations (or at least their representatives) were asked to provide feedback upon completion of the survey. In both cases, the source French questionnaires were translated into the local vernacular languages and then retranslated into French to ensure that the translation was in line with the intended meaning in French.

For the Polynesian fieldwork, the DRM questionnaire had been tested on about 30 people in French Polynesia and tailored to the local features (especially the questions on the type of accommodation, socioprofessional categories, etc.), and then to those of Rapa Island (regarding everyday activities). The questionnaire was designed to be self-administered by groups of active urban people so it was hard for people on a rural island like Rapa to answer it in the same way. It was quickly apparent that filling in the questionnaire was long and tedious for some respondents (up to 2 h), so it was sometimes necessary to translate it into the Rapa language, especially to ensure that it would be understood by elderly respondents.

Similarly, the questionnaire was tailored to the context in Mali. The assessment of affects per food sequence was thus finally abandoned, as this part of the survey proved to be very long and tedious. Moreover, from a conceptual standpoint, a common assessment for all the study areas (three population samples were involved) was highly controversial. What emotions should be assessed? How could those related to food be selected while ensuring that they could have a meaning (and the same one) for the different populations? How could they be translated? We therefore opted for an assessment of food satisfaction experienced per food sequence, supplemented by open-ended questions to explain the declared level of satisfaction and highlight aspects that could have helped boost this satisfaction.

27. Research on the food practices and representations of inhabitants of Rapa Island (Austral Islands) conducted via fieldwork over a 7-month period between 2009 and 2011, based on individual and group interviews, food service monitoring, and a quantitative survey conducted among 70% of the Island's adult population using the DRM (Qualirapa project funded by the French National Research Agency (ANR), reference ANR-09-BLAN-0360-02, Edgar Morin Centre, IAAC, Paris).

28. Interdisciplinary research on food culture in the migration context in rural, urban and immigrant populations in Morocco and Mali (Alimi project funded by the French National Research Agency (ANR), Edgar Morin Centre, IAAC, Paris; UMR MoISA, Montpellier; CERTOP, Toulouse; UMR Nutripass, Montpellier).

In Rapa, we often called upon two people who had a perfect command of French, Tahitian and Rapa to help the respondents fill in their questionnaires—this was done after administering the questionnaire to these assistants and training them on how to fill it in. It would thus be essential to adapt questionnaires to the type of population surveyed, while simplifying them substantially for rural populations and/or those with a low level of education, even though this may complicate international comparisons. Another solution is to use interviewers who orally query the respondents and then fill in the questionnaire for them directly. This was the preferred solution in Mali, where the survey was conducted amongst people with a high illiteracy rate.

Advantages and drawbacks of the tools

In addition to the general elements concerning the organization of daily activities and their perceived wellbeing level, the DRM contributions essentially concerned the relative level of wellbeing felt during food activities, while differentiating them according to their nature: food production, provisioning and exchange, advance preparation and storage, as well as culinary preparation and food consumption activities. For instance, the pivotal role of social food provisioning in the development of an especially high level of wellbeing was demonstrated in Rapa (Serra-Mallol, 2018), alongside the importance of social interactions in the extent of wellbeing experienced during these food activities. Group provisioning (through farm work, gathering, fishing, etc.), collective preparation, and shared consumption at communal festivities (much greater than daily consumption) were among the most appreciated activities in terms of the positive affect differential (DIFMAX). Although meals were generally eaten quickly during the week in Rapa (88 min daily meal time/week, compared with 117 min in mainland France and only 52 min in the United States), eating was considered as being a key focal activity in 75% of cases in Rapa, compared to 56% of cases in France and only 30% in the United States, thereby reflecting the importance of the eating activity *per se* in Rapa.

In Mali, the variable chosen to serve as an indicator of experienced food satisfaction was a measurement that encompassed the entire previous day, i.e. overall experienced food satisfaction, rather than detailed food satisfaction which corresponded to the time-weighted average of food satisfaction levels of the previous day's episodes. An initial outcome was that the more people declared themselves to be generally satisfied with their previous day's food, the higher they rated their food sequences. Moreover, the survey findings challenged the idea that food security is the only determining factor of food satisfaction, i.e. the absence of food insecurity is not a food satisfaction guarantee or prerequisite (Lebrun, 2013).

In Rapa, misunderstandings and likely many non-responses were often related to imperfect French translations of affects into Tahitian and Rapa languages. For instance, as the feeling of stress does not translate literally into the latter two languages, vernacular words may have to be used which, although certainly precise, may imperfectly translate the meanings of these affects into French. Preconceived notions used, such as 'work' or 'employment', may be misunderstood or equivocal. Hence, in the responses regarding daily activities, when it came to coding the described activity, the activities 'subsistence work', 'fishing', 'handicrafts', 'gathering', or 'feeding domestic livestock' were not classified in the 'work' category, but rather as separate activities. Similarly,

when asked “what is your employment status,” several people classified themselves as unemployed, even though their days throughout the week were devoted to these different activities, in keeping with the Tahitian distinction between working the land and working for pay. Self-production was prized in Rapa, yet there was a distinction between these two meanings—the notion of ‘employment’ was strictly associated with the latter, while the former was regarded as an ‘activity,’ or even a ‘leisure activity’ (no equivalent in Tahitian and Rapa languages). Conversely, what may at first sight be deemed a ‘leisure activity,’ e.g. reading, may be perceived differently due to local customs—reading is not considered a leisure activity by Rapa people, but instead as a necessity that is partly associated with biblical reflection, and often limited to Bible reading. Similarly, spending time preparing fishing gear is not considered as a leisure activity, but rather as preparatory work for fishing. Fishing is not considered as a leisure activity even though it is certainly a source of pleasure, but also as a family subsistence activity and as a means to contribute to local community exchange networks.

In the same vein, the training of interviewers on administration of the questionnaire in Mali revealed a lack of understanding of the rating scale used to assess satisfaction. This scale—consisting of five smileys displayed in a supposedly universally recognized order—was confusing because the cultural interpretation of these icons turned out to be totally different from what was intended. For instance, the ‘happiest’ smiley in our interpretation could be seen as ‘neutral’ by some, i.e. as smiling and raising eyebrows, implying disconcert about the situation. The smiley scale was therefore replaced by a diagram scale, which the tests revealed to be easier to understand.

The types of responses provided must also be considered: the affect rating levels were biased by cultural influences, with some affects being under- or over-rated according to what was locally esteemed. It thus appeared that some affects were normatively ‘unacceptable’ for certain cultures (e.g. stress in Rapa), and others were ‘socially valued’ (e.g. being happy in Rapa). This explains the very high satisfaction and subjective wellbeing rates obtained in Rapa, particularly with regard to food, which was viewed as a social bonding factor through engaging activities, and as a guarantee of cultural sustainability based on ‘doing things together’ and the collective control of resources. Similarly, very high food satisfaction rates were reported in Mali, which were unexpected given the objective nutritional insecurity situations that had been identified on the basis of several conventional indicators: body mass index (BMI), diversity index, access scale measuring the food insecurity of households of the survey respondents. Following a number of tests carried out to check the reliability of the results (i.e. that the assessment method was clearly understood and reflected well founded and non-random responses), we feel that these results might partly have been due to a ‘cultural bias,’ e.g. optimism bias, social representation bias, or an impact of religious beliefs.

Because of its normative assumptions, an overly structured assessment tool will hamper the consideration of local variability and interpretation. The tool should thus instead be systematically implemented within a broader ethnological and methodological research framework that includes it while being relevant in the local setting. Responses to the qualitative questions on reasons for the reported satisfaction rate and ways of increasing it for each sequence enabled us to gain further insight into these outcomes in Mali by revealing—through econometric analyses (logistic regression)—that people’s objective

nutritional insecurity levels were just a minor factor in shaping their food satisfaction. In contrast, as expected, all of the other aspects (social, hedonic or identity-related) of food could influence people's views of their food experience, and the hierarchy of these aspects depended on the context/environment and personal preferences of the respondents. Hence, even in nutritional vulnerability situations, the biological function does not necessarily predominate. Similarly, through individual and group interviews and daily participant²⁹ monitoring, the 7-month ethnological fieldwork conditions in which the DRM study was conducted in Rapa helped shed light on the DRM responses, while placing food in its general context in terms of local social norms and values, the key role it plays in everyday activities, political issues and collective representations of Rapa people.

We therefore advocate a linkage between a quantitative and a qualitative approach to assessing subjective food wellbeing. We believe that this linkage is essential to embed the analysis of raw data from the subjective food wellbeing assessment tools in a comprehensive approach of broader scope. The quantitative data collected can thus be contextualized and interpreted in the light of the prevailing norms and values, and the specific mindset of the target community. Overall, this is an epistemological balancing act between the best possible account of the emic dimension (as defined in the introduction to this book) of the studied phenomenon and, otherwise, the calibration of subjective food wellbeing quantification tools, thereby ensuring that the outcomes obtained in surveys of diverse societies will be comparable.

In conclusion, there has been a marked increase in social science research on happiness and wellbeing in recent decades, yet the outcomes have not given rise to any clearcut definition or definitive indicators, and applications to food-related situations are very recent. An approach based on the notion of subjective food wellbeing seems highly promising since the perception of wellbeing in everyday activities and the self-centred scope of the assessment are taken into account.

Beyond its heuristic interest, subjective food wellbeing assessment showcases a food eater's normative framework in rating his/her diet, the 'experience frameworks', and the underlying criteria or determining factors, as well as the status and role of food in daily activities and in individual and social life. As a complement to objective indicators that do not adequately reflect the food experience, these tools place eaters at the forefront of the assessment through a phenomenological approach that takes the way these people experience, perceive and judge their own daily food activities into account.

Two main approaches have been presented here: a specific approach to determine levels of self-reported subjective food wellbeing and its relative relationship with the extent of food insecurity; and a more comprehensive approach to subjective food wellbeing and its drivers, as well as its importance regarding overall wellbeing perception. In both cases, the application of quantitative tools for assessing subjective food wellbeing was combined with qualitative and comprehensive approaches to ensure clarification—this involved the implementation of individual or collective semi-structured interview protocols, or even long-term ethnological fieldwork.

29. i.e. where the observer is involved in the life and activities of the monitored group (Serra-Mallol, 2012).

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Part 2

Tracking eaters and foods

Chapter 6

Ethnoaccounting: monitoring, counting and understanding what eaters value

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Ethnoaccounting aims to grasp eaters' meanings and appraisals regarding their personal food practices. It is rooted in an ethnographic approach (observations, informal exchanges, immersion in the daily lives of surveyed individuals) combined with assessments at all stages of the food consumption process (food weighing, drawing up consumption reports). Survey respondents are actively involved in knowledge production throughout the study.

Assessing what people value is the starting point of ethnoaccounting surveys, in keeping with an anthropological approach to assessments. These are shaped by a straightforward question—what matters in life?—as perceived, both individually and collectively, from within a group and its close circle of friends and family. What do people value? And what do they seem to care about?

These questions may seem very simple, but they challenge the most deeply rooted mindsets. So it is essential not to confuse measurement and evaluation when delving into the real ways of counting. In economics and social science, the two terms generally overlap: price-based measurement is assumed to directly express a kind of socially-instigated objective economic value. Subjective evaluations are thus overshadowed. This implies that “economic evaluations relate to the measurement of monetary aspects, while the remaining social life is nested in a setting marked by a plurality of values” (Cottureau, 2016). This compartmentalization is what the ethnoaccounting method highlights through an ethnographic approach to evaluation. By methodically describing the evaluation strategies, this ethnographic approach diverges from a purely economic definition of value and strives to descriptively reconstruct what wellbeing literally means. In this approach, the compartmentalization between economic and social facts is no longer viable—economic facts are perceived as a type of social facts.

The approach draws on the budgetary monographs published in *Les ouvriers européens* (Le Play, 1885) and *Les ouvriers des deux mondes* (1848-1930) that were produced by a group of investigators called the *Société internationale d'études pratiques d'économie sociale* (1857-1885) spearheaded by Frédéric Le Play.

“Their old accounts tables may no longer be understood today because their apparent empirical thoroughness belies an absolute refusal of conventional political economics, as expressed by an alternative approach with direct monitoring of the phenomena with the addition of special categories. This approach involves a kind of contextual accounting with *in situ* scientific measurement that does not rule out existing evaluations, irrespective of whether or not they lead to market transactions. In the more political terms of the day, their aim, as echoed here, was to replace ‘national wealth’ by ‘people’s wellbeing’ (Zaccaï-Reyners, 2015).”

While reaffirming this heritage, Alain Cottereau and Mokhtar Mohatar Marzok’s book, *Une famille andalouse. Ethnocomptabilité d’une économie invisible*, is based on the ethnoaccounting method. This ethnographic study focused on a family of Moroccan origin living in Andalusia (Spain), representing a trove of experience that enabled comparisons between the two sides of the Mediterranean: Mohammed, Fatima and their four children between 5 and 13 years old. The aim of the study was to highlight the prevailing ‘invisible’ economy, i.e. imperceptible to official institutions and statistics agencies, but obviously very tangible in the eyes of the communities concerned. The so-called multiple survey format was implemented by two inquirers. Mr Mohatar Marzok was living with the family to which he was related. He spoke both of the languages used in the household, i.e. Rifain and Spanish. He contacted A. Cottereau every evening and they spent 2 h in discussion while drafting notes for newspaper publication.

“This daily description exercise revealed the benefits of this sort of two-person monitoring scheme, despite the fact that only one of these people was at the scene during this phase—the debriefing and subsequent writing processes brought different perceptions of the situation. Familiarity leads to spontaneous understandings that are reconsidered with hindsight, whereas non-familiarity leads to astonishment and questions about matters that might have gone unnoticed. We thus proceeded with the first series of exhaustive notes drawn up for each member of the family, that were supplemented, if necessary, the following day: nutrition, inputs and outputs of goods and services, scenes of everyday family and working life” (Cottereau and Mohatar Marzok, 2012).

After monitoring and data collection, ethnoaccounting involves an exchange of views between the survey interviewers and respondents, thereby providing a different outlook on the situation.

“The analysis thereafter reviewed the identified operations with the concerned actors. This step broadened the scope of the analysis, while not losing its foothold in the family’s everyday life [...] and generating a more synchronically and diachronically comprehensive political, cultural and economic picture” (Zaccaï-Reyners, 2015).

The investigators then met to present a first draft of their findings to the family members and to revise, criticize and round out the budget with them.

The *Pratiques d’enquête et sens de la réalité sociale* (Survey practices and social reality directions) project coordinated by Alain Cottereau and Stéphane Baciocchi at the French *École des hautes études en sciences sociales* (EHESS) from 2008 to 2021 pursued these methodological considerations and prompted the launch of further ethnoaccounting surveys. This research resulted in a special issue entitled ‘What do poor people live on?’ in the *Revue des politiques sociales et familiales* (2016), which features ethnoaccounting surveys conducted in different fields in France, Jordan, Spain and Cuba.

► Ethnoaccounting applied to the food sector

Ethnoaccounting—unlike other disciplines such as nutrition but like social anthropology—does not seek to study food from a supposedly objective standpoint. Instead, axiological neutrality is sought in order to reconstitute the internal consistency of household food habits, which are considered as ‘effects of cultural rationales’ (Contreras and Gracia, 2005). Beyond the contradictions it embodies, this consistency must be understood so as to be able to account for the interwoven nature of elements as diverse as supply problems and their resolution, the management of the historical heritage of culinary know-how, changes in table rituals, the invention of substitutes to cope with scarcity, and the resourcefulness required to more or less balance meal menus.

Asking “what do people value?” helps us understand the meanings and relevance that actors attribute to food practices and consumption. As Cottureau and Mohatar Marzok point out in their book, only direct observation, i.e. by participating in meals as a guest, enables us to ‘observe tastes.’ This approach sheds light on food preferences and provides a way to analyse expressions of satisfaction, to grasp the reasons for appreciations in context and determine the symbolic value attributed to certain foods.

“Rather than playing guessing games based on food consumption statistics—implying that the very act of buying automatically reflects a preference—the survey focuses on visible expressions of satisfaction and provides an opportunity to comment on the reasons underlying people’s opinions” (Cottureau and Mohatar Marzok, 2012, p. 274).

The ethnoaccounting approach—whereby everything that is eaten and drunk is studied in depth—is rooted in the same type of imperatives as ecological surveys, i.e. to establish complete overall records within limited ranges. All aspects of the art of eating can be addressed and described from within on the basis of these exhaustive ecological inventories of food. In this setting, ethnoaccounting proposes an internal test of the validity of the survey data, by comparing and analyzing the consistency of the two sources produced by the interviewer and the respondents: a complete record of purchases, bartering and gifts, as well as of food consumption based on direct monitoring of meals over the same period. This consistency exercise is very instructive and demonstrates that any questionnaire survey, involving filling out of household diaries or interviews, generally leads to food estimation problems (over- or under-estimation), even though the interviewees may actually believe they are being sincere and realistic. Each phase in which the two sources are compared, by tabulating the data collected and then discussing the results with the interviewees, often leads to a major update of the spontaneously communicated data and to the identification, during meals, of availabilities that may not have been identified during the input-focused survey. The consumption assessments are based on complete food records (purchases and consumption) over periods of 15 consecutive days, i.e. in line with the minimum periods recommended by nutritionists to assess diet quality. Providing respondents with a precision weighing scale allows them to accurately weigh the food items consumed. Moreover, this instrument may spark their curiosity, while ensuring their greater involvement in the survey process and symbolizing (in their eyes) the scientific approach. Although this survey method may be accurate, it should be kept in mind that weighing errors may occur. Such participatory data collection, combined with systematic note-taking by the interviewer, which is subsequently reviewed by the respondents, enables the nutritional tables to be drawn up. These can then be compared

with overall statistics and thus serve as benchmark resources. Data collected at this micro-social level are of course not immediately comparable with those collected at a more macro-level. While the ethnoaccounting approach facilitates the collection of highly accurate observation data, many interviewers would be required to carry out a large-scale survey, which in turn would necessitate a very sizeable budget.

Accompanying actors during purchasing and provisioning activities also facilitates anthropological assessment, i.e. to identify purchasing motives, product and supply source options, price appraisals at the time of transactions, trade-offs between currently available options, and decisions on menu compositions during the decisive moments identified via the survey. This type of monitoring helps to “reveal a limited range of possibilities by studying the transactions carried out and others that could have been possible, to highlight practical issues that lead to certain orientations in the world rather than others, given the opportunities for action available [to the respondents]” (Le Méner, 2016). The ethnoaccounting approach to food enables us to closely observe—in both fragile and more stable economic settings—the activation and strength of solidarity networks, as well as the stakes and benefits that these relationships entail. Depending on the case, these networks help to identify missing products or to find others at a better price. Solidarity is thus embodied and accounted for as a supply source. Black market or self-produced food contributions, i.e. resources that are generally absent from statistical data, are thus revealed. This hands-on approach helps to move away from mere consumption vs. income comparisons and to include observations and evaluations at all stages of the food production to consumption process (including supply and cooking).

► Ethical and deontological aspects of the method

Ethnographic research is highly demanding at the observational level and may entail remarks and questions that are awkward for the respondents. The gradual building of a trust relationship is hence essential to ensure a smooth research process. Regarding the ethnoaccounting approach, (re)drawing up the accounts and budgets of the domestic groups studied is a further challenge. Talking about money, and exhaustively outlining the strategies for making ends meet and ensuring the family’s food supply is very intrusive, especially in the least well-off households. However, this obstacle may sometimes be minimized by the fact that the actors studied, i.e. whole families, are generally keen to play the game, i.e. actively participate in co-construction of the survey. This co-construction functions on two levels. Firstly, in the collection of food data, just having food notebooks on the table, within reach of the whole family, and that everyone can read and make additions to gives a high sense of transparency because the information is shared. The roles of the informant and note taker are thereby interchangeable. Day by day, the survey relationship thus takes the shape of a cooperative venture: the respondents, who are very eager to find out the results, will on their own jot down the foods consumed in the notebook, their price, origin and weight, the arrival of new products in the household, in addition to those received as gifts. The respondents are then invited to read academic articles based on empirical data, which helps them understand the scoring and information system, in order to generate discussion and, if necessary, fine-tune the results. In this way, respondents also gain insight into what is relevant to reveal.

Moreover, the ethnoaccounting approach is amenable to comparing food between different periods and households. Sometimes intimate one-on-one moments with a few

respondents are conducive to the sharing of more personal views or experiences, while family and friend gatherings often provide an opportunity for collective discussions, where the issues raised can give rise to a dynamic exchanges and repositioning (Becker, 2003).

►► A transdisciplinary approach

Ethnoaccounting is a transdisciplinary method. It has been defined—in the strict sense—as a ‘social science’ investigation approach, as it aims to bring together and foster dialogue on different components of this disciplinary sphere, i.e. anthropology, economics, sociology, philosophy and political science. Anthropology and sociology are essential for the fieldwork, especially for participant monitoring, economics for the systematic recording of accounts within households, and philosophy for the analysis of everyday life. Finally, political science enables us to avoid definitively entrenching volatile meanings and instead reveal the processes that drive them.

As we have seen, the ethnoaccounting approach specifically relies on ethnographic survey techniques, including the study of social networks and the gathering of life stories. Special attention is given to the actors’ different viewpoints—and their dynamics—on the same situation. This is a major advantage of long-term ethnographic monitoring (Cefai, 2003). Moreover, it avoids arbitrary compilation of facts and highlights some absences. In this respect, ethnoaccounting complements other methods and disciplines, such as epidemiology and nutritional science. Indeed, even though statistical and nutritional data collection techniques may be well coded and controlled, there is still a lack of knowledge at the micro-social level that can only be overcome through direct anthropological observation. It is therefore necessary to gain insight into the emotional and moral aspects of food at different levels, including buying, cooking and eating. A growing number of nutritionists are hence turning to the social sciences to gain further insight into food behaviour. This micro-social and situational level of analysis may indeed help to improve and integrate macro-social and statistically-based analytical methods, such as nutritional epidemiology. Lastly, participating in family meals enables the investigator to appreciate and record emotional burdens and moral evaluations. According to the nutritionist Monique Romon (2012), all of these elements “influence the subject’s perception of his/her food, and therefore the way he/she relates to it.”

►► A case study: food resourcefulness in Cuba³⁰

In this research, I set out to describe the cultural and political rationales underlying all aspects of food, from procurement to consumption, in both their material and ideal dimensions. The survey was carried out in the different households of the Vázquez

30. This research derives from a social anthropology PhD thesis (Mulet Pascual, 2016). Here are some explanatory notes on the political and food situation in Cuba at the time of the survey (2007–2013). Cuba had been through the departure of Fidel Castro from power in 2008. The soft economic ties that Venezuela was binding with Cuba at the time gave the Cuban regime some economic flexibility. In addition, the founding of the *Alianza Bolivariana para los Pueblos de Nuestra América* (ALBA) alliance, as a trade and cooperative institution between Latin American countries, meant that food products of all kinds from friendly countries such as Bolivia, Ecuador and Nicaragua were available on the island. Products from China and Iran—other so-called ‘friends’ of the regime—were also available. Relations with the United States were very tense when George W. Bush was in power, but improved with the accession of Barack Obama (2009), who lifted travel restrictions while authorizing the sending of money and mail between the two countries. Relations with Russia ended with the demise of the USSR in 1991.

family—an extended family living in several locations. This family served as a basis for observing the society while also being a focus of investigation. The immersion ethnographic study was conducted over a 7-year period (2007–2013). The households were mainly located in Havana (Cuba), i.e. one in the rural area of eastern Cuba, in Monte village, where the family was originally from, and one in Miami (USA). Members of these households travelled or migrated between sites. Settling in a rural area was pivotal to my research, i.e. the knowledge I gained on these very different social environments that were in constant contact revealed many internal references to the island. In addition, subsequent meetings with the Monte-based family in Havana enhanced the life stories and facilitated ethnographic follow-up of the biographical trajectories. This multi-site study was, however, only complete after a 2-month period of participant observation within the Vázquez family in Miami. There I encountered issues of a different nature. In American life, because of the long distances involved, a lot of time is taken up by out-of-home work and travel. This meant that the family house was often empty, unlike the situation in Havana and Monte, where there were always people at home with whom I could interact for the survey research. I ultimately spent several weekends in the Miami households and collected less detailed data than in Cuba, especially as I was unable to monitor the food situation.

In order to broaden the ethnographic scope of my study to encompass household and food economies in Cuba—but without being able to draw up inventories as detailed as those of the Vázquez family—I analysed two other families with different socioeconomic profiles: the López family, two elderly retired women living alone in a working-class neighbourhood, and the Rodríguez family, a couple with a teenage daughter who had no access to *remesas* (remittances) from outside the country.

Questions emerged at the outset of this research. Were families in economic difficulty eating well or poorly according to current nutritional standards? Did economic hardship affect nutrition? Were people satisfied or did they feel deprived? (Cottureau and Mohatar Marzok, 2012, p. 267).

In the 'kitchen' of ethnoaccounting practice

I first had to find ways to create a relationship of trust with the respondents, which was essential to ensure data reliability. Immersion proved to be the most appropriate survey framework for gaining insight into the daily lives of the families studied and of Cubans as a whole. It offered an opportunity to match practices with narratives. The survey was conducted in private while still remaining connected to public life, and it was immediately conducive to forging ties with the three generations. One element that may seem anecdotal for the family turned out to be especially significant—I had brought a mechanical kitchen scale from Europe to weigh food. It was via the curiosity aroused by this scale that I was able to explain the purpose of the survey and then ask for their cooperation (starting with the weighing of foodstuffs). The scale was a perfect embodiment of the idea of scientific self-observation.

The survey was conducted as follows. Food items and their uses were exhaustively recorded through direct observation and interviews during procurement, purchase and preparation, supplemented by retrospective accounts when necessary. The difficulties of sourcing and assorting menus is an area where resourcefulness shines. Here, ethnographic monitoring of people and products was the most

effective method I found. In practical terms, ethnoaccounting for food was done by making the most complete food records possible over periods of 15 consecutive days. I recorded the purchase price according to the supposed quantity of the product purchased (I say 'supposed' because weighing the food at home revealed weighing discrepancies in favour of the sellers—common practice on the island). The records therefore reflected the money spent, but were likely to somewhat over-estimate the quantities of goods purchased. Yet they enabled me to delve deeper into the complexity of the supply problem and the timing of purchases. Table 6.1 shows the detailed daily menus of the family (breakfasts, lunches, snacks and dinners).

Table 6.1. Examples of the Vázquez family menus (2012).

Meals/day	Monday	Tuesday	Wednesday
Breakfast (between 08:00 and 10:00) (5 people)	1 pot of coffee (25 g coffee), powdered milk (70 g), sugar (30 g), butter biscuits (40 g), bread (120 g), oil (5 g) and salt (3 g), 1 banana (275 g), papaya (150 g), 1 orange (200 g)	1 pot of coffee (25 g coffee), powdered milk (70 g), sugar (30 g), bread (200 g) with tomato sauce (50 g), 1 banana (80 g), papaya (75 g)	1 pot of coffee (25 g coffee), powdered milk (70 g), sugar (30 g), bread (200 g), tomato sauce (30 g) 1 banana (200 g), papaya (75 g)
Lunch (between 12:00 and 13:30) (5 people)	<i>Quimbombo</i> stew: <i>quimbombo</i> (400 g), onion (55 g), 3 cloves of garlic, green pepper (50 g), carrot (80 g), pumpkin (175 g), oil (3 g) and salt (3 g) Rice (400 g), mutton (125 g), oil (2 g), onion (30 g) Salad (200 g), tomato (90 g), onion (50 g), olive oil (4 g) and salt (3 g)	Rice (600 g), <i>caguama</i> (turtle) (375 g), green pepper (100 g), onion (110 g), soybean oil (8 g), salt (3 g) Boiled chard (400 g) Salad (350 g), tomato (110 g), lettuce (105 g), beetroot (160 g), olive oil (5 g) and salt (3.5 g)	Stuffed peppers: 8 green peppers (800 g), ground turkey (230 g), garlic (5.5 g), coriander (0.60 g), onion (160 g), tomato (150 g), oil (3 g) and salt (3 g), black pepper (0.75 g), sweet pepper (0.5 g), rice (600 g) Boiled chard (50 g), oil (2 g), salt (2 g) Salad: tomato (150 g), carrot (90 g), olive oil (4 g) and salt (2 g) 2 bananas (125 g)
Snack (between 16:00 and 17:30) (4 people)	Small cakes (125 g), pear juice (55 ml) Black tea (250 g), sugar (30 g), pineapple (135 g)	Cake: corn flour (200 g), coconut (300 g), condensed milk (380 g), sugar (50 g), butter (20 g)	Sweet biscuits (150 g), chocolate bar (50 g), strawberry ice cream (100 g), 1 pot of coffee (25 g coffee), sugar (30 g)
Dinner (between 20:00 and 21:00) (5 people)	Cold salad: pasta (200 g), 1 can of tuna, pineapple (75 g) Mayonnaise: 2 eggs, oil (8 g), garlic (5 g), onion (50 g), salt (4 g) 3 packets of biscuits (60 g). Bread (100 g) Rice and <i>quimbombó</i> from lunch + potatoes (300 g)	Soup: chicken (125 g), <i>malangas</i> (500 g), pumpkin (100 g), 1 green banana (260 g), chard (100 g), garlic (5 g), onion (70 g), coriander (0.2 g), salt (4 g), oil (4 g), boiled yucca (100 g)	1 packet of spaghetti (400 g), tomato sauce (220 g), grated cheese (100 g), oregano (1 g) Soup: mutton (450 g), <i>malanga</i> (475 g), pumpkin (75 g), green banana (275 g), 4 cloves of garlic, vermicelli (30 g), oil (3 g), salt (3 g) Salad: tomato (150 g), chard (150 g), oil (3 g), salt (2 g)

These menus were then converted into nutritional measures in the following categories and units: kg/calories, proteins (differentiating plant and animal protein), carbohydrates, fats and sugars.

The detailed analysis of the family menus highlighted that there was some degree of homogeneity in the dishes cooked, the range of foods used and the types of cooking methods compared to what was consumed before the imposition of rationing. The National Food Consumption and Preference Survey³¹ (Porrata, 2009) indicated similar features in the 14 Cuban provinces, thereby confirming a narrowing trend with regard to food practices in the country. In Cuba, the implementation of fair food policies and the various food scarcity periods led to the emergence of what could be called a 'special eater' profile, corresponding to a narrowing of food styles affecting all areas of cultural life.

Table 6.2. Average daily consumption (in kcal/person). Comparison of our data with the national statistical averages published by the Cuban State and the UN Food and Agriculture Organization (FAO).

Year	Families surveyed	Direct survey averages	Cuban State data ^a	FAO data ^b
2003	–	–	2,936.0	3,246.0
2004	–	–	3,226.5	3,346.0
2005	–	–	3,245.5	3,254.0
2006	–	–	3,268.4	3,260.0
2007	Vázquez family (Havana)	1,344.01	3,288 ^c	3,251.0
2010	Vázquez family (Havana)	1,244.23	–	3,159.0
	López family	1,589.94		
	Vázquez family (Monte)	1,195.47		
2012	Vázquez family (Havana)	1,431.53	–	3,277.0
	López family	1,451.02		
	Rodríguez family	1,008.51		

^a ONE (Oficina Nacional de Estadística) of Cuba, 2013, unpublished. Note that the most recent data provided by Cuba dates back to the 2003–2006 period, so it would be impossible to compare these data with ours (collected in 2007, 2010 and then 2012). However, the major differences in the findings of these two sources may be considered.

^b Available food supplies according to FAO: <http://www.fao.org/faostat/en/#data> (queried on 08/09/2021).

^c Official data reported in Ramos Lauzurique (2010).

In terms of nutrition, the monitored families had very high carbohydrate intake and very low fat intake, alongside low protein intake relative to the public health recommendations. Sugar is widely consumed on this island with a long history of sugar production, as well as other carbohydrate nutrients that boost the feeling of satiety. This multi-year survey also enabled comparisons of diets between different periods and households. We will see that this resulted in high variability between closely related households and even between periods within the same household. Furthermore, this long immersion survey revealed the collective memory of the population's food practices over several generations. Memories hence abounded of hearty Christmas meals, the variety of soft drinks

31. *Encuesta nacional de consumo y preferencias alimentarias.*

available in the 1950s—and still available in Miami under the same brand names—and the abundance of peaches in syrup and canned meat from the Soviet Union in the 1980s. Families also remembered that state food aid had been more substantial in the past, with more products distributed under rationing, more variety in the workers' canteens, and at much more affordable prices. These memories had shaped current food perceptions, and the tragedy of the restrictions was reflected in nostalgic stories, but also in commonplace jokes about food in Cuba. As Table 6.2 shows, in quantitative terms, households were suffering from food shortages in Cuba, i.e. even more so than would be expected from international food statistics and the scant official national statistics.

Quantitatively, all the families analysed had average energy intakes (kcal/person) that were half or even a third as high as the levels claimed by the Cuban government (3,288 kcal). These figures were far below the acceptable levels recommended by FAO. However, some national estimates were produced based on economic extrapolations, as was the case in the three food consumption surveys carried out by the Cuban National Statistics Office (ONE) in 2004, 2005 and 2006. In these surveys, the context and data collection methods were not defined, which raises doubts about their reliability.

Tailoring the method to the Cuban context

In Cuba, sourcing food is always a matter of anticipation and vigilance. It is time consuming, involving hours of lining up, while at the same time people have to be continuously engaged in systems of mutual support and favours. In this vicious circle, the necessary integration in these networks is a cause for daily anxiety. The survey method was thus tailored to the Cuban realities by distinguishing between the different supply chains, which certainly made the survey tables even more complex, but also enhanced insight into these chains and their respective roles from the users' viewpoint. Table 6.3 summarizes the supply chains used, the frequency and timing of visits by day of the week, and the expenditures per visit.

The amount the Vázquez family spent monthly in bodega shops was by far their lowest expenditure. This reflects the low prices of products in this market, which were subsidized and rationed by the State. Meanwhile, their high expenditures in other markets reflect the extreme lack of supplies in the rationing system and the need to procure foods outside the *canasta básica* (basic food basket) of the plan.

Cuban government figures on the extent of involvement of different distribution sources in supplying families diverged greatly from my observations. The official data did nevertheless take public food (state restaurants, workers' canteens) and so-called social consumption (in education and public health centres and sports centres) into account. In my budget calculations, I did not calculate these aspects separately because the meals eaten in the workers' canteen and during hospital stays did not reduce the families' food purchases. This was due to the fact that family members very often returned home to eat even after having eaten lunch at the workplace, which was because of the poor quality of the food offered. Similarly, almost none of the meals offered at the hospital were fully consumed because of the family members' preference for home-cooked meals. Moreover, the official data did not take one very important market in the everyday life of Cuban families into account, i.e. the *mercado negro* (black market), absent from the reports and statistics. Yet the official data included *autoconsumo* (self-consumption) estimates, which were relevant for rural families but did not really apply for city

Table 6.3. Purchases over 15 days in 5 supply chains (Vázquez family, Havana, 2007).

Date	Bodega (rationing)	Official free market ^a .	Farm market (<i>agropecuario</i>)	Supermarket		Black market	Number of supply chains	Total spent	
				Equiv. pesos	CUC			Pesos	
04-04-2007	0.00	0.00	127.00			0.00	1	127.00	
05-04-2007	0.00	17.00	60.50	187.20	7.80	40.00	4	244.20	
06-04-2007	0.00	0.00	0.00			0.00	0	0.00	
07-04-2007	20.05	60.00	58.00	24.00	1.00	25.00	5	187.05	
08-04-2007	17.25	10.00	10.00	24.00	1.00	23.00	5	84.25	
09-04-2007	2.50	10.00	0.00	79.20	3.30	0.00	3	91.70	
10-04-2007	1.25	0.00	41.00	28.80	1.20	0.00	3	71.05	
11-04-2007	8.50	65.00	20.00	21.60	0.90	0.00	4	115.10	
12-04-2007	0.00	0.00	44.00	90.00	3.75	0.00	2	134.00	
13-04-2007	14.45	6.00	50.00			0.00	3	70.45	
14-04-2007	0.00	25.00	10.00	124.80	5.20	40.00	4	199.80	
15-04-2007	0.00	11.00	7.00	156.00	6.50	65.00	4	239.00	
16-04-2007	0.00	0.00	0.00			0.00	0	0.00	
17-04-2007	0.00	0.00	27.00	66.00	2.75	0.00	2	93.00	
18-04-2007	3.00	10.00	70.00	76.80	3.20	0.00	4	159.80	
<i>Total pesos</i>	<i>67.00</i>	<i>214.00</i>	<i>464.00</i>	<i>878.40</i>		<i>193.00</i>	–	<i>1,816.40</i>	
<i>Total CUC</i>					<i>36.60</i>				<i>(CUC: 75.7)</i>
Travel	7	9	12	11	11	5	44		
Average cost per trip	9.57	23.78	38.67	79.68	3.32	38.60	–		
% total cost	3.69%	11.78%	25.55%	48.36%	–	10.62%	–		

^a The 'official free market' refers to the state markets, where items are purchased in pesos but in unrestricted quantities, as opposed to rationing. There are bakeries, fishmongers and butchers.

^b In Cuba, there were two currencies in use at the time of our study: the Cuban peso and the Cuban convertible peso (CUC), which was pegged 1:1 to the US dollar. 1 CUC was equivalent to 24–26 Cuban pesos (this was a floating value).

dwellers—in my observations, self-consumption in the official statistical sense was zero in Havana. The ethnoaccounting method thus enabled me to distance myself from some of the Cuban government data and discourses (as well as from a few assumptions underlying neoclassical economic theory). Box 6.1 presents some of the challenged evidence.

Box 6.1. Survey respondents' appraisals on the food situation in Cuba

■ Buying reflects the freedom of choice

Juana, grandmother in the Vázquez family (6 October 2010, Havana):

"Nothing is really certain here and there is a scarcity of protein, so you have to at least eat eggs. I was offered eggs on the black market today after more than a month without having any and I bought them even though they were expensive, for fear of losing out. Maybe tomorrow there won't be any on the black market, and it's not sure that there will be any at the bodega shop. What else could I do?"

■ The price/quality ratio is the key factor when buying

Juana, when gazing at a bag containing frozen chicken pieces (15 October 2010, Havana):

"It's expensive, but it's better than other products because it's fat-free and not like the rationed chicken, which is mainly just skin. So this bag will be enough for two full meals for the whole family."

It can be seen here that Juana's view of a cheap product is based on her expectation that the product will '*rinda*' ('yield' or be 'worth the money'), i.e. serve for several meals.

■ You pay according to the purchased quantity

Field diary (26 January 2012, Havana): Juana went to buy small peppers at the farmers' market. The measuring cup was a 500 g tin filled with peppers and costing 6 pesos. When the saleswoman started weighing, Juana noticed that there was another smaller tin inside the measuring cup, which meant that she was selling a smaller amount of product for the same price.

■ Food rationing represents a fixed quantity distributed monthly

Field diary (April 2007, Havana): when we weighed the 5 pounds of sugar that Juana had brought from the bodega shop, we realized that there was just over a pound missing, i.e. there was only 3.93 pounds of sugar. Moreover, the availability of products at the distribution points was random and uncertain, which hampered food planning. Field diary (29 September 2010, Havana): Juana went to pick up the monthly chicken supply, i.e. on the second last day of the month the families had not yet received their chicken ration.

■ Rationing provides the basic food basket for all families

Field diary (2007, Havana): The April rice supply had been exhausted by the 13th of the month. The Vázquez family consumed about 800 g of rice daily—it was their staple food. Juana thus had to buy 10 pounds of rice every month on the black market.

Frijoles (dried beans): On 19 April, the quota had been reached. The family had to buy 10–15 pounds of *frijoles* at the free market (not rationed) at eight pesos/pound to finish the month.

The vegetable oil quota they received was 25 cl/person or 1.25 l/month for the five of them. They consumed this quantity within 8 days.

The aim of this survey was not to establish definitive meanings and values associated with food. Instead, it was to highlight their volatility and the role of emotional and moral factors in shaping them in a given setting. Ethnoaccounting helps to grasp these redefinition processes in detail and may therefore be useful in drawing up public policies (food, public health, etc.), as well as for development or social action projects aimed at improving peoples' wellbeing.

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Chapter 7

Photovoice: a participatory method to explore food environments from inhabitants' viewpoint

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Photovoice is a method used to facilitate the production, discussion and exhibition of photographs illustrating a theme or problem experienced by a group of individuals. This participatory and action-oriented approach provides a platform for participants to express their own viewpoints and generates material for advocacy actions (e.g. a photography exhibition).

Photovoice—formerly called ‘photo novella’—is a qualitative, community-based, participatory research (CBPR) method. The term Photovoice was first articulated in the early 1990s to describe a process whereby participants are given cameras to enable the identification, representation and improvement of their communities through photography (Wang and Burris, 1994).

Photovoice has its origins in feminist theory, realist theory, educational empowerment and documentary photography (Wang and Burris, 1994; 1997). At its inception, Photovoice was developed with three main goals: to enable individuals to take a reflexive look at their own community by allowing them to produce a photographic report on it; to generate a critical dialogue within the community and a diagnosis of its strengths and aspirations, by starting a debate around the photographs produced; and finally to create a collective dynamic and trigger specific reflections within community leaders and policy-makers to foster social change, by means of exhibitions of these photographs (Wang and Burris, 1997; Wang, 1999).

The core thrust of Photovoice is therefore to serve as a photo elicitation technique (i.e. a method that uses images to create narratives) that gives people a voice and a way to describe their realities, communicate their perspectives and raise awareness on complex public health issues affecting them (Nykiforuk, 2011; Catalani and Minkler, 2010). Although stemming from documentary photography, which is not an entirely new concept, one of the earliest applications of the Photovoice methodology involved a study on access to resources and women’s health in China’s rural Yunnan province (Wang and Burris, 1997).

►► Nine steps of the Photovoice methodology

When first proposed, Wang and colleagues described the application of Photovoice through a nine-step process known as the Photovoice protocol (Wang, 1999).

First, the target community in which the Photovoice exercise takes place is identified—usually by the researcher (step 1).

Then, with the help of community leaders, research participants are selected from the target community. Participant selection may be based on specific criteria, such as age or gender (step 2).

Thereafter an initial meeting is organized during which participants are introduced to the Photovoice research project, i.e. research aims are explained, participants undergo basic photography training (if they lack these skills) (step 3).

Participants and researchers discuss issues concerning ethics in photography and obtaining informed consent before taking photographs of people and private property (step 4).

After discussion of the general research objective, a more specific question is defined, which participants are asked to illustrate with photographs (step 5).

Participants then undertake the photography exercise over an agreed period (usually a few days but can be up to several weeks) (step 6).

In the last step, participants are brought together again to discuss the stories that each of them wished to illustrate with their photographs (step 7). Group discussions may be guided using techniques such as **SHOWeD**, i.e. What do you **See** here?; What is really **Happening**?; How does it relate to **Our** lives?; **Why** does this situation (concerns, strengths/weaknesses) exist?; What can we **Do** about it? or **PHOTO**, i.e. could you talk about or describe your **Photo**?; what is **Happening** in your photograph?; why did you take a photograph **Of** this?; what does the photograph **Tell** us and how can it provide **Opportunities** for positive change?

Then, the data collected (i.e. the photographs with their captions highlighting participants' stories) are disseminated throughout the community, with local community leaders and/or policymakers and community members present (step 8).

Photovoice is not just a 'nice novel method' for collecting qualitative data, it is an alternative way of doing research by giving, as its name suggests, 'more voice to the voiceless' so as to foster their empowerment and, in turn, social change (step 9).

In this chapter, we focus mainly on steps 1 to 8.

While Photovoice is proposed as a CBPR method, the levels of project participation can vary. In early applications of the methodology, the initial stages (definition of research themes and objectives) were led by the research team, with community members only consulted in the subsequent stages for the production and discussion of photographs. Later, the participation of community members gradually expanded (Johnston, 2016). Currently, there are various levels of participation; from participants' engagement limited to the production and discussion of photographs, to a high level of engagement including involvement in the design of the research as well as the dissemination and use of the results.

High participation is more likely in communities where there is already an established relationship between researchers and the community (Johnston, 2016) and where participant numbers are relatively small. While it could be argued that high levels of participation are essential in Photovoice projects, there is often a trade-off between the resources (cost and time) and the potential benefits participants and communities might gain by participating more fully in the project (Wang and Burris, 1997; Johnston, 2016).

► Strengths and limitations of the Photovoice method

Firstly, Photovoice is a highly adaptable tool that can be used to study a wide range of topics (Wang and Burris, 1997), including health and diet. Secondly, Photovoice is a participatory investigation method, placing stakeholders (participants) at the core of the research process, thereby giving them a greater sense of control and ownership of the research project and findings (Wang and Burris, 1997; Johnston, 2016).

The method is part of an action-research approach (see Chapter 13) based on a comprehensive in-depth approach to the processes under study. Giving cameras to participants provides a means to highlight their views on their community and frame their specific problems more accurately than could be captured by outsiders (Wang and Burris, 1994, 1997; Wang, 1999).

This is particularly important for often marginalized sub-groups, such as women, rural residents, socioeconomically disadvantaged groups and persons presenting with uncommon or socially stigmatized health conditions. Furthermore, since anyone can learn to use a camera, Photovoice is applicable to people who can neither read nor write (Wang and Burris, 1994), a situation that often prevails in rural areas of many low- and middle-income countries.

While it could be argued that a well-trained qualitative interviewer can get the same level of detail using traditional qualitative inquiry methods, Photovoice offers some additional advantages over these conventional data collection methods. Firstly, cameras can be very motivating and appealing, especially to novice photographers, thereby boosting their willingness to participate in the research process (Wang and Burris, 1994). Secondly, Photovoice allows participants to express feelings through photography that they would not be able to verbalize through more conventional methods. Photovoice can also foster potentially long-lasting, mutually beneficial partnerships between various stakeholders, i.e. participants, researchers, community leaders and policymakers (Johnston, 2016). Moreover, Photovoice offers both narratives and images as research outputs. In addition to the narratives, the power of participant-captured images as a useful and engaging advocacy tool in bringing about community-led social change cannot be emphasized enough (Wang and Burris, 1997; Johnston, 2016).

In the specific food research field, this method—by placing participants at the centre of the research process—generates an in-depth understanding of food behaviours and their drivers from the participants' standpoint (i.e. an emic rather than an etic approach). The photographs may for instance capture participants' representations of their own diets and eating practices, the different foods they eat, how they combine and prepare them, thereby providing a basis for further exploration of the factors underlying these behaviours through discussions on the photographs.

For example, in a study in Uganda, the researchers were quite surprised that a participant chose to illustrate the material constraints influencing eating behaviours in her community by photographing a road. Through this photograph, her idea was to illustrate the role of the relationship she had with the food vendor from whom she regularly purchased fresh produce. This photograph, in a striking clear-cut way, illustrates the real motivations that led the participant to choose this food supply outlet (accessibility and proximity).

This method has many advantages for qualitative research studies requiring a comprehensive and in-depth approach, yet like any method it also has limitations. Firstly, as it is a qualitative method, Photovoice therefore cannot address research questions aimed at establishing relationships between eating behaviour, nutrition and health.

The method is also potentially biased. For example, participants' accounts are not necessarily intended to convey how they see their community or their place in the community but may serve to shape the image they would like to portray to others. This can often be the case when dealing with sensitive and possibly stigmatizing topics. In addition, participants are required to obtain the consent of those they photograph, which may lead them to narrow the scope of the subjects they photograph.

The photographs taken may be used by participants to present their place in the community but also their relationship to the social norms of the group to which they belong or to which they want to belong, or even which they would like to distinguish themselves from. It is important to be aware of the weight of social norms and of the role of social interactions on behaviours.

Taking photographs can sometimes place a burden on participants as they may feel that they owe it to the researcher to at least capture something since they are involved in the project. From the researcher's perspective, the photographs may be easy to collect but, in addition to focus group discussion data, they collectively represent a large body of data that might be difficult to analyse and synthesize (Wang and Burris, 1994).

Lastly, unlike conventional qualitative methods, it is important to consider the ethical and deontological implications in any Photovoice project, as highlighted in the following section (see Ethical aspects, risks and safety rules of the Photovoice method).

► Ethical aspects, risks and safety rules of the Photovoice method

It is important from the outset to address the question of who owns the photographs once they are taken, i.e. do they belong to the participant or the researcher? Ethically speaking, the Photovoice methodology postulates that the photographs belong to the participants because they are the product of their creativity (Wang and Redwood-Jones, 2001). In order for the researcher to use the photographs for any activities, they must provide an 'acknowledgement and release' form to be signed by each participant detailing the activities for which the researcher would like to use the photographs and giving the researcher permission to use them for research purposes, with the acknowledgement that the participant is the owner of the photograph. Failure to do so would be a breach of copyright and intellectual property theft.

Photovoice can be intrusive because participants are asked to take photographs of realities in their actual lives. When it is a contentious issue, participants might be embarrassed to show their actual situations since they see their photographs as a permanent reminder of their reality, which might cause distress.

Participants may sometimes be suspicious as to the actual underlying intention of the researcher for the photographs and they hence may refuse to take part in the Photovoice project or limit the number of photographs available for the researcher's use.

Ethical questions arise regarding participants taking photographs of clearly identifiable persons and/or their private property without their express permission. This can sometimes create confusion and may put participants in a risky situation. To set things straight, prior to the photography project, participants must take part in a Photovoice training session (at the initial meeting) that outlines the importance of ethics in photography. In this session, participants are made aware of the importance of asking permission or consent of persons whose private property or images they intend to capture in the photographs (Wang and Redwood-Jones, 2001). The consent form introduces the photographer and the research project and offers an explanation as to the potential use of the photographs in which they appear. Failure to obtain such permission from everyone whose image or property appears in photographs means that the latter cannot be used thereafter in the project (Wang and Redwood-Jones, 2001).

Since Photovoice is mostly carried out using digital cameras, participants may expose themselves to a number of risks. In some places, the cameras entrusted to them may be the object of attempted theft, with the possibility of physical assault. Moreover, participants could be at risk of accidents when trying to capture the best image in the photography exercise. These issues must be identified and discussed with participants before taking any photographs. Furthermore, as the core intention of Photovoice is to bring about change, questions as to whether this change will actually meet the participant's expectations must be addressed. Participants should also be explained how the project findings will be disseminated to them or to the wider society, including beyond their communities.

Lastly, it is important that researchers desist from misrepresenting the participant in an unflattering light based on their photographs for the sake of presenting a sensational research piece.

Photovoice ethical considerations are summarized in Box 7.1. These need to be discussed between the researchers and participants at the outset of the Photovoice project but can be revised/clarified over the course of the project.

In addition to ethical considerations, potential risks (Box 7.2) should be discussed with research participants at the outset of the project. This is ideally carried out during the Photovoice training exercise but, like ethical considerations, can be revised/clarified over the course of the project.

Lastly, to ensure participant safety, it is essential to emphasize the safety guidelines (Box 7.3) at the outset of the project. These can be discussed at the meeting between researchers and participants, prior to the photography exercise. The safety guidelines could be highlighted as a reminder in the photography guide participants may be given to keep at hand.

Box 7.1. Ethical considerations in Photovoice research.

- It is important to obtain permission (informed consent) from all participants that will take part in the Photovoice study regardless of how old they are. This is the first step in their participation in Photovoice.
- In order to use the photographs for research purposes, the researcher must obtain the written consent of the participants via an “acceptance and release form” detailing the research activities for which the photographs are to be used, authorizing their use for research purposes, and acknowledging the ownership of the photographer.
- All participants must be aware that it is essential to obtain the informed consent of the persons and property owners depicted in the photographs. Participants must receive consent forms to be used for this purpose, prior to the start of reporting. These forms must introduce the participant, the research project, the purpose of the photographic exercise, and the use that will be made of the photographs. If consent is not obtained, the photographs may not be used for the project, nor may they be used for dissemination or advocacy purposes.
- Participants should be aware of being respectful of people’s decisions to be photographed (or not). They must also be respectful of people, places and things that they capture in their images, whether or not they have any prior relationships with these people.
- Researchers should ensure that they refrain from using captured images in a way that unfairly displays the situation at hand, but instead promotes them.

Box 7.2. Potential risks in Photovoice research

- Participants may be emotionally stressed or anxious at the prospect of interacting with the people photographed and putting into images difficult issues they may be experiencing. This problem is common to many other photo-elicitation techniques and to more classical qualitative methods.
- The communities involved in Photovoice are expected to be highly engaged. As a result, it is possible that the discussion of community issues and underlying dynamics, particularly where contentious issues are concerned, may contribute to fuelling conflicts.
- There are financial risks when participants are unable to work because of the time they have devoted to the project.
- Participants should be aware of the potential safety risks associated with the communities or areas in which they are likely to take photographs.
- Photovoice participants may also experience intimidation and negative judgments from members of their own community who were not chosen to participate in the project.

**» Study of food environments in Africa
using the Photovoice method**

Photovoice has recently grown in popularity in various contexts with diverse communities (Wang and Burris, 1997; Johnston, 2016) owing to the potential benefits for all stakeholders involved (participants, researchers, other community members, community leaders and policymakers) relative to other more conventional survey methods. In practice, Photovoice has been applied to explore a variety of issues (Johnston, 2016)

Box 7.3. Safety guidelines for participants in Photovoice research

- Firstly, maintaining personal safety is a priority. No photograph is worth putting yourself in a risky situation.
- Always wear a name badge or some form of identification when out taking photographs.
- Always be aware of your surroundings, e.g. do not stand in the middle of the road to capture images, especially if the photographs are taken in a busy area with heavy traffic.
- Do not go where you would not normally go or do what you would not normally do. If you do go to any new or unfamiliar areas, go with a friend or someone you can trust.
- If you are attacked when you are out taking photographs, keep calm and do not resist. If the attackers are after your camera, let them have it. The camera is not worth your life.
- When in doubt, get in touch with the researcher (or field assistants).
- If you have any doubts or questions, ask the researcher (or the field assistants).

mostly in high-income countries, e.g. chronic pain in adults, ageing in care homes, adolescent mental health and, more recently, the food environment. There have yet to be many applications of Photovoice in low- and middle-income countries, e.g. vulnerability of indigenous community health to climate change in rural southwestern Uganda (Berrang-Ford et al., 2012) and factors influencing access to maternal health services in rural central Uganda (Musoke et al., 2015).

Practical applications of Photovoice will be discussed with respect to two research projects involving different levels of resources (time, money, staff). The first concerns a large qualitative research project undertaken to assess drivers of food choices in urban Kenya (n=48 participants) and Ghana (n=96 participants) amongst men and women (aged ≥ 13 years) living in deprived neighbourhoods (Pradeilles et al., 2021; Liguori et al., 2022; Njeri et al., 2022) while the second was as a PhD research project undertaken in Uganda to explore dietary practices among rural and urban women of reproductive age (WRA) (n = 18) (Auma et al., 2020). The Photovoice process, including context-specific adaptations and challenges encountered in implementation, are summarized in the following sections.

Step 1: Identification of target communities and audiences

In the three countries (Kenya, Ghana, Uganda), the target populations for study were identified through literature reviews. Target communities, i.e. the actual study sites for data collection, were identified through literature reviews and consultations with in-country researchers who had previously established partnerships with local communities. For practical reasons, the research topic was identified following a systematic literature review, which identified gaps in research on food choices, so the community was not consulted beforehand. In Ghana and Kenya, the target audience for dissemination of the findings included community members, local and national stakeholders. In Uganda, the target audience for dissemination was not identified at this stage for practical reasons, i.e. the time and resources of the researcher (PhD student) were limited, so dissemination through usual avenues such as photography exhibitions was unfeasible.

Step 2: Selection of study participants

In Uganda, participants at the two study sites (rural and urban) were selected with the help of community leaders (community health workers), based on set criteria, i.e. gender (women) and age (WRA). One issue that emerged in participant recruitment was that some urban participants were suspicious as to how the photographs would be used, so fewer participants than expected were taking photographs. This issue did not arise with regard to the rural study participants. As in Uganda, participants in Kenya and Ghana were identified with the help of community leaders based on pre-defined criteria, i.e. gender, age, working status, body mass index (BMI) category and pregnancy/lactating status for WRA.

Step 3: Training and exchange session offered to participants

In Uganda, Photovoice training was offered to rural and urban participants. Photovoice training in rural Uganda took place during a single group session of over an hour that was attended by all participants. At the urban study sites in the three countries (Ghana, Kenya and Uganda), Photovoice training was carried out on an individual basis—due to time and resource limitations, these urban participants could not be gathered into a single Photovoice group training session as had been done at the rural sites. A Photovoice training manual was prepared and translated into the local languages to guide the meetings at the rural and urban sites.

Step 4: Informed consent/assent

Informed consent was obtained from all study participants in Uganda, Kenya and Ghana. Informed assent was obtained from participants under 18 years old. In addition to informed consent forms, additional consent forms were prepared for participants, i.e. ‘informed consent for persons and private property in the photographs’ and ‘acknowledgement and release form’, authorizing the researchers to use the participants’ photographs. Rural participants claimed they had some difficulties in obtaining consent from household members before taking their photographs, e.g. requesting consent from a husband might be perceived as disrespectful. To overcome this problem, some participants opted to take photographs in which the household members were not recognisable, thereby avoiding the need to obtain consent.

Step 5: Proposal of the research theme

Owing to the nature of the projects (i.e. PhD study), in Uganda, the research theme was proposed prior to the initial meeting with participants following a literature review which was conducted to identify any issues regarding the target community—this was also carried out in Ghana and Kenya.

Step 6: Photography exercise

In Uganda, participants were asked to take five photographs illustrating five topic areas (i.e. what food means to them, where they source their food, who they eat with, where they eat and how they prepare food) but they could take additional photographs to potentially enhance their photo-stories. Each participant received a photography guide summarizing the aims of the Photovoice project, the five topic areas to be illustrated

by photographs, ethical considerations and potential risks. In Kenya and Ghana, the five topic areas to be covered by participants' photographs were: something in your area that influences what you eat, someone in your area who influences what you eat, a place where you eat, something that makes it easy to eat healthily, and something that makes it difficult to eat healthily. For all of the Photovoice projects (Uganda, Kenya, Ghana), the photography exercise took place over a one-week period and photographs were taken to illustrate the topic areas. This is unlike other Photovoice projects in which participants are given open-ended topics (e.g. take photographs to depict how your food environment influences what you eat).

Step 7: Analysis of the photographs

In Uganda, Kenya and Ghana, the photographs were discussed during in-depth semi-structured interviews and not focus group discussions (FGD), as is the case in many Photovoice research projects. As food is a very emotionally-charged issue, while having a highly significant sociocultural attachment in the study context, it was envisaged that participants might feel more comfortable discussing photographs—which were windows into their lives—privately just with the researcher. Discussing issues around food choices and associated drivers might otherwise have given rise to feelings of embarrassment or stigma in FGD, especially since the participants were from tight-knit communities. Moreover, among urban participants in Uganda, it would have been difficult to gather all of the participants together in one place to discuss the photographs, so it was more practical to use individual in-depth interviews.

Step 8: Dissemination of the results

Dissemination through public engagement

In Uganda, Kenya and Ghana, a variety of dissemination strategies were used. In both Ghana and Kenya, a photography exhibition focused on the drivers of food choice was held in a public venue in each participating city (Ho, Accra and Nairobi) to raise community and media awareness regarding the drivers of unhealthy food and beverage consumption. The exhibitions were attended by a range of stakeholders: local community members, non-governmental organizations, governmental representatives (Health, Food and Agriculture Ministries), healthcare services, local government and the media (including public and private radio, print media and TV). In both Ghana and Kenya, the results were also disseminated to national stakeholders through a stakeholder engagement meeting at the end of the project, with photography booklets handed out as an advocacy tool. The aim was to stimulate debate on the issues that community members face in their daily lives when trying to eat healthily. Proposals for interventions and policies aimed at addressing the raised issues were presented by the research team and discussed with decision-makers.

Dissemination through scientific publications

For studies from all three countries, findings have also been disseminated throughout the academic community (Auma et al., 2020; Pradeilles et al., 2021; Liguori et al., 2022, Njeri et al., 2022). For this purpose, the data were analysed using a pre-defined codebook. The approach implemented for the development of the coding scheme and

subsequent analysis was both theory-driven, using a priori themes compiled from an existing socioecological model of dietary behaviours (Story et al., 2008), and data-driven (i.e. grounded codes/emerging themes from the data). The socioecological model illustrates multiple individual and environmental factors (social networks, physical environment and macro-environment) that directly or indirectly influence what people eat (Story et al., 2008). For the PhD project in Uganda, for example, codes derived from the data used in the analysis of participants' physical environments included words/phrases such as 'fridge', 'cooker', 'home garden', 'near', 'far', 'workplace' and 'money', etc. Once all of the participants' narratives and photographs were coded, the codes were grouped into a number of sub-themes and themes, e.g. the codes 'near' and 'far' were clustered into the sub-theme 'physical access to food establishments', the codes 'fridge', 'cooker' and 'home gardens' were clustered into the 'household food availability' sub-theme, while the codes 'money' and 'cost' were pooled in the 'financial access' sub-theme. Consequently, the sub-themes 'financial access', 'food adulteration', 'physical access to food establishments', 'type of foods available' (in the household or community/neighbourhood) and 'type of food establishments' were collectively grouped into the over-arching theme 'physical environment'.

Based on the participant's narrative, the photograph below (Figure 7.1), for example, was first coded using the word 'near'. Then the same photograph was coded under both the 'physical access to food establishments' sub-theme and the 'physical environment' theme.



Figure 7.1. Sweet potato stall at a market (participant 17).³²

'Sweet potatoes are the food that are readily available and nearest to us, and so they are the food we usually eat. Moreover, at that stall from which we buy food, it is what is available. At that stall, they do not sell anything else like rice. All they have is sweet potatoes and matooke' (Participant 17, rural, 15-17Y)

In the example below (Figure 7.2), on the other hand, the photograph was coded using the words 'money', 'cost', 'materials' which were subsequently pooled under the 'financial access' sub-theme, and under the 'physical environment' theme.

32. The images presented are photographs taken by the survey participants.



Figure 7.2. Uganda bank notes (participant 11).

'If I get money, I eat 'my food'. If I do not get, I just eat for the satisfaction whatever...the satisfaction factor' (Participant 11, rural, 18-34Y)

In the last example below (Figure 7.3), the photograph was first coded using the words 'home garden', 'urban farming' and 'materials'. These were pooled under the 'household food availability' sub-theme and consequently under the same 'physical environment' theme.



Figure 7.3. Home garden in an urban environment (participant 5).

'These are greens...these are onions. We always use the leaves for the onions. There is 'nakatti' there, there is 'dodo' there...there is this 'Sukuma wiki' and the other one...I have forgotten the name. Everything is there...coatmeal is there, in that 'ka' small garden as you see it.'

Following the coding, linkages between the themes and sub-themes were discussed alongside the photographs.

Step 9: Social change

It is still too early to determine any impacts of the studies at all of the study sites (Kenya, Ghana and Uganda) as the projects just recently finished (in 2019). The results were disseminated to communities and policymakers in Ghana and Kenya, so it is expected that the project will mobilize public authorities and policymakers to remove barriers and identify solutions to enable these low-income communities to access healthy food.

In conclusion, Photovoice can be effectively used to gain greater insight into the role of food environments on food choices and it goes beyond conventional approaches that often gear the study towards assessing characteristics intrinsic to individuals. It allows us to focus on the way people understand and interact with their environment. Another feature of Photovoice was revealed via its implementation in Ghana. While the aim of the project was to study unhealthy food environments from a nutritional balance perspective, the participants' stories highlighted that food safety issues were to be prioritized. Hence, by giving a voice to community members and encouraging them to point out what influenced their food choices, another issue emerged that was not the original focus of the project. This highlights the gap that can sometimes exist between the concerns of development actors, researchers (in this case nutrition specialists) and citizens. These observations on food safety help guide the interventions and policies of decision-makers. Images produced through Photovoice projects could serve—beyond words—as a powerful lever for mobilizing policy makers.

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Chapter 8

Quantified narratives: a research method that combines interviews and statistical analysis of biographical dynamics

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This mixed qualitative and quantitative method aims to understand eaters' involvement in food practices through detailed description of the stages and sequences of resource access. It starts by collecting qualitative data from semi-structured interviews with people involved in the food practices studied, and then a detailed narrative is drafted, which is then coded and statistically analyzed so as to be able to compare and construct a typology of engagement paths.

The quantified narrative research method is theoretically rooted in the sociology of social networks. This field focuses on social relationships; and on the links that are established between people, organizations or groups and the networks formed by these relationships (Degenne and Forsé, 1999). It can focus on digital social networks or social media, such as X (formerly Twitter) or Facebook, by asking specific questions about the nature of the links mediated by digital devices or by using its mathematical tools to study the structure of the networks formed by the links between users of a given tool. Yet it should not be confused with digital sociology, which is focused on digital uses or identities. The sociology of social networks can be divided into three main research areas that approach networks and relationships in different ways. 1) *Complete network* studies examine the structure of links that unite a defined set of actors (e.g. all members of a company or all companies in a sector). *Comprehensive network* analyses often focus on power (who is in the best position?) or cohesion (is the network more or less fragmented?) issues. 2) *Personal network* studies investigate conventional samples of people in order to retrace, for each respondent, the direct relationships he/she has with other people and the relationships people around him/her have with each other. The key factors underlying the relationship and network structures can then be assessed, as well as their changes over time, according to biographical events. 3) The study of *relational chains* aims to monitor the resources that circulate through relationships in open-ended networks. Some studies focus on dissemination issues—in order to know the theoretical size of a network (small-world experiment)—while others seek to understand the resource access processes (access to employment, contracts, information, etc.).

The quantified narrative method is part of this third group of studies that strive to understand the role of social relations and mechanisms involved in ‘entrepreneurial’ processes, i.e. aiming to transform the state of the prevailing situation through a sequence of activities (Chauvin et al., 2014). It was first developed and tested in a research study on science-industry relations conducted by Michel Grossetti and Marie-Pierre Bès. The method was then adopted and customized to study the creation of start-ups, the informal economy in Burkina Faso, supported business ventures, employment access, independent inventors, and business creation in the humanities and social science. It has now been formalized in two methodological articles (Grossetti, 2011; Grossetti et al., 2011) and was recently tailored for studying the trajectories of people with long-term illnesses (Akermann et al., 2018). Finally, the method was implemented to study gluten avoidance trajectories (Akermann and Coeurquétin, 2023).

Quantified narrative research is a mixed analysis method. It combines the collection of qualitative data through semi-structured interviews with several people involved in the studied activity, the collection of secondary data (documents, digital files, etc.), a narrative written by the researcher—which can be sent to respondents—and a step involving narrative coding and statistical analysis of a resource access sequence database. The aim is to gain insight into a social process by drawing up a detailed description of the resource access stages and sequences (e.g. information, advice, materials, services, financing, emotional or instrumental support) that have guided people’s actions. It was designed to study the issue of embedding activities (particularly economic activities) in social relation networks (Granovetter, 1985). As it facilitates calculation of the extent of social relations activated to carry out an economic activity at several stages, the method has been implemented to highlight the processes involved in the gradual empowerment of activities with respect to the social relations from which they emerge (Grossetti and Barthe, 2008).

► Understanding what eaters do and the contexts of their actions

The quantified narrative method, like many other social science methods, was not specifically designed to study food and eaters. As a method for analyzing social processes, it facilitates—after some adaptation—the study of processes that concern eaters’ food practices, or collective practices such as procurement via consumer buying groups. As it is focused on the individual level, it is therefore very useful for analyzing changes in eating behaviors, particularly when consumers adopt an active stance, i.e. when they carry out a series of activities geared towards changing their diet, the way they buy food or cook. Rare food products, etc., must be procured when getting involved in ‘zero waste’ and ‘locavore’ consumption, new forms of collective or collaborative supply, ‘autonomous’ food production, or in a gluten-free, additive-free or raw food diet, including lacto-fermented foods. The quantified narrative method may be used to analyze individual trajectories of consumers who have voluntarily or involuntarily (e.g. for medical reasons) begun actively modifying their food practices, or even veered towards a food bifurcation. On a collective scale, the method is perfectly suited for studying collective changes (e.g. family changes) or focusing on the structuring of consumer groups collectively involved in the launch of a production (community garden, etc.) or

distribution (buying group, community-supported agriculture [CSA], etc.) activity. It is then a matter of analyzing how a production or consumption activity is anchored in public stakeholder systems and in networks within the eater-entrepreneur³³ sphere.

Guided by the interviewer, the respondent is invited to tell his/her story of change of practice or the creation of a collective activity by charting all the steps that leading from an initial to a final state where his/her diet or food practices were modified and stabilized. In the narratives, which may range from a few months to a few years, guided by the interviewer's specific prompts, people are asked to indicate what has supported their actions: information on food in general or on a particular product, equipment, or sales outlet; the culinary or health advice they received; new equipment, products, qualification or sales system, and new ways of cooking the foods offered. Each item of information, piece of advice, product or equipment reported by the person in his/her story, is considered to be a 'resource', i.e. an action support that circulates through an access mode, which may be an interpersonal relationship, a healthcare professional who provides advices (alternative medicines, paramedical professions...), an organization, an institution, a market space, a media outlet, etc. The method avoids the pitfall of individualizing processes by focusing solely on the description of the person's individual skills, or even psychologizing the process by focusing on the links between the activity carried out and the person's personality traits. The analysis of the resources tapped necessarily highlights the communities, institutions, mechanisms, networks and significant others involved in the process of creating activities or changing practices. The core issue the method addresses is therefore: what are the action ingredients?

The analysis of access modes shows the diversity of individual and collective actors, highlights key influencers and, more broadly, the social spheres that influence or support representations and practices at the different individual or collective trajectory stages. The diversity of relationships reported in the narratives, the modification of relationship types, the frequency and strength of the ties, and the creation of new relationships throughout the trajectory also pave the way to a detailed analysis of the relational dynamics that underlie changes in eating practices. Does changing one's eating practices also mean changing one's social environment, and *vice versa*?

By combining the analysis of acquisition moments and resource access modes, it is possible to identify the autonomy or dependence dynamics—over time and with respect to specific spheres (medical, commercial, digital, etc.) and different social circles (family, friends, professionals, etc.). Does the medical world influence consumers throughout their trajectories? At what stages of the trajectory do digital social networks, family members, and market spaces most influence consumers? What are the social circles that underlie changes in food practices or the creation of a consumer buying group? What are the tools, methods and recipes that underlie a change in culinary practices?

When the analysis is carried out on a sample of several dozens of individuals, it is possible to identify some recurrent trajectories, to explain a range of dynamics according to the social positions of the individuals involved, and by structuring the

33. Here an eater-entrepreneur refers to an individual seeking to modify the state of his/her food practices or the state of the food system in which he/she is involved, i.e., entering into an active, individual or collective food bifurcation.

spaces within which the actors are located. Do younger and older people use the same types of resources to guide their actions? Do urban and rural consumers rely on the same resources, the same types of sales outlets, the same types of professionals (medical world, sports world, wellness world, etc.), the same knowledge and tools?

When the studied trajectories are within the same historical, geographical or social contexts, it is often possible to identify the resources shared by several people or groups with different trajectories (a book cited by several people, a doctor, association, sales outlet, equipment, producer, etc.). If trajectories are interconnected through these shared resources, networks are also created from which intermediaries emerge. The presence or absence of these pivotal actors can be an indicator of the structuring—or even institutionalization—levels of a collective movement geared towards changing food practices and achieving food reappropriation. Do people who adopt a gluten-free diet rely on the same rationales disseminated by the same books, blogs and social network groups? Who are the ‘zero waste’ advocates, what knowledge do they disseminate, and do they have an impact on consumer practices? Which institutions support the creation of collective vegetable gardens or citizen purchasing groups?

The quantified narrative method is very well-suited for studying individual actors or groups undertaking a food-related activity (production, distribution and supply) or changing their food practices (specific diet, provisioning and conservation modes, particular ways of cooking, etc.) over a given time period. It also lends itself very well to the analysis of limited periods (from a few months to a few years), marked by events that create uncertainties, reshape representations, modify action contexts and activate resource access sequences. When there are no events in the actors’ consumption trajectories, no interventions of identifiable actors or no emerging innovations, narratives are not very clearcut, i.e. people lack the biographical and temporal benchmarks needed to engage and carry out the narrative.

The quantified narrative method calls upon actors’ memories, so it is not very suitable for studying less mindful latent changes for which actors remain passive. Unless it is focused on a very short scale (around a day), the method is therefore ill-suited for studying routine consumption periods during which only marginal changes occur. The method deliberately focuses the narratives on the supports for action rather than on actors’ rationales. Asking people to focus on the external elements that drive their practices will not keep them from discussing their theories, rationales and representations during the interview, but the method is more geared towards revealing what the actors do—along with the context of their actions—than what they think.

► Ethical and deontological aspects

The quantified narrative method does not raise any more ethical, legal or deontological issues than those concerning qualitative (interviews) and quantitative (questionnaires) data collection in humanities and social science. When applied to individual consumption and food trajectories, research ethics regarding information collection and processing is advocated, given the close links between the food issue and intimate medical and religious aspects in particular. When applied to the same fields, but more specifically to the analysis of collective and organizational trajectories—where the resource vectors may be the same for many actors, or geographically close or even in competition—data vigilance becomes even more essential and encompasses respondents’ feedback.

Specifically with regard to this investigation method (whatever the scale), while also being common to all social network analysis, the databases that researchers draw from contain substantial information on individuals other than the respondents (links between two people; types of relationships; profession; geographical proximity, etc.). In the light of this huge bulk of collected personal data and the potential for identification via cross-referencing, there is a crucial need for these databases to comply with the General Data Protection Regulation (GDPR) with regard to data anonymization and end-to-end security for the survey and analysis, including information on the survey respondents, data sharing between researchers, scientific outreach and computer archiving.

►► A method applicable at various scales and in different disciplines

The quantified narrative method can be used at various scales. It can be tailored to the analysis of individual trajectories, collective trajectories (families, community groups), organizational trajectories (CSA, etc.) and multi-partner project trajectories. It can be implemented at short (daily) or long (several years) time scales and even used for longitudinal analysis. It is a mixed method, combining qualitative data collection and statistical analysis. It is also suitable for relational chain analysis and even network analysis under specific conditions. The qualitative interview data enables respondents to express themselves on the meaning of their actions. The narrative writing formalizes the structure of individual or collective trajectories and highlights the stages and bifurcation points. Database statistical analyses, rather than focusing on individuals, reveal recurring processes, and key sociodemographic, geographic or institutional factors. Network analyses highlight pivotal actors, intermediaries, as well as the structure of actor systems or chains of relationships.

The method was first developed for sociology applications, but it is now used by economists and geographers to study the role of geographical proximity in the successful implementation of innovative projects, the effectiveness of institutional support mechanisms, and the impact of the territorial context (metropolitan areas, medium-sized cities, rural areas, etc.). The method, which focuses on 'resources' (cognitive, economic, instrumental and emotional), can thus be of interest for researchers in a range of humanities and social science disciplines. This method could inform and support nutrition and public health analyses of dietary change trajectories, e.g. vegan, vegetarian or flexitarian diet bifurcation, etc.

►► A case study of application of the method to gluten-free diet practices

Here we illustrate a case of using the quantified narrative method to analyze dietary changes by presenting a survey conducted during the summer of 2018 that was focused on individuals who had declared themselves as being 'non-celiac gluten sensitive' (NCGS). This survey was conducted as part of the multidisciplinary '*Gluten, mythe ou réalité?*' ('Gluten, myth or reality?') project aimed at characterizing the potentially better digestibility of various cereal products with regard to several factors (types,

systems, processing and manufacturing)³⁴. In order to gain insight into the survey respondents' motivations, purchasing practices and eating habits, but especially the resources that support their transition to a restrictive diet, the sociological research was geared towards studying their medical and consumption trajectories. We took into account these people's trajectories as a succession of stages—leading them gradually (or rapidly) from diagnosis to avoidance and then to the consumption of these presumably more digestible cereal products—and opted to study the sociological aspects of 'becoming' and then 'being' gluten sensitive.

The method combined data collection through semi-structured interviews and a narrative coding method, i.e. a narrative was first formulated from the interviews with people who had declared that they were gluten sensitive. These interviews featured a biographical framework (Bertaux, 1981) and insisted (via systematic follow-up questions) on the collection of resource access elements. These precise reminders were necessary to identify, in as much detail as possible, the resource types, the means used to access the resource (chains of relationships or mediation forms) and, where applicable, the type of relationship between the individuals involved in this chain.

This research was intended to trace the itinerary of gluten sensitive people as a continuous sequential process of access to information, care, tests, etc., from the onset of their symptoms to resolution of the issue. Information was collected on all of the action support resources (recommendations to stop eating gluten; a GP's recommendation; information on cereal products or on industrial or artisanal food, etc.) as well as their vectors (GPs, close relatives, books, websites, etc.).

In concrete terms, we specifically asked respondents to tell us what had led them to eliminate gluten from their diet. We then tried to steer them through the different empirical and conceptual periods which provided us with a framework for conducting the interviews (diagnostic delay; diagnosis; strict, dilettante or selective gluten-free diet). In this respect, the first exploratory interviews were useful for identifying the different stages, the resources obtained and how they impacted the rest of the care process or, more generally, the dietary change processes that could be studied via this survey method.

Once the interview was carried out, the researcher was asked to produce a report based on his/her notes and audio recordings. This report could be enriched by interviews with other people involved in the studied process (family members, producers, doctors, etc.) and by consulting documents (digital record of the activity, receipts, business cards, diary notes, etc.). The objective here was to draw up a relatively concise but as precise as possible chronological account. The account could then be sent to the interviewees in case of doubt about a particular piece of information, for their validation or even additions. The researcher then had to identify the resource access sequences in the narrative (table 8.1). For each sequence—a few descriptive lines in the narrative—the researcher coded a specific number of variables, such as the access mode, resource type, relationship or mediation type, and the resource mobilization date (in years or even months). Once the narrative had been coded, the sequences could be quantitatively analyzed to study the hypotheses put forward.

34. The *Gluten, mythe ou réalité?* project is supported by the *Fondation de France*, the *Fondation Edouard and Geneviève Buffard* and the *Fondation Daniel and Nina Carasso*. Kristel Moinet (coordinator of *Biocivam de l'Aude*, France) and Dominique Desclaux (researcher at INRAE Maugio, France) are coordinating this project in collaboration with several INRAE teams and many field actors: farmers, processors, agricultural advisors and doctors.

Table 8.1. Examples of resource access sequences and related data.

Based on this narrative (excerpts)	The researcher is presented with data that concern...	Interesting data to...
"In 2001, a friend who had the same symptoms as Jacqueline's stopped eating gluten and noticed benefits. She recommended that Jacqueline do the same."	<ul style="list-style-type: none">- One resource, which could be described as 'informational': a 'Gluten cessation recommendation';- The access mode (here a friendly relationship).	<ul style="list-style-type: none">- e.g. identify the types of resources that are most represented at some trajectory periods (information, care, support, etc.);- e.g. ditto for access modes.
"Audrey suffers from abdominal pain that gets worse and worse. She consulted a doctor (early 2004) for tests (colonoscopy + fibroscopy): he refused, she was 'too young.'"	<ul style="list-style-type: none">- Resource access stances. Here Audrey is 'proactive' (requesting a consultation), but the resource (a test) is 'not found'.	<ul style="list-style-type: none">- e.g. determine whether the NCGS person's pathway is relatively proactive: with a high intention to mobilize vectors (relationships, doctors, etc.) or not.
"In early 2014, Audrey meets the sister (R3) of her brother's (R1) partner (R2) who advises her to stop eating gluten. There is mediation. R3 and Audrey did not know each other."	<ul style="list-style-type: none">- The length of the chains of relationships (number of intermediate vectors between a contact and the NCGS person);- The type of relationship (here family from R1 to R3).	<ul style="list-style-type: none">- e.g. identify the most important spheres of embedding according to the periods or resources sought: medical, family, friends, professional spheres, etc.

In some ways, the choice of data to be collected, coded and statistically processed is dependent on the research hypotheses, and this methodology is relatively adaptable in this regard. If the researcher is interested in the effects of gender homophily, data on the resource vectors' gender may be collected and taken into account for each of the sequences. If it is a case of studying the effects of the strength of the tie on the sequence impact on the trajectory, then the resource vector relationships can be characterized in detail (seniority, frequency, type of relationship, versatility, etc.) in order to try to explain why specific resources have a greater impact than others.

The researcher can populate a table once the previous steps have been completed (table 8.2). From an architectural viewpoint, each line corresponds to a single sequence and therefore begins with an identifier. The rest of the information is entered in columns from left to right. The lines follow each other chronologically and provide step-by-step details of the person's trajectory and interest variables. Once all of these sequences have been listed, the next line concerns another trajectory of another person.

In the tables 8.3 and 8.4, Arnaud's trajectory is outlined sequence by sequence³⁵. Note that a variable can be specified, as needed, by introducing sub-categories: in our table, the 'Information' resource type includes the 'Advice to stop eating gluten' sub-category (distinct from 'Medical diagnosis'), with the latter being specified according to whether the advice comes from someone working in the medical field or not. Here again, it is a matter of coding according to the intended treatments: what depth is sought or necessary? These variables are entered in the table with numerical values

35. For readability, only a few sequences are provided. Arnaud's trajectory normally includes 18 sequences, i.e. 18 lines.

Table 8.2. Contextualization data of sequences.

A	B	C	D	E	F	G	H	I
ID	Sequence number	Person's name	Person's code	Linearized period	Period code	Non-linear period	Mobilization year	Mobilization month
184	1	Arnaud	RF002	Case history	1	Case history	2008	1
185	2	Arnaud	RF002	Case history	1	Case history	2009	1
186	3	Arnaud	RF002	Diag error	2	Diag delay	2014	1
188	4	Arnaud	RF002	Diagnosis	3	Diag delay	2014	7
189	5	Arnaud	RF002	Successful GFD	5	Diag delay	2014	7
191	6	Arnaud	RF002	Successful GFD	5	Diag delay	2015	2
192	7	Arnaud	RF002	Successful GFD	5	Diag delay	2015	6
193	8	Arnaud	RF002	Successful GFD	5	Diag delay	2016	8
197	9	Arnaud	RF002	Wheat cons	6	Wheat cons	2017	4
198	10	Arnaud	RF002	Wheat cons	6	Wheat cons	2017	6
199	1	Lauriane	BDN004	Diag error	2	Case history	2010	1

GFD: gluten-free diet.

Table 8.3. Resource characterization data.

J		K	L	M
ID	Type of resource (01)	(02)	Stance	Access name
184	Medical diag	Info	Not found	His community GP
185	Medical diag	Info	Not found	His community GP
186	Info/GP	Info	Received	A GP for food intolerances
188	Medical diag	Info	Received	Laboratory B.
189	Info/anc varieties	Info	Received	A GP for food intolerance
191	Commercial supply	Info	Proactive	An artisan baker
192	Medical diag	Info	Proactive	Laboratory B.
193	Info/GP	Info	Proactive	Laboratory B.
197	Tolerance detection	Exp./Cog.	Proactive	An artisan baker
198	Info/anc varieties	Info	Proactive	An artisan baker's handbook
199	Info/foodstuffs overall	Info	Proactive	Dr Delabos's book

along with a label³⁶; a data dictionary on a separate sheet could be useful when collaborating on the file, as is the case when several interviewers each have to add their own interviews. Leaving an empty cell for comments or explanations on the sequence at the end of the line (last column) is also a way of keeping track of the transformation of narratives into coded data.

36. As in the previous footnote, only the labels are included in the tables.

Table 8.4. Resource access characterization data.

	N	O	P	Q	R
ID	Access category	Access type	NR mediation type	Relation type	Chain length
184	Medical	NR mediation	Medical staff		
185	Medical	NR mediation	Medical staff		
186	Medical	NR mediation	Medical staff		
188	Medical	NR mediation	Medical staff		
189	Medical	NR mediation	Medical staff		
191	Non-medical	NR mediation	Commercial facility		
192	Medical	NR mediation	Medical staff		
193	Medical	NR mediation	Medical staff		
197	Non-medical	NR mediation	Commercial facility		
198	Non-medical	Relation		Friends	1
199	Medical	NR mediation	Book		

NR: non-relational.

However, some difficulties may emerge when proceeding that way. These generally stem from the data collection process, which requires a clear definition of the relevant information to be collected prior to the interview stage. They can also result from memory biases that can undermine interviewees’ ability to indicate specific years or months when they accessed a resource regarding their oldest or most eventful trajectories. More generally, they may fail to mention a sequence, an intermediary, access to a resource, etc. Apart from the above-mentioned elements, some people’s trajectories are not really easy to code (exploratory aspect of the interview; very short trajectories with rapid adoption of a gluten-free diet, etc.) or they complicate the task, e.g. for trajectories with successive diagnoses, periods when the person gets back to eating cereals containing gluten, followed by an umpteenth diagnosis, so coding rules are essential. Upon what criteria should the trajectory be linearized? For our purposes, we considered that sequences that set a precedent (a change between periods) rooted the remaining sequences in that period until the next pivotal sequence. In other words, if there has been a diagnostic confirmation (e.g. a gluten challenge³⁷) during a prior ‘successful gluten-free diet’³⁸ period, this resource may not have been accounted for in the ‘Diagnosis’ period. In the light of these elements, we were able to code the trajectories of 31 out of 38 people interviewed, with an average of 11 sequences/person (range 4-25) for a table including 346 sequences (in rows) and 32 variables (in columns).

37. Medically-assisted reintroduction of gluten as an NCGS diagnosis confirmation measure: due to the absence of biomarkers, a gluten challenge helps to monitor the recurrence of symptoms and to highlight sensitivity. This practice is very seldom used (n = 2/38) and generally concerns personal experiences of intentional or accidental gluten reintroduction (Akermann and Coeurquelin, 2021).

38. A ‘successful gluten-free diet’ is defined as the period during which the individual undertakes and succeeds in completely eliminating gluten source foods from their daily diet. This contrasts with the ‘intermittent gluten-free diet’ in which the NCGS person limits his/her consumption of gluten-containing products but does not consider strict avoidance. This period highlights the many difficulties associated with the prospect, implementation and maintenance of a long-term restrictive diet. An intermittent gluten-free diet may be a prerequisite for the adoption of a successful diet.

The file can then be exported into a statistical software program (SPSS in our case) for processing. This enabled us to:

- know how many information access sequences had been proactively or passively dealt with throughout the trajectory. This indicated that most of the resources obtained during trajectories had been proactively sought by the respondents, i.e. 80% of the sequences, while 20% of the resources were obtained passively).
- know what types of resources were acquired during the trajectories by taking advantage of the division into periods to identify those that had mostly been obtained at the time of the transition to a gluten-free diet, for example. Regarding this dietary change period, websites and other media were the most important non-relational vectors to support NCGS subjects in their sometimes difficult first steps of gluten avoidance: 80% media use during this period with concerned people seeking recipe ideas, information on suitable food products, support, etc.
- know what types of mediation were the most resourceful according to the stages in order to quantify the importance of the different ‘worlds’ (medical, commercial, digital, etc.) and social circles (family, friends, professional, etc.) in the case of NCGS, its diagnosis and the dietary changes induced. Generally speaking, while the medical world was over-represented at the time of diagnostic delay and diagnosis, the periods when a gluten-free diet was adopted or when there was a switch to artisanal cereal products were much more reliant on family relations, friends, media and market spaces.
- know when health professionals were involved, how many were consulted on average before diagnosis and whether they belonged to the conventional or alternative medical world. Note, in this respect, that 25% of the respondents consulted at least one health professional during the diagnostic delay period: the average was 2.7 practitioners, all orientations combined (6 maximum). ‘Information’ accounted for most of the resources, 55% of which came from conventional medical practitioners and 24% from alternative medical sources³⁹.

In summary, statistical processing thus helps to highlight and generalize dietary change processes in NCGS people, the resources used by eaters in their dietary transition, while also considering the positions of key influencers (Golley et al., 2015). After a sometimes long data preparation period (producing a narrative, coding, building a database), results are very quickly obtained based on common statistics (frequencies and cross-tabulations). To supplement these results, interviews are also valuable sources of information that can be processed via thematic analysis. For the purpose of this project, these analyses focused on stances with regard to medical institutions, on bodily perceptions as a diagnostic resource in cases of clinical uncertainty, or on behaviors and practices during commensal eating (avoidance and compensation strategies), etc. The qualitative analysis also enhanced insight on what happens when NCGS individuals in turn become key influencers. The quantified narrative method can then, if necessary, be backed by a bidirectional approach whereby the NCGS person is also considered to be a resource transmitter. An initial objective could be to focus on resources going from the alters to the ego, and then to assess this change in

39. In this research, ‘alternative practitioners’ include health professionals who are not medical doctors (osteopaths, acupuncturists, naturopaths, energeticists, etc.) and professionals with medical degrees who practice non-conventional approaches (homeopaths, kinetic-osteopaths with the Poyet method, for example).

the NCGS person's status, from the receiver to the transmitter. Finally, overall these two approaches are complementary: some statistical analyses could be illustrated and better understood with the help of comprehensive qualitative analyses, and the latter could be generalized with the support of the statistical analyses.

► Tailoring the method to the usage context: adjusting the reminders to the study field

When we used the quantified narrative method in the framework of the *Gluten, Mythe ou réalité?* project, it did not seem to require any further adaptation to the people surveyed than could be required in field surveys using semi-directive sociological interviews with a biographical orientation: the meetings and exchanges between the interviewers and respondents remained essentially the same. Note that some respondents had a propensity (often the most highly educated) to focus the narrative on their opinions or motivations rather than on very factual elements that they sometimes felt were trivial, or even useless, e.g. dates, types of relationships, website or store names. In such cases the interviewer constantly had to redirect the interview to focus on the action so as to be able to obtain all the information necessary to code the narrative via specific reminders. However, after a few minutes of being interviewed, the respondents understood the researcher's systematic interest in 'the details' and tended to provide the expected details themselves.

The main adaptation of the method to the context was a response to the need to tailor the reminders to the studied fields. In some fields, most trajectories were punctuated by similar sequences or research phases for specific types of resources needing discovery through exploratory interviews, in order to be able to issue systematic reminders in the semi-structured interview phase. For example, in the case of gluten-free diets, it may be useful to know that some people seek moral support from their close circle of friends and family so as to systematize reminders geared towards discovering the presence or absence of this type of resource in people's trajectories. When studying the creation of an association, e.g. CSA, purchasing group, etc., a number of steps are inevitable, such as the drafting the statutes. The researcher must therefore bear in mind these 'obligatory stages' in order to encourage the respondent to address them during the interview, if he/she does not do so spontaneously. This brings us back to the problems linked to the semi-directive interview process for which a trade-off must be found between the systematization of the follow-up questions and the non-directive phases.

The analytical part is not affected by these adaptation needs, unless it seems necessary to adjust the variable categories according to the cases encountered, i.e. specific enough to encompass the heterogeneity of life trajectories, and generic enough to obtain generalizable results.

Note also that this method requires in-depth interviews and, depending on the research subject, respondents may have to recall sometimes unpleasant or intimate events. In the case of women and men who declared themselves sensitive to gluten but were not celiac, a number of contextual elements contributed to prompting respondents to quite readily exchange information with us : their sometimes highly medicalized backgrounds, the proactivity of their approaches, the resolution of their problems, the scientific thematization of this long-discredited disorder and sometimes the use of telephone interviews.

Quantified narrative research is a mixed analysis method that—after some adaptation—facilitates detailed analysis of individual or collective trajectories of eaters who are actively making changes in their eating practices. The method could be of interest to researchers wishing to understand the dietary bifurcation processes involved by looking beyond the studied individuals' rationales to highlight the action contexts. Understanding the role of relationships, mechanisms and, more broadly, the factors underlying food practice implementation, is an avenue for development open to researchers seeking to analyze the way food practices are adopted and disseminated in specific social and territorial contexts.

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Chapter 9

Auto/biography: a comprehensive approach for accessing eaters' subjectivity

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This qualitative method draws on research material entirely produced by the research subjects themselves, in the case of both biography (the study of second-hand personal documents) and autobiography (when the researcher commissions a subject to write about him/herself). In both cases, the aim is to understand these writings as social products. The objective is not so much to focus on the accuracy of the facts but rather to reconstruct reality as perceived or told by the research subjects: their reality.

"I trace the origin of my interest in the document to a long letter picked up on a rainy day in the alley behind my house, a letter from a girl who was taking a training course in a hospital, to her father concerning family relationships and discords. It occurred to me at the time that one would learn a great deal if one had many letters of this kind". This anecdote, told by William Isaac Thomas in *The Polish Peasant* (Thomas and Znaniecki, 2012), is often used to situate the start of sociological interest in auto/biographical work. The book was published in the early 20th century, when sociology still needed to prove its worth as a scientific discipline. At this time, it was dominated by Durkheimian tradition, in which social facts are treated as real objects: the researcher is in the foreground and their role, whether they are formulating hypotheses, generating structural analyses or prompting during interviews, is central. Thomas, who would become a figure of the Chicago School of Sociology, proposed instead using the subjectivity of individuals as a starting point to form an interpretative framework for social phenomena. Having obtained funding from a private foundation for a study on the lifestyles of immigrant communities in Chicago (the population of the city had boomed in the space of a few decades), he worked from a corpus of letters, accounts and autobiographical narratives written by Polish migrants. Although these documents were second-hand, he showed the value of this method by arguing that he would probably never have accessed such rich material through more traditional methods. This vast study gave rise to the 'Thomas theorem', a kind of self-fulfilling prophecy stating that individuals' behaviours are explained by their perception of reality and not by reality itself: "if men define situations as real, they are real in their consequences".

► Institutionalization of the method

This tradition of research on life stories expanded throughout the 20th century, then it was institutionalised, in English-language literature, under the term “auto/biography”. The distinction between ‘auto’ and ‘biography’ comes from the fact that the method seeks to embrace two distinct tools that are nevertheless similar from an epistemological perspective, in that the material is entirely produced by the research subject. Biography refers to the study of second-hand personal documents that the sociologist has identified as potentially meaningful (e.g. the Polish migrants’ letters studied by Thomas and Znaniecki). Autobiography implies that a subject has been commissioned beforehand by the sociologist to write about him/herself. This work may be written by the research subject or the sociologist him/herself (e.g. future students of the University of Chicago Department of Sociology were asked to write their own autobiographies as a way of sharpening their reflexivity regarding the social world). In both cases, the aim is to understand these writings as social products. In terms of institutions, an Auto/Biography Study Group was officially created at the British Sociological Association following the 1992 ‘Sociology, Biography and Autobiography’ conference at the University of Manchester. The following year, an issue of the highly legitimising journal *Sociology* bringing together 10 contributions on auto/biography as a research method was published.

In France, the method would be used in the social sciences from the 1970s to the 1980s. At this point, it leaned on the work of the Chicago School and also took inspiration from work in other disciplines, particularly history and literature. In sociology, there were two ways in which the method was institutionalised. The first was a 1986 special issue of the journal *Actes de la recherche en sciences sociales* dedicated to the biographical method and edited by Pierre Bourdieu. This issue contained 13 publications, some by renowned researchers such as Howard S. Becker. It had a large readership, especially because the issue fuelled a lively debate (as explained later in this chapter). The second contributor to institutionalisation was the publication of two methodological manuals a few years later. The first was *La méthode biographique* (i.e. ‘the biographical method’) by Jean Peneff (1990), which drew both on the works by researchers of the Chicago School, whom the author met and questioned at length when staying in the United States, and on his own fieldwork among Algerian industrialists, rural teachers and trade-union activist labourers. In Peneff’s view, the aim is not so much to reconstruct the memory of the research subjects as to collect precise information on their social environment. He prefers autobiographies—i.e. “accounts shaped and constructed according to a pre-established schema, of significant length, with details and consistent sequencing, accounts obtained following a research effort undertaken with the help of a sociologist or on the initiative of the narrator who intends to write a demonstrative document”⁴⁰ (p.102)—over life stories, which he considers to be uncontrolled, free interviews. Later, in 1997, Daniel Bertaux published *Les récits de vie*⁴¹ (i.e. ‘life stories’), a classic work that is well-known to sociology students. It helped

40. Translator’s note: Unless otherwise stated, all translations of cited foreign-language material in this article are our own.

41. This work has not been translated into English, but prior to the publication of *Les récits de vie*, Daniel Bertaux copublished an article on the same subject in the *Annual Review of Sociology* (see Bertaux and Kohli, 1984).

to legitimise using the discourse of research subjects as a starting point, while also diluting the auto/biographical method in what he more broadly refers to as life stories. This is probably why the very term 'auto/biography' is much less used in the social sciences in France than it is in English-speaking countries.

Finally, there has been renewed interest in and use of the auto/biographical method in recent years, for two concurrent reasons. The first is the development of spaces where individuals can tell their stories easily and freely every day (social networks being the perfect example of this). This has encouraged the emergence of netnography, a research method that analyses the communication acts of members of a virtual community. The second is the rise of forms of reflexivity (particularly relating to food and diet) and processes of individuation in contemporary societies. This considerably strengthens the auto/biographical venture: paying attention to oneself and telling one's story become everyday actions that allow the formulation of ego-narratives via webpages, discussion forums and sessions with a psychologist or coach. As stated in CollectiF. B.'s recent book *Parler de soi* (2020), "the biographical approach is at the heart of the renewal of the social sciences".

► Benefits and limitations

Advocates of the auto/biographical method argue that it is a comprehensive approach that is relevant for accessing individuals' subjectivity and thereby grasping current stereotypes and the influence of social norms on discourses. The objective is not so much to focus on the accuracy of the facts as to reconstruct reality as perceived or told by the research subjects: *their* reality. In the case of biography, the research subjects do not know *a priori* that they are taking part in social sciences research (e.g. when they wrote their personal letters, the Polish immigrants in Chicago could never have imagined that they would later be analysed by sociologists). The material collected is second-hand and the researcher seeks to situate it in the socio-historical context in which it was produced. In the case of autobiography, the research subject knows that they are taking part in social sciences research. The material is first-hand and the researcher's question can therefore provide some guidance or direction (e.g. "could you write about your relationship with food since your childhood?"). Nevertheless, the aim is still to influence the subject's 'work' as little as possible. They are the one who really produces the research data, and this has two major advantages. The first advantage is epistemological: the subject is given great freedom in terms of the content (the researcher is not present to shape, control or prompt the narrative), temporality (the writing can be done over a short or long period and can be paused then resumed) and influences (unlike in a more conventional interview situation, the researcher is absent here and the subject can, if necessary, ask friends and family who might help them remember the events in the account). The researcher's role is deliberately minimised, and the position is described as non-hierarchical. In fact, advocates of the auto/biographical method stress that researchers could end up disrupting the storytelling, particularly when their social backgrounds differ from that of the research subject (in terms of class, race and gender). The social desirability bias (producing a discourse believed to be expected by the researcher) is the main risk of an asymmetrical relationship. The aim is therefore to give complete freedom to the research subject, with supposedly emancipatory prospects, particularly from

a feminist point of view: writing about oneself and reconstructing one's life journey can aid the development of critical reflexivity about one's own social condition and encourage dialogue with other members of one's community. The second advantage of the auto/biographical method is more pragmatic, i.e. it saves both time (because it is the research subjects who produce the material, so part of the research takes care of itself) and money (since the research is not done face to face, the researcher does not need to travel, as they can communicate remotely by email).

However, the method has also attracted criticism, firstly relating to the exercise itself: writing, and particularly telling one's story in writing, requires free time and skills. The very instruction to write can therefore exert a kind of symbolic violence when it is given to people who are not accustomed to this mode of expression. They may feel unable to express their ideas clearly and write without spelling mistakes or syntactical errors. In short, they may fear they will be judged negatively. It is important to consider this possible social selection bias.

More broadly, the method has been the subject of major debates in the social sciences. In 1986, Pierre Bourdieu coordinated *L'illusion biographique* (i.e. "the biographical illusion"), an issue of the journal *Actes de la recherche en sciences sociales*, which he edited at the time. In this issue, he expresses two key lines of criticism. The first concerns the material collected in auto/biographical studies, which he says lends itself to a "sociology of suspicion": how could one not doubt the veracity of subjects' words? How could they not be the product of lies, or at least the product of deformation or a hiding of reality (which may be conscious to a greater or lesser extent)? Between omission and selection, he emphasises the complexity of the relationship between the life lived and the life described in writing. He therefore draws attention to the illusion produced by a reconstructed identity, a smoothing or homogenisation of the journey, and a desire to retrospectively give meaning to events that did not necessarily have meaning when they happened. He also criticises the method itself, particularly the fact that this kind of research is conducted almost in the absence of the researcher. Since it is a narrative exercise, the individual perception of events takes precedence. Yet the value of social sciences research, he believes, lies in putting this individual point of view in perspective with a more collective point of view where social structures are expressed. In other words, as sincere as the research subject may be, they cannot replace the researcher, whose job is precisely to connect the micro and macro levels, and to situate an individual's words and reasoning within wider social mechanisms, which are usually inaccessible to the research subject. These criticisms fuelled a lively debate, including within this issue of *Actes de la recherche en sciences sociales*, because some of the researchers upon whom Bourdieu called (particularly Mickael Pollack) worked using this method and had not imagined they would be contributing to a critical reflection on the subject. However, as emphasised much more recently by Nathalie Heinich (2010) on this matter, Bourdieu perhaps became caught in "the illusion of an illusion" for reasons other than the epistemological. She tells of how he jumped belatedly onto the biographical bandwagon: others had already been working using this method for a long time, which could explain this exacerbated criticism designed to 'mark the territory'. She also emphasises that Bourdieu was suspicious of 'analytic treatment', since he worked for sociology and therefore wanted to distance himself from any

psychoanalytical undertaking. Nevertheless, a few years later, he used this method in his book *The Weight of the World*. Clearly, the auto/biographical method has caused and continues to cause opposition between the adherents of a deterministic sociology that primarily focuses on the influence of social structures and those who defend a sociology more interested in individuals' capacity to act and their reflexivity.

► Application to food and eating

Although more and more social sciences studies are integrating the auto/biographical approach, it raises particular questions for those interested in studying food and eating.

Firstly, the fact that the method explicitly targets people who have agreed to write about themselves and their eating practices is significant. It leads to a selection of the research subjects according to their social characteristics. Reflexivity relating to food is effectively socially situated: even if the most vulnerable are not willing to eat absolutely anything, numerous studies show us that those at the top of the social ladder give the most consideration to the potential impact of diet on their health, their bodies or the environment. Diet is a long-term issue that traps the poorest sections of the population in their urgent everyday needs and allows wealthier people to consider the future. Calling on this reflexivity therefore leads to addressing people who have significant socio-cultural capital, even if this is done implicitly. Therefore, researchers interested in this method need to consider this possible social selection bias⁴², as well as the ethical issues surrounding its use.

Furthermore, auto/biography goes against a research tradition aiming to reconstruct eating practices as faithfully as possible in order to get an accurate idea of real behaviours. After all, unless we give a camera or video camera to the research subjects or post a researcher in their homes (which would be both scientifically and ethically dubious, as was magnificently addressed in the 2003 film *Kitchen Stories*), sociologists must often content themselves with reconstructing the eating practices of their research subjects, orally or in writing. The 24 h diet recall method—a conventional nutritional science tool that has now been adopted and updated for social science research applications (Bossard et al., 2010)—is actually quite an effective way of objectifying the dietary practices of individuals. Moreover, it allows sociologists to establish a dialogue with other disciplines (particularly nutrition and epidemiology), which work at a scale requiring precision about food consumption. The auto/biographical method considers that capturing norms relating to food is just as important as capturing real practices: it aims to take the words of subjects seriously, because even if they are far removed from reality, they are nonetheless particularly meaningful. In this, it accommodates interdisciplinarity less, but allows researchers to go further in the sociological analysis of the processes involved in socialisation, the moralisation of behaviours and the performativity of discourses, trends and norms. To this end, it can be used to complement other methods (observations, interviews, questionnaires, etc.) or with the support of tools (particularly photo and video), but it can also be used more autonomously and independently, as shown by the two examples below.

42. Above all, this bias needs to be considered for autobiographical research among the general population. Nevertheless, we should remember that the biographical method was developed in Chicago to understand the subjectivities of immigrant peasants and labourers, and therefore counterbalance the official reports that too crudely described the lifestyles of these populations subject to discrimination.

► Two food autobiography examples

Intermittent organic food eaters (Lamine, 2008)

In her study, Claire Lamine (2008) looks at ‘intermittent organic food eaters,’ defined as individuals who buy organic products on an irregular and variable basis. More broadly, in a comprehensive perspective, she captures the plurality and variability of eating practices and choices in contemporary society, in connection with food crises. The author uses the approach of dietary trajectories to identify why and how eaters adopt “organic” food in some of their practices. In other words, the study identifies what creates continuity or change in these trajectories, paying attention to the triggers for change. The research involved collecting food autobiographies from subjects (15 autobiographies obtained from the 22 eaters questioned) so that they could “freely narrate their life stories in their connection with food” (p. 30). The initial instructions were short and there was no temporal division. Just a few themes were mentioned, for example childhood memories and current preferences. After a few attempts, the author stopped mentioning the theme of food risks in the initial instructions, to avoid influencing the subjects on this theme and to leave them free to address it or not. This method “reproduces the way in which eaters retrace their journeys themselves and reconstruct their narrative structure and their categorisations, with more autonomy from the researcher’s questions” (p. 60). Even if in the collected narratives, the subjects more readily highlight practices that are valued than their real practices, complementary tools were used after the food autobiography: comprehensive interviews and, for some subjects, observations of their buying, preparation and meal eating sequences.

Lamine emphasises the diversity of styles and content in the food autobiographies. Through freedom of categorisation, the food autobiographies highlight relationships with food. There is particular attention to the sensory relationship, “in all likelihood because the bodily encounter with food is more easily written in a form close to the private diary than described aloud in a discussion with an interlocutor who might pass judgement” (Lamine, 2008, p. 69). Beyond this, the texts reveal pragmatic relationships (having control over one’s diet or not) and social and familial relationships (opposition between the individual and the group) with food. Even though the individuals do not express themselves chronologically as is usually the case in life stories, they show important stages in their life cycle and recount one or more episodes of their lived experience that intertwine with or complement others. By analysing what eaters themselves say about their choices, we can identify categories of trajectories to adopting “organic” products by making “visible the perceptual, cognitive and axiological operations that are otherwise buried in routines and doctrines” (p. 10), as emphasised by Francis Chateauraynaud in his preface to the book.

Gender, class and food (Parsons, 2015)

Based on the autobiographical food narratives of 75 men and women, this book analyses contemporary British practices and representations relating to food. The author used a constructivist ‘grounded theory’ approach to gain insight into how food helps to define and maintain gender and class boundaries. The emphasis is more on narration than on real eating practices. What interests Julie M. Parsons is the way in which individuals tell their stories and recount their food memories, and how they

make them public. The study therefore consists of an analysis of the social norms at the intersection of food, gender and class. She invited potential participants, identified online or via her extended social network, to write their food autobiographies and then to send them to the following email address, created for this purpose: ourfoodstories@email.com. The instruction was deliberately vague, i.e. to leave the subjects as much freedom as possible, including when it came to the ways of writing and depiction (they could write whatever they wanted, however they wanted, whenever they wanted, with whomever they wanted). The choice of this method (virtual contact, freedom of writing, asynchronous interview) is justified by the author because it is supposedly an emancipatory and non-hierarchical approach to research, allowing the respondents to take part on their own terms and in their own way. Once the texts had been collected, a follow-up email was sometimes sent to clarify certain elements. A traditional thematic analysis was then carried out. Parsons explains that at this stage, temporality was the main issue: reconstructing childhood memories with adult eyes. Memories are often recounted in extraordinary terms. Moreover, it is above all events perceived as extraordinary that are described in an autobiographical work. She gives the example of a 51-year-old man who enthusiastically and precisely described the “big breakfasts on Sundays made by [his] Dad with bacon, eggs, tomatoes, mushrooms and fried bread eaten out on the terrace in summer looking out over the garden” (p. 29). Whether or not this memory has been idealised is not the question: what interests the author is identifying the forms of food socialisation and the associated stereotypes, particularly gender and class stereotypes. Here, the memories that this man shares about his father's cooking are epicurean, spectacular and extraordinary. The opposite is true of the everyday meals prepared by mothers, whether they are glaringly absent from the accounts or associated with discussions experienced at the time as boring about nutrition or table manners. The accounts therefore show a gendered division of work in the domestic sphere: food as work for women, with a focus on care, and food as pleasure for men, with fun and recreational dimensions.

» A food biography example

Writing about one's own or another's life is nothing new. It is even becoming increasingly widespread, including in the case of autism. With the increase in autism and the growing visibility of autistic individuals without intellectual disabilities, the 1990s saw accounts spread spectacularly, particularly in English-speaking countries. This movement, which came later in France, emerged with the publications of Josef Schovanec (a high-profile philosopher, writer and activist for the dignity of people with autism). These works provide rich material to help us understand the characteristics of autism, confirm avenues for research and provide a new perspective on the phenomenon. The testimonies written by parents of autistic children have also proven to be a valuable source of information. Alongside specialist works (medical, psychological, psychiatric, etc.), they provide substantial help, shedding light on the everyday reality and the diversity of family experiences.

As part of a doctoral thesis in sociology on the food socialisation of children with autism spectrum disorders (Rochedy, 2017), we conducted an analysis of biographies of accounts by autistic children's parents. We looked at these alongside semi-structured interviews with mothers and fathers. We chose this method for several reasons. Firstly, it allowed

us to respond to a common criticism from autism professionals regarding data from the qualitative phase. According to them, since the interview framework focused primarily on matters of food and diet, it was “normal” that parents focused on and considered these aspects⁴³. While these professionals claimed that the spotlight needed to be turned instead on other difficult dimensions of everyday life, particularly those relating to autism diagnostic criteria⁴⁴, biographical analysis made it possible to collect discourses without the researcher’s intervention, regarding the children’s eating behaviours and the effects on those of their families. Furthermore, parents’ accounts were preferred over other sources such as books written by people with autism or films and television series on this subject, which convey an image essentially limited to autism without intellectual disabilities: the famous Asperger syndrome, an intellectual genius handicapped “only” in their social interactions. Instead, the objective was to explore the diversity of forms and experiences of autism. Finally, with parents’ accounts having become increasingly common since the 2000s, they offered a highly diverse interpretative framework for the family experience of autism, and therefore a large and original corpus⁴⁵.

This documentary research started in the ‘conventional’ electronic databases: Francis, PubMed and Web of Science. However, the results were inconclusive, because the scientific literature in this domain is limited. It was instead the database of the French *Centre Ressources Autisme Midi-Pyrénées* that allowed us to identify the works written by parents, as well as some more general search engines⁴⁶. Our research focused on accounts published in French by parents between 2008 and 2013. Our database excluded accounts published by the siblings or grandparents of autistic children, two-voiced narratives not written only by parents (for example, parent and child with autism or parent and health professional), parents’ guides and comics⁴⁷. The aim was to concentrate solely on accounts describing the experiences of parents responsible for feeding their autistic children.

In total, 29 works were chosen. They were published by French publishers such as Albin Michel and Robert Laffont, which attests to the democratisation of the phenomenon. These stories mainly take place in France, but other countries, and consequently other food cultures, are present: Quebec, the United States, Norway, Italy, Great Britain and the Netherlands. The accounts are mainly written by mothers. Of the rest, half are written by fathers and half by both parents. Altogether, they cover 28 families⁴⁸ with

43. Food issues are very commonly associated with autism. Nevertheless, studies report varying frequencies of “problems with food”, due to the absence of any definition of this concept and the plurality of disciplines interested in the issue (Rochedy, 2017). It may come in the form of food selectivity (eating a small variety of foods, repetitive choice, marked preferences, refusing new foods, etc.), sensory sensitivity, problems with social behaviour at the table or more specific issues (problems with chewing, merycism, dysphagia, etc.).

44. These are the diagnostic assessment criteria making up the autistic dyad in the DSM-5: deficits in communication and social interaction, and restrictive, repetitive behaviours and interests.

45. Of course, we are aware of the limitations of using this type of second-hand tool. Composing an account requires writing skills and time. Consequently, this corpus is not representative of the whole population of parents with an autistic child.

46. The main keywords were: “autism”, “pervasive developmental disorders”, “autism spectrum disorders”, “accounts”, “books” and “parents” (translated from the original keywords in French).

47. Guides and comics published by parents were excluded because the nature of the data provided did not allow “detailed comparison of similar journeys” (Peneff, 1990, p.80).

48. One family had published two books: the first (2008) as a couple and the second (2012) by the father alone.

diverse familial situations and 1 to 3 children. In total, 33 children with autism are present in these accounts. Most of these are boys, in line with the prevalence statistics. The children represent very varied forms of the autism spectrum, but the precise diagnosis is not always clearly stated. One of the limitations of using biography as a research method lies precisely in the difficulty or even the impossibility of contacting the people in question to collect missing or incomplete information.

Once identified, the 29 works were analysed with a diachronic and synchronic thematic interpretative framework. These two approaches allowed us to understand the eating behaviours of children with autism in all their complexity. We wanted to better describe and understand the food socialisation of these children, from birth to adolescence, by simultaneously analysing the construction of the food repertoire, the evolutions of social learning of table manners and the everyday management of food by those feeding the children. The diversity of the profiles and lived experiences helped to shed light on certain aspects that are little-studied in the scientific literature and to enrich the themes raised in the semi-structured interviews. The thematic analysis revealed heterogeneous temporal patterns, both in the food trajectories of the children and in the work done by the parents. Some structured their accounts into 'before' and 'after' diagnosis, while others described their parental experiences over a longer period, from the birth of their child or children to the time of writing the work. Consequently, it was possible to identify several phases of intensifying and changing reflexivity relating to food. By reconstructing their own life story and that of their autistic child, the parents give meaning to the difficulties encountered and transform an individual experience into a collective experience.

Nevertheless, there are biases in this method. Firstly, there are sometimes gaps in the parental accounts: information on the sociodemographic characteristics of the subjects is not systematically provided and the contexts are not always precisely described. For example, the parents do not always mention the age of the children when they describe an event. They do not necessarily describe the composition of the meals or the presence and role of guests. Secondly, the data allowing us to study the food socialisation of children with autism mostly concerned eating with family. It would have been useful to collect elements that told us what happened in other places of socialisation, such as nursery or school. Therefore, we believe that this tool, however relevant its use, finds its value and legitimacy when employed as a complement to other research methods.

►► The future of the auto/biographical method

To take this exploration further, we believe it would be useful to contemplate the future of the auto/biographical method. Numerous technical innovations are emerging and could change its form and the way it is practised. These include voice recognition, which makes it easy to put spoken accounts into writing, smartphone videos allowing individuals to film themselves and certain mobile applications for recording slices of our lives in photo-accounts. These different innovations could potentially threaten the very existence of the method, due to the fact that the auto/biographical undertaking is increasingly conducted via these media on an everyday basis, to the detriment of writing. Although our lives are probably described differently in our oral and written accounts, we nevertheless believe that it would be detrimental not to consider the potential benefits of these tools. Firstly, they could help to somewhat democratise the

method, particularly by making it more accessible to people from social groups in which writing can be viewed as symbolic violence. Secondly, they could also complement or even replace the writing phase, thereby becoming a useful medium for biographical interviews.

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Chapter 10

‘Follow-the-thing’: tracing food products to chronicle their sociospatial biography

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This chapter presents the ‘follow-the-thing’ methodology that was developed by human geography to investigate food products and practices. The aim is to trace the spatial trajectories of food products for the purpose of recounting their sociospatial biographies. This approach highlights the actors involved in the food circulation process and characterises their different roles. It also explores eaters’ geographical imaginations, their representations regarding the origin of foods, and the impact of this knowledge on their relationship with these foods.

Human geography was for a long time mainly focused on food through production, agricultural landscape and *terroir* studies. It was not until the second half of the 20th century that the discipline shifted its attention more to the issue of food practices. In France, Max Sorre began conducting research on food diets in the 1950s, while Frederick Simoons in the United States studied food proscriptions in the 1960s. Through this geocultural approach, food practices are mapped and factors explaining them are identified. However, geographers have been slow to develop a robust methodology for studying food behaviour. In France, cultural geography researchers began focusing studies on gastronomy and ‘food cultures’ (Fumey, 2010) from the 1990s onwards. Meanwhile, daily food consumption became a subject of investigation for geographers in the English-speaking research community, particularly under the influence of a ‘cultural turn’ that gave primacy to representations and meanings in social science investigations. Paradoxically, this so-called cultural approach has been developing with a much more political and social leaning in the English-speaking academic world than it has in France, where it has a more patrimonial bent.

In the 1980s, under the influence of this cultural turn, research on geographies of consumption developed in the English-speaking world (and mainly in Great Britain) which sought to broaden the economic geography research field beyond the production sphere. Geographers began proposing ways of studying the spatial nature of food consumption within this context. These approaches no longer consider space solely as a neutral physical medium where supply chains governed by political and economic constraints expand, but also as a material and ideal resource for eaters and other food system actors.

A first approach developed by David Bell and Gill Valentine is more specifically concerned about the geographical aspects of food consumption. In their book *Consuming geographies* (1997), these two British geographers proposed a multi-scalar interpretation of consumption. They took scales ranging from the body, the home, the community, the city, the nation and the world into account, as well as the multiple linkages between these scales, to focus on the spatial configurations and social itineraries that are established through food uses.

►► The follow-the-thing approach

A second approach proposed in the early 2000s focuses more on food than on eaters. This methodology involves following food along its spatial pathway, accompanying it as it moves through space and portraying the geobiographical features of the target foods. It has been theorized under the follow-the-thing banner and thereafter was applied to studies on non-food items. The designers of this approach were highly inspired by the seminal book: *The social life of things*, edited by Arjun Appadurai in 1986. In his introductory chapter (Appadurai, 1986), the anthropologist drew on the work of Karl Marx (commodity fetishism theory), Georg Simmel (the theory of value), Jean Baudrillard (on objects and consumption as a system of signs) or Mary Douglas and Baron Isherwood (on commodities and consumption) to develop a theory on commodity circulation in society. For Appadurai, commodities have no meaning in themselves—humans attribute specific meanings to them via their transactions. As “things-in-motion” can “illuminate their human and social context” (Appadurai, 1986, p. 5), Appadurai proposes as a methodology of enquiry to “follow the things themselves, for their meanings are inscribed in their forms, their uses, their trajectories” (*ibid*).

In the 1990s, the British geographer Ian Cook sought to balance Appadurai's approach with a more conventional commodity chain approach commonly used in geographical research. He and his colleague Phil Crang jointly proposed to focus on the sociospatial ‘lives’ of food or, more specifically, to gain insight into how global flows and networks of food, people and culinary knowledge work in specific places and situations (Cook and Crang, 1996). Cook and colleagues then proposed to develop a “biographical and geographical understanding of food” (Cook et al., 1998, p. 162). Documenting the lives of food highlights the dialectical relationship between food and space, i.e. our food choices are affected by practices remotely located from our direct experience and, in turn, these choices have effects on places beyond the domestic sphere of consumption. In an explicit reference to Appadurai, Peter Jackson proposed to “trace the social geography of things” (Jackson, 1999, p. 104), including food. Similarly, Paul Robbins argued that “social, political and cultural processes invest objects with meanings [...] as exchange moves them into and out of various socially and politically defined situations” (Robbins, 1999, p. 401).

Note that this approach had already been implemented to some extent in Sydney Mintz's major book, *Sweetness and Power* (Mintz, 1985). In his study of the history of sugar, the anthropologist considered that production and consumption are closely linked, and that transformations in the use of this product have led to changes in the meanings attached to it. Nevertheless, in his book, the author played the part of a historian and ‘followed’ sugar virtually, via archives and secondary sources.

The follow-the-thing methodology had not yet theorized in the late 1990s. Although it was being used by some geographers, it was not until the 2000s that Cook published articles on the methodology itself, i.e. first on its implementation (Cook, 2004) and then on its theorization (Cook et al., 2006).

► First sketches and implementation

In his 2004 article entitled 'Follow the Thing: Papaya', Cook openly drew on the Marxist approach to geography (developed by David Harvey, etc.), which suggests to "de-fetishize commodities" (Cook, 2004, p. 642). When products arrive on the consumer's plate, they are accompanied by meanings that mask the real socioeconomic conditions that governed their production. The values attached to food are posited as natural by the eaters, whereas they are shaped by humans through their work: social relations of production are concealed in eaters' relationship to their food. Cook sought to unveil this fetish by following the route of papayas produced in Jamaica and shipped to British supermarkets. He interviewed growers, foremen, buyers, packers, importers and eaters to document a sociospatial biography of papayas. He supplemented this biography with considerations on the political economy of papaya, its history, global trajectories (routes), consumption patterns and fetishization through advertising.

Cook's article is overtly innovative—the tone is non-academic and the narrative breaks the linearity of the supply chain, while offering a collection of vignettes rather than a methodical argument. By exposing how papaya supply chain actors are connected to global trade through an "entangled range of economic, political, social, cultural, agricultural and other processes" (Cook, 2004, p. 642), the article also aimed to raise moral and ethical questions about the connection between producers and consumers.

► A more systematic theorization

In 2006, in an article entitled 'Geographies of Food: Following', Cook elaborated on the theoretical underpinning of this approach. By "following foods and telling stories with them" (Cook et al., 2006, p. 657), he argues, researchers can illuminate actors' practices in the food system, the ways in which different meanings are attributed to a given food product by different actors and in different places within that system, and the relationships between these practices and meanings. The values attributed to food thus have "spatial dynamics" (Coles, 2013, p. 259).

This methodology is a response to a question that was very common in the English-speaking human geography research community at the time, i.e. how could economic and cultural dimensions be combined in the analysis? The starting assumption was that the economic and cultural aspects are mutually reinforcing—economic practices, categories and values are informed by specific cultural representations and meanings and, conversely, cultural representations are affected by economic practices and values (Freidberg, 2004, p. 9).

Broadly speaking, the follow-the-thing approach combines a political economy approach, which describes the social relations of production and the extraction of surplus value along the supply chain, with a cultural and post-structuralist approach. By the latter approach, the practices and narratives of social actors (especially consumers) are neither pre-established by socially constituted structures nor directly

determined by the production organization, i.e. they are always subject to the interpretation, negotiation and experience of individual actors. More specifically, Cook tried to reconcile two approaches—a Marxist approach and actor-network theory (ANT). Under the former approach, it is classically considered that production produces “not only the object of consumption but also the mode of consumption” (Marx, 1971). The latter, which was very much in vogue in English-speaking geography research world at the time, rejects the dualism between ‘nature’ and ‘society’ and focuses on studying the ways human and non-human entities are assembled in networks (Latour, 1996). In so doing, it aims to confer some form of agency on the objects studied, e.g. for papaya fruit and trees, Cook pointed out (Cook et al., 2006, p. 650) the ability of the flower to change sex, the secretion of enzymes, the fruit’s tendency to quickly degrade, etc. Furthermore, actor-network theory is concerned about non-human intermediaries (contracts, regulations, conventions, etc.) that link actors and allow one actor to act remotely on another.

Cook further noted that there are also ethical and political challenges inherent to the follow-the-thing approach—it should highlight the different forms of economic exploitation in food systems while enabling the researcher to contemplate the conditions needed for the potential emergence of alternative food networks that would reconnect the different actors and overcome the fragmentation of geographical knowledge. In this methodological reformulation, and in response to certain criticism, Cook specified that rather than attempting to unveil the commodity fetishism that masks relations of production in a more or less epiphanic way to gain access to the ‘thing’, the latter should instead should be grasped, confronted, and explained. The challenge is then to offer alternative narratives to the official ones that highlight certain places and practices (e.g. a green pasture where cattle graze), while deliberately masking others (e.g. slaughterhouse).

Moreover, Cook states (Cook et al., 2006, p. 660) that the follow-the-thing approach should not only lead to greater knowledge, but also to greater empathy and understanding for those whose lives are connected to the food we buy and eat. He concludes his article by calling for the emergence of radical post-disciplinary food studies.

This methodology has given rise to a website⁴⁹ that is run by Ian Cook and his students. The aim of this portal, which lists works (student dissertations, documentaries, research articles, books, etc.) that implement this approach in a more or less acknowledged manner, is clearly ethical and educational. The goal is to reveal the hidden ingredients of everyday consumer products and expose their production conditions.

►► At the nexus between food, place and eaters

Food is pivotal to this approach, yet it does not overlook the eaters. The act of consuming is considered from the viewpoint of the consumed product, whose meanings are built and negotiated throughout the food system. These meanings are not natural or intrinsic attributes that are materially set by the production process, nor are they the outcome of an all-encompassing external culture applied to the products. Conversely, meanings are produced in different places in relation to each other, and they circulate through

49. <http://www.followthethings.com/> (queried on 2 June 2022).

various processes and practices. By bridging materialism⁵⁰ and culturalism⁵¹, this approach explores eaters' geographical imaginations, their representations regarding food origins, and the impact of this knowledge on their relationship with these foods. By this methodology, researchers may adopt a dialectical approach to the material and semiotic relationships and transactions that link the different components of food systems (production, processing, distribution, consumption, regulation, etc.).

This methodology also highlights the power and domination relationships that govern the attribution of meanings. Extensive supply networks offer more opportunities for negotiation and contention with regard to these meanings. In particular, this approach can shed light on sudden changes in meanings that can occur when food exchanges hands, or more generally on the different meanings that producers, processors, distributors and eaters attribute to the same product.

Launched by geographers, the follow-the-thing approach also focuses on links between places, eaters' bodies and food. Places are not only connected in a linear way through food. The geographer Benjamin Coles claimed that food always contains a part of the place where it was produced and where it is consumed—places are “embedded” and “embodied” in the very substance of food (Coles, 2013, p. 256). These places are defined and produced by an interaction between material, social and discursive factors, but also by interconnections between different places. When ingesting a foodstuff, one also ingests a part of these places, in both a material and a discursive sense, i.e. eating a product means eating its geography—defined as an “assemblage of places” (Coles, 2013, p. 257). The follow-the-thing approach thus allows us to examine how different places are embodied in food, and materially and symbolically ingested by eaters. The 'embodied geographies of coffee' presented by Coles, and clearly based on the follow-the-thing method, are illuminating in this respect.

This methodology has two dimensions: an ontological dimension—by asserting that foods take on their meaning in relation to the interrelated places to which they are attached; and an epistemological dimension—by considering that eaters' relationships to these foods can be illuminated by following these foods through space and by investigating these multiple places.

» A multi-site ethnography

The methodology has not been outlined in detail in the literature. A multi-site ethnography survey protocol is primarily implemented, thereby making it a distinctly qualitative approach. Cook considers that the multi-site character is appropriate for assessing the globalization of food systems, but also that only participant observation can clearly shed light on the lives of producers, processors, intermediaries and eaters. However, he goes further, calling on investigators to be highly reflexive in their practices: in a form of autoethnographic narrative (Cook et al., 2006, p. 660), the emotions aroused by making discoveries, as well as the ways they alter the investigator's own knowledge and beliefs, must be exposed. Cook provides little detail about the actual enquiry methodology. The different authors who have implemented this method

50. An epistemological approach that is primarily focused on the material aspect of the objects studied.

51. An epistemological approach that focuses on the objects studied primarily through the symbols and discourses associated with them.

favour qualitative and participatory approaches, i.e. giving precedence to interviewees' life stories. Regarding eaters, the main questions concern their geographical imaginations, their knowledge on the origins and production methods of food that is being followed, and the influence of this knowledge on their consumption patterns. Obviously, field ethnography studies must be complemented by documentary research on the material characteristics of the foods studied, the structuring of supply networks and their historical development, the legislative texts and other regulations governing their exchange and use, the media or advertising discourses regarding them, any social debates on the subject, etc. Firsthand and secondary sources complement each other.

► Limitations and cautionary points

This methodology—as it focuses on specific food products and their sociospatial trajectories—does not allow us to account for the entire range of eaters' practices. It mostly sheds light on the relationship to a specific food that has been followed, but not on an eater's diet or on the meaning that he/she gives to his/her food overall.

Moreover, the use of the Marxist notion of 'commodity fetishism' has been considered too simplistic by some authors. Firstly, the fetish attached to a commodity is not the product of an intention to mask its reality, but rather the inevitable outcome of the commodity exchange system (Goss, 2004). For Marxists, it is illusory to think that we can get rid of the fetish by highlighting it, i.e. for them only the abolition of the capitalist mode of production could overcome this fetishism. Secondly, the belief that revealing the food production conditions would be enough to change consumers' buying behaviour is considered as a moralizing, elitist approach, or even as a legitimization of a neoliberal market economy in which the consumer would be acting rationally if he/she were to be correctly informed.

The multi-site ethnography strategy upon which the follow-the-thing approach is based calls for detailed explanation. Authors who implement the follow-the-thing approach mainly refer to the seminal article by Marcus (1995), who in the 1990s considered that multi-site ethnography is an appropriate interdisciplinary method to take the linkages between the local and the global in social practices into account. More recently, the sociologist Jean-Pierre Hassoun proposed the 'circulating observation' approach (Hassoun, 2020, p. 130) to better take into account the circulation of objects, people and representations between the different places studied.

Finally, the follow-the-thing approach may seem a little outdated in the 2020s. The approach emerged at a time when many food systems were still in the process of being globalized, but is no longer really tailored for today's highly diversified supply networks—it is difficult to adapt it to compound and ultra-processed foods, or to foods whose spatial trajectories are highly complex, changeable, fragmented, or punctuated by disruptions (Hulme, 2017). Moreover, it no longer seems innovative, since there have been many television documentaries and press articles showcasing the behind-the-scenes aspects of globalization, digital applications providing information on food items or fairtrade product packaging displaying the faces of supposedly happy emancipated producers. Nevertheless, this sharp rise in information communicated by agrifood companies could be considered as a new product fetishization regime, so the follow-the-thing approach could then help to reveal the shadowy areas of this supposedly illuminating communication.

► Ethical and deontological aspects

This approach does not involve any particular ethical issues, apart from those usually raised by ethnographic research. Yet caution is needed with regard to personal information gathered during interviews with the various actors (producers, consumers, etc.), as well as confidential information (related to industrial secrecy, etc.) that might be transmitted, as is sometimes the case in food system studies. Like any human science research process, it is subject to the legislation that prevails in the area where the surveys are conducted and with regard to the data processed (e.g. the General Data Protection Regulation [GDPR] in the European Union).

► A multidisciplinary positioning

Geography further enhances its systemic and multidisciplinary aspects when developing the follow-the-thing approach for food studies. This approach moves away from a linear conception of a supply chain or commodity chain for which consumption is only the endpoint. It does not detach eaters from the system in which food is produced, processed and transported, but in a more discursive mode it allows for the circulation of food-related information, narratives and meanings.

The approach thus strives to overcome the production vs consumption opposition in food studies, but also the dichotomy between the material and discursive fields, i.e. between practices and meanings. It is a holistic methodology based on a fundamentally relational ontology. The different food system components must be studied together, and material dimensions cannot be separated from semiotic dimensions. More broadly, this approach seems appropriate for gaining insight into changes taking place in food systems. It allows researchers to take into account ecological processes, material infrastructures, economic networks, political actors and symbolic devices that jointly help to define and regulate the presence, circulation, visibility, status and multiple properties attributed to different foods.

Obviously, this approach is not purely geographical. Reducing food practices to a simple question of location would be a form of spatial reductionism, thereby denying the substance of social practices. Hence, the method requires other social science tools, particularly the socioethnological approach. The latter is the only way to account for the practices observed and discourses heard, and to interpret food practices as genuine social facts underpinned by their own rationales. Thus, this method is not very technical and remains broad in its definition—it can be used by anyone with general social science knowledge. As such, it is fundamentally multidisciplinary.

► An illustration: a sociospatial biography of meat in India

Implementation of the methodology mainly consists of documenting the practices and representations of the actors at different places in the food system, while focusing particularly on changes that affect the meanings attributed to specific food products when they are exchanged and circulated through space. This is the method I applied in a doctoral research project focused on practices and meanings relating to meat in Tamil Nadu state (South India)—the results of which were subsequently published in a book (Bruckert, 2018).

This research aimed to shed light on reconfigurations of the symbolic values and legal status of different meats—chicken, beef, goat meat and sheep meat—in a context of globalization, urbanization, the rise of Hindu nationalism and the growing awareness of ecological and health issues. My main aim was to highlight specific ‘meat circuits’, with their distinct sociotechnical configurations, and to assess the ways meanings attributed to meat are shaped, contested and reconfigured along these circuits. The initial hypothesis was that the meanings eaters attribute to different meats are not only shaped in the consumption space, but also along the supply circuits. Many actors shape the meanings of meat, including people who raise, trade, and slaughter the animals, cut up the carcasses, sell the meat and serve it in restaurants, as well as people who issue regulations, produce expertise, circulate information or are part of religious, environmental and animal protection groups. These meanings may be connected with or disconnected from the eaters’ expectations and imaginaries. Throughout the circuits, eaters’ demands induce particular ways of working in the supply chains and, in return, the constraints and choices of the supply chain actors shape specific consumption practices.

In this research, the method used was directly inspired by the follow-the-thing approach. The first step was to question the different trajectories of meat in the social space: where is meat located? Where does it go? Where does it not go? What are the practices and meanings relating to meat in each of the places in these circuits and how do they vary? Through multi-site ethnography, I studied practices and discourses along the circuits. The study sites were selected along a rural to urban transect so as to investigate the different steps along the circuits in more or less urbanized settings. The field study lasted about a year and involved several month-long stays. My starting point was to study of urban butcherries because they were relatively easy to access, but also because butchers are actually mediators: butcherries are key hubs where production and consumption meet, where eaters, retailers and legislators negotiate the meanings attributed to meat. From the butcher's shops, my path led me up the chain to periurban slaughterhouses, and then down the chain to the restaurant owners and eaters. I conducted semi-structured interviews with more than 80 eaters with different profiles in terms of gender, age, religion, caste, social class and location. The eaters were questioned about their diet, meat consumption, procurement practices, the influence of the location (home or away from home) on meat consumption, as well as their representations about meat and knowledge of procurement channels. I then went back to the starting point of the chain and studied farmers’ work in the light of the last stage of life of their livestock animals, i.e. meat production. From there, I followed the animals to the livestock markets and along the roads leading to the slaughterhouses and butcherries. I also interviewed experts, researchers, veterinarians, politicians, professional representatives and other activists. I constantly went back and forth between the different locations to get a better picture of the connections and circulations between these different spaces. The main limitation of this approach was that it could isolate meat from other food products and overlook the fact that supply chains and food behaviours are part of a consistent whole. I therefore had to ask the eaters about their diets in a broader way, i.e. beyond the meat issue.

Observations and interviews carried out while following the different meats shed light on the actors’ practices and the rationale underlying these practices. I questioned farmers, butchers, slaughterers, traders and restaurant owners about their practices and eaters’

practices. This method helped identify, in professional practices, what was related to technical or economic constraints and what was related to cultural practices and moral values. For example, from an anthropology of technology perspective, the study of meat cutting in butcher's shops—whether the butcher removes fat and skin or not, whether he/she breaks the bones, how he/she cuts up the carcass, etc.—shed light on certain practices and representations of consumers. The blood drainage operation during slaughter was analysed, depending on the actors, in terms of whether it was in mandatory compliance with religious prescriptions, to guarantee food safety or simply to enhance the palatability of the meat. Similarly, I questioned the preference expressed by some eaters for beef or bubaline meat with regard to the economic, agronomic or legal constraints on the rearing and slaughter of large ruminants. In this case, it appeared that religious conceptions, rather than material or economic ones, determined the symbolic value and legal status of meat and animals. The spatial distinction observed in the slaughterhouses between an area dedicated to cattle slaughter and an area dedicated to sheep and goat slaughter was even more illuminating. This separation could be understood as meeting a need for technical and economic specialization of activities, but it appeared mainly to be a material and spatial reflection of a partitioning and hierarchization between two types of meat whose status was generally considered unequal.

I conducted an in-depth study on the situation regarding chicken. Eaters were questioned about their perception of chicken meat and the risks associated with its consumption, about the trust-building process—based on the visibility of farming and slaughtering activities, certifications, industrial standards—and about their knowledge of production conditions, etc. I followed the chickens from the rearing sheds through the wholesale markets to the supermarket refrigerators. I conducted interviews with the owner of an integrated poultry company, with seasonal workers on the farms, artisanal butchers, wholesalers, supermarket managers and high-end shopkeepers. Communication materials circulated by the poultry industry and press articles related to chicken were analysed. This methodology enabled me to draw up a sociospatial biography of chicken in Tamil Nadu state and to document the way in which the transformation of animal rearing and meat processing affected (or not) eaters' representations and practices. The findings highlighted the deanimalization process that impacted the entire broiler supply chain: the living nature of chickens was stifled by the intensification of farming practices, while industrial slaughter and the sale of cut and frozen meat tended to mask the animal origin of this meat. This deanimalization was found to make chicken meat more acceptable to many Hindus, contributed to the increase in its consumption, but it also generated a sense of loss among eaters, a form of nostalgia for the firm, tasty and fortifying meat of local free-range chickens (Bruckert, 2021).

Beyond the distinction between different types of meat, the implementation of the follow-the-thing approach allowed me to establish a typology between three types of meat circuits under specific rationales: a vernacular circuit, an artisanal circuit and a mass circuit. For each of these circuits, I identified specific characteristics: spatial extension, division of labour, rearing methods, legitimization of the killing, carcass sharing rationales, culinary uses and ways of consuming and classifying meat. I also documented more general aspects such as the relationship to the animals' life that these circuits reflected and perpetuated, eaters' knowledge regarding these circuits, their regime of visibility and their politicization by Hindu nationalism proponents (Table 10.1).

Table 10.1. Sociospatial configurations of different meat circuits in India (from Bruckert, 2018, 331-333).

		Vernacular circuit	Artisanal circuit	Mass circuit
General	Iconic animals	Billy goat, rooster	Small ruminant, chicken	Broiler chicken
	Relationship to animals' life	Continuity, proximity, singularization	Discontinuity, commodification	Discontinuity, reification, fetishism?
	Control of the circuit	Social/family group	Traders, wholesalers	Industries
	Eaters' knowledge on the circuit	Very good	Good to average	Low
	Origins of the representations linked to the circuit	Experience, direct knowledge	Stories, memories, circulations	Industrial system, media, political field
	Politization	Low	Strong	Strong
	Location and visibility	Local visibility	Distancing	Invisibilization and banalization
Supply network	Spatial extension	Small	Medium to long	Medium to very long
	Technical model	Domestic and extensive	Extensive and intensive	Intensive and industrialized
	Division of labour	Low	Medium	High
Livestock farming	Animal owners	Households	Farmers	Private companies
	Farming pattern	Diversified, extensive	Specialized, semi-extensive, intensive	Professionalized, intensive
	Work relations	Kinship	Caste, lineage	Paid labour
Slaughter	Slaughter legitimization	Sacrifice, ritual	Ritual (halal)	Hygiene, halal?
	Usage of blood	Offering to deities	Drainage	Use as by-product
	Killing	Exposed	Distanced	Hidden
	Beef	'Fallen' animals	Cull animals	Fattened buffaloes?
Cutting and distribution	Logic of sharing	Social, gift	Economic	Economic
	Carcass cutting, meat characteristics	Carcass split, bones broken, fresh meat	Carcass split, meat pieces, fresh meat	Deboned meat pieces, ready-to-cook, ready-to-eat, refrigerated and frozen meat
Consumption	Modes of consumption	Sacrifice, ceremonial	Ceremonial, banalized	Banalized
	Culinary uses	Stew	Stew, fried, pilaf	Various recipes, distant repertoires
	Places of consumption	Home, external rural places	Home, restaurant	Home, restaurant

	Vernacular circuit	Artisanal circuit	Mass circuit
Frequency of consumption	Monthly	Weekly	Daily?
Consumption rationales	Religious, social (caste), nutrition (power)	Social (caste and class), nutrition (strength), taste	Social (class), hygiene, nutrition (muscle), taste
Consumption restrictions	Cultural, religious, economic	Cultural, religious, economic, medical	Medical, ethical, political, environmental?
Meat classification	Pure/impure; hot/cold	Pure/impure; hot/cold; fat/lean; cheap/expensive	Fat/lean; red/white?
Identification of animals in meat	Sought, promoted	Ambivalent	Stifled, flesh dressed up as mere proteins
Offal	Promoted	Socially differentiated	Depreciated

► A method for all situations?

The follow-the-thing method is very broadly defined, so it can be adapted to many field situations. Obviously, the first challenge is to choose the places where the interviews and observations will be conducted. It may be challenging to access places that are the most suitable for shedding light on the practices and meanings related to certain foods. A site may be physically inaccessible due to its remoteness, for example, or its access may be prohibited. The research must be prepared to forego visiting certain sites, while still seeking information from secondary sources. In the case of the Indian fieldwork described above, access to the municipal slaughterhouses was negotiated several times with the local authorities. Doors were finally opened to me provided that I would not take photographs. However, I was unable to monitor poultry processing plants. Poultry farms could be visited thanks to contacts among the local population.

The pathways of some foods were sometimes too complex to be able to undertake research in all the places. I then had to select those that I assumed would contribute more than others to determining the final meanings attributed to the foods studied. Thus, in line with the limitations outlined above, a researcher would not study vegetables sold in a short supply chain in the same way as a bottle of soda would be studied.

In any case, investigators applying this methodology must be open to a form of serendipity, i.e. he/she must be guided by the people he/she meets. These people may attract attention or give access to places that had not previously been considered worthy of interest. All places should not be given the same importance. For both epistemological and practical reasons, some contexts could be investigated in greater depth, which is thereby in line with long-term ethnographic research. Other places could then be visited secondarily, with the study finding complementing and illuminating data collected in the main place of investigation. In my work on meat in India, slaughterhouses and butcheries were the main places of investigation, as it appeared that they were the venues of the main conflicts over the status attributed to the different meats.

Rearing practices were studied more secondarily, and always in connection with the meanings attributed to the different meats.

It is not surprising, however, that a method that focuses on the impacts of the socio-spatial context on food is in turn shaped by the different investigation contexts.

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Chapter 11

Sociological surveys of young eaters: methodological and epistemological issues

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Like food, childhood is a subject that has only recently been addressed in sociology research. The perception of socialization is a key to understanding the social construction of food norms and practices. This chapter outlines the specific issues involved in quantitative and qualitative sociological surveys of young eaters. The narrative is illustrated by a few examples of applications derived from the authors' research.

In sociology, epistemological and methodological thinking about childhood and children has not always been straightforward. Does the specific status of childhood prompt reconsideration of the conventional conceptual categories and methodological investigation strategies in sociology? This chapter focuses on addressing this preliminary question.

With the development of a normative framework for medical-oriented nutrition over the last two decades⁵², research has been focused to an increasing extent on various groups targeted by programmes—including children and adolescents. This targeted research has fostered between-discipline dialogue. While childhood has been a primary area of interest in psychology, sociological field studies have mainly relied on qualitative methodological tools from the anthropology field. The study of infant food practices and consumption patterns does not call for a single standard survey approach, but rather a range of methods, whose description would be too long and complex to describe here. This chapter attempts to address the specificity of children in food survey approaches as it raises a number of research questions and method-design challenges for sociologists.

The first part reviews debates on children's role in surveys so as to highlight the epistemological and methodological challenges. The issue of overcoming child invisibility in sociological research is explored to define some theoretical frameworks

52. Here we are referring specifically to the French nutrition and health programme (PNNS) (2001-2005, 2006-2010, 2011-2015, 2019-2023) and the guide *Nutrition des enfants et des adolescents pour tous les parents* (2004, republished in 2019).

from the fields of childhood sociology and socialization. It also examines how the current context, which is conducive to a surge in research ethics and personal data protection, affects these debates, while highlighting the data formalization and deontological standardization trends generated by this situation. Finally, the potential contributions of sociology and its epistemological and methodological stances to related disciplines are discussed.

The second part focuses on a methodological practice geared towards gaining insight into children's viewpoints. Two examples drawn from our research fields are presented. The first, from the sociology of food, shows how quantitative studies of food trends among adults can be tailored to offset the problem of child invisibility in statistical analyses. The second, from the childhood sociology field, concerns a long-term anthropology-inspired ethnographic study on school meals and snacks, combining interviews between peers and between children and parents.

► Taking children's views into account in the debate

Childhood and food: the genesis of two 'minor focuses' of sociology

Like the food issue, biological, psychological and sociological concerns must be jointly taken into account when considering childhood. This undermines the independence of the strictly social aspects so cherished by Émile Durkheim, the founder of French sociology—this legacy explains the difficulties encountered when seeking to study the topic from a sociological standpoint.

In France, the structuring of two fields of sociological research on food and childhood cannot be achieved without debate (Poulain, 2017; Sirota, 2019; Lahire, 2019), while discord is less acute on the European and international fronts. The emergence of sociology of childhood research, like that of food, is rooted in two distinct yet complementary trends. The first corresponds to an Anglo-Saxon tradition—childhood studies and food studies—which favour multidisciplinary approaches focused on the subject. The second is in keeping with a discipline-based French tradition, which is conducive to paradigmatic tensions on these two issues within the sociology field.

Between these two movements, debates tend to schematically oppose research that on the one hand is geared towards promoting dialogue between disciplines (e.g. for food, between nutrition, epidemiology and the medical world; for childhood, between psychology and pediatrics), and that on the other hand attempts to grasp the viewpoints of, on and through the child/food, by considering the issue studied as a means of interpreting the social world in which it is embedded and as a place where the social construct can be understood.

While these two movements are often at odds, the growing status of childhood and food as legitimate sociological topics over the last 20 years has fostered exchange positions that transcend these rifts.

A broad range of mechanisms for studying children's food habits

A highly diverse range of methodological tools are available to specifically study children's groups. Sociological practice is more flexible than it used to be, and less conducive to paradigmatic stances and associated survey techniques. Sociologists are

more willing to use a variety of tools than in the past and are thus involved in generating viewpoints of/on children/food through widely used qualitative approaches. This enables them to describe practices and analyse the meaning given to them according to the contexts in which they are produced. This includes the maintenance of children's statistical invisibility and opinions, even in food surveys where their parents actually answer questions on their child's food habits. Interest in contextual everyday practices is growing and has paved the way for the emergence of this third pathway, which in turn promotes dialogue between approaches within sociology and between disciplines. This pathway reveals potential linkages between agency and social determinism, social differentiation and developmental reasoning at different stages.

The research methods applied should be underpinned by an explicit definition of what a child is, while bearing in mind his/her age, status, childhood models and the way these aspects are socially constructed in the study setting. Two methodological references should be noted here. The first highlights the points that need to be understood to design a methodological approach with a child-centred focus (Danic et al., 2006). Through a reflection on the construction of children's ages and the respondent/investigator relationship, the book published by these authors surmounts the overlooked elements of the research and the stereotypes that are sometimes associated with children (e.g. the parrot child, naive child, immature child and liar child). This book stresses how researchers working on this population must seek to define what childhood means, thereby contributing to scientific reflection on the breakdown of the different ages of life. The denial of historically constructed models of childhood, the primacy of an abstract, universal, ethnocentric model of the child, psychological thinking and creating the illusion of a degree of homogeneity in childhood, and ages, regarded as natural realities and not as being socially and culturally shaped, are opportunities for reflection fostered by this book.

A second reference proposes concrete mechanisms for implementing food surveys among children based on the playful approach that the authors associate with them (Lalanne and Tibère, 2012). Drawing more on the 'methodological guide' format by introducing advice derived from visual (drawings, images) and playful (games) methods, this latter article offers a tangible and stimulating introduction to a playful notion of the relationship with children in field practice.

Children's role in different settings

Contextualized surveys of children's roles raise questions regarding the sociologist's fieldwork involvement, especially in relation to the respondents. In the Western world, conducting surveys on children may raise ethical issues regarding the collection of data from minors, which requires the informed consent of the children and adults, formalized by parental or even institutional authorizations (e.g. schools or sports associations, or even guardianship institutions for children placed in public care). Given this data collection context, research usually targets the family environment, as other social settings are more complicated for researchers to handle. Yet, as we shall see, extra-familial settings, particularly in the school environment, are feasible.

During the data collection process, the presence of at least one adult nearby or the adoption of procedures to capture the children's words and actions (surveys

in open, non-enclosed spaces behind glass) facilitates fieldwork access while complying with the sociological ethics, although the researcher must be careful that the educator and the influence of his/her presence on the exchanges do not overshadow the situation. In sociological practice, it is also essential to establish trust with parents (who may be afraid of the researcher's judgement on their educational practices) and with the children so that the latter will understand why the interviewer has come to listen to them (i.e. a reversal of the vertical relationship to knowledge and dependency on adults).

Research ethics are linked to the conditions in which surveys are carried out and to the interactions researchers have with the people they study. These ethical issues are nowadays unavoidable, including in the social science domain. The European General Data Protection Regulation (GDPR) now governs the legal and potentially ethical compliance of research, while major research institutions have set up ethics committees and journals are increasingly demanding proof of compliance. This compliance of data collection protocols requires prior definition of the methods implemented for collecting children's opinions and observing their practices, so as to ensure their validation. This incidentally fosters the use of hypothetical-deductive approaches, to the detriment of inductive or grounded-theory based approaches. Scientific production is thereby transformed. In our view, by obliging researchers to stipulate all of the criteria, domains and variables studied, this framing facilitates the implementation of a third approach to childhood nutrition research. Researchers are thus encouraged to foresee the conditions for a possible dialogue or responses to reviewers' requests (of submitted projects or articles) whose discipline or paradigmatic aim may differ from theirs, rather than to adapt to them *a posteriori*.

Contributions of the method to related disciplines

Questioning the contributions of the method to related disciplines means discussing the contributions of one discipline, i.e. sociology. "In order to define sociology, it is necessary to start from both its subject and practice. Its subject relates to the social or socialized person. [...] There can be no sociological knowledge independently of the techniques used to gain access to it. In other words, the sociologist is not satisfied with simply having ideas about society. He/she conducts surveys and intends to put general theories to the test of the empirical reality he/she observes and interprets. His/her conclusions are the outcome of a controlled evidence-gathering process" (Paugam, 2012, 1-2).

Scientific rigour, fieldwork and a strong critical and reflective approach to the sociologist's survey experience are fundamental contributions of the discipline to related fields. The debate triggered by André Turmel on the sociology of childhood with developmental psychology is a perfect demonstration of this contribution with regard to the normalization of childhood. The latter results from the physical and psychological measures imposed on children, which are viewed in terms of maturation, while setting developmental stages that help to socially shape growth, advancing age and the changing body (Turmel, 2008). Applied to food, this contribution has been used to discuss—with taste psychologists and nutritionists—the notion of food neophobia, which is widespread in these disciplines and viewed as a maturational, developmental and universal process (Dupuy et al., 2021).

► Children's role in practice

Sociological survey techniques can be used to study children's eating behaviour. Here we present two examples of surveys conducted in two different primary socialization settings, i.e. the family environment and the school environment. Each survey combines several investigation methods with young eaters.

Statistical survey

Several survey methods must be combined to gain access to children's views while taking the influence of their environment into account. This first example concerns on-site research on the role of pleasure in the socialization of children and adolescents (Dupuy, 2013).

Individual interviews, group discussions and monitoring were conducted in families and schools with the aim of combining viewpoints and highlighting social differentiation processes in the construction of food pleasure attitudes within the family and among friends. This approach—which drew on the research of the sociologist Bernard Lahire—revealed the diverse range of pleasure attitudes, their social origins, and the ways these attitudes may be enforced or inhibited in different social contexts. Group interviews were also conducted with several members of the same sibling or peer group, as well as with children, their parents and grandparents to compare their viewpoints. Meanwhile, a quantitative survey was conducted among 2,528 individuals, including 1,002 between the ages of 7 and 17. This was a unique questionnaire survey as it involved questioning children and adolescents directly, contrary to the conventional practice in nutritional epidemiology surveys, where parents are usually questioned about their children's food habits⁵³.

Features of the questionnaire survey of young eaters

This quantitative survey had some special features. Firstly, the questionnaire lengths differed for children (30 min) and adults (40 min). Secondly, the survey was designed to keep track of the 'family units' of the young eaters ($n = 1,002$) and their parents ($n = 624$), who were also questioned. The child population targeted by the survey included 374 siblings. The questions were asked by interviewers in the households, with children, parents, brothers and sisters interviewed separately. Finally, the interviews were conducted face-to-face in the respondents' homes in five major regions of metropolitan France.

Face-to-face interviews at the respondent's home likely offer the most reliable and comprehensive means to explore specific questions in a semi-structured interview format (e.g. reconstruction of daily food consumption pattern using history-taking tools), and moreover they allow for more complex questions to be asked. This type of system is, however, very costly because many interviewers are often required to travel long distances to reach the survey area. It is also time-consuming, as it relies on differentiated questionnaires and involves extensive interviewer training: survey manuals and training sessions are essential (Appendix 1). This preparation enables the interviewers to grasp the objectives of the questions, adapt them to the young target group by translating

53. This was the case, for instance, in the INCA and NutriNet surveys.

them, using informal language, while understanding the importance of not imposing their own viewpoints. For the interviewers, the unusual complexity of this survey strategy and its research objectives have generally been regarded as gratifying and enhance their role. The interviewer training included two key points, i.e. boosting interviewer awareness on avoiding any form of value judgement in relation to the answers given; and preparation not to pre-empt or suggest answers to the open-ended questions. Faced with children in an adult-child relationship that was necessarily asymmetrical, they were asked to guide the children's sometimes hesitant responses using commonplace semi-structured interview procedures, such as 'word-for-word' repetition of the children's comments.

Standardization principle underlying the questionnaire survey

The standardization principle underlies this comparative and causal methodology, which seeks to highlight social differences according to age, gender or social position. This principle generally concerns both the form of the questionnaire (standardization of the conditions for administering it, instructions, recommendations, item order) and its content (types of questions and response methods). This standardization requirement is problematic when dealing with a population as diverse as children and adults, as the children's questionnaire must meet a similarity requirement in order to be able to compare the answers given by different respondents, while at the same time being tailored to certain features mentioned above.

Since the aim of this questionnaire standardization process was to facilitate inter- and intra-generational comparisons on all items (children with their parents; children among themselves in a sibling context), as well as dynamic comparisons on eating behaviours (this corpus supplemented by data from previous surveys conducted by Poulain, 2001), standardization was carried out on two levels:

- generally with the adoption of an infant-focused stance for the three questionnaire formulations,
- and more specifically, for the 'child' questionnaire, with the removal of questions when they were not understood or to meet an obligation (scientific with regard to attention, and economic) to reduce the interview length, and then with the use of the informal 'you' (*tutoiement* in French, rather than the formal 'you' (*vouvoiement*) by the interviewer in the wording of the questions (Appendix 1)).

To comply with this standardization principle, the questionnaire was designed by identifying and selecting questions from previous surveys on adult eating behaviours⁵⁴ or educational styles regarding food, which had to be transformed into understandable questions for children, as well as by developing original questions on food pleasure. This research was facilitated by the close correspondence with the qualitative survey and testing of the various versions of the questionnaire with the target groups, particularly with regard to the choice of words in order to minimize possible differences in the interpretation of questions and answers. This test phase made it possible to abandon questions concerning the meal composition based on a set of drawings of items (e.g. starter, main course, dessert) initially intended for the collection system, which generated imposed effects on the children's answers.

54. The same model (Poulain, 2001) was used to collect data on representations, opinions, declared behaviour and reconstructed behaviour. Questions specific to our research were added on the pleasure and educational styles topics.

Ethnographic survey

This second example of a survey of young people concerns research conducted on the social aspects of meals amongst elementary school children (Comoretto, 2015), which was based on a complex methodological approach using sociological, ethnological and anthropological tools.

The survey was conducted over two school years in three elementary schools in the Paris region. The chosen schools differed in terms of the students' social background. Semi-structured interviews were carried out with parents in their homes. Supervisors, sociocultural facilitators and catering staff who supervised the schoolchildren during meals were also interviewed. However, the part of the methodological procedure that interests us in this chapter concerns the investigations carried out exclusively with and among children, in the extracurricular context of meals in the canteen and snacks at the evening study. The aim here is to highlight the decision to place children at the core of the system while having them actively participate in the survey.

The distinctive feature of this research is that we sought to study children's eating practices at school while not being specifically interested in what they ate. Our observations were focused on the social nature of food intake in schools and what it tells us about the transmission of social attitudes and the role of peers in children's social construction.

It soon became clear that a qualitative survey firmly rooted in an ethnographic and empirical approach would be the best way to study children's sociability through the lens of school meals. How else than through the recurring presence of the researcher in the field could we observe schoolchildren's eating practices when they were grouped by table in the canteen or by small groups in the playground and interacting with one another at the pace of children's friendships and enmities? We plunged into the daily life of children by visiting the schools as often and as regularly as possible at mealtimes.

Two approaches were adopted to ensure that we would be as close as possible to the children's interactions. In the first, inspired by what William Corsaro (1997) refers to as the 'reactive method', the interviewer maintained a distance from the children in the canteen and at snack time during the first days of the survey. This gave the children the opportunity to be the sole decision-makers as to when they would (or not) come into contact with the observer. The second approach refers to the 'least-adult child' notion developed by Nancy Mandell (1988). Spending time with children, sharing their activities regularly and taking an interest in them helps break down the various barriers between children and adults. The researcher's ability to fully embrace the child's world is enhanced by being the 'least adult possible' and adopting the children's practices without trying to direct or control them. We sometimes opted for remote monitoring and sometimes participant monitoring, while nevertheless respecting the limits imposed by the supervisors (e.g. by not playing with foods in the canteen).

Canteen observations

Whether monitoring from a distance or opting for participant observation, the school canteen is a difficult research setting to monitor because of the high interaction rate. We carried out 200 h of observations in school canteens and shared 65 meals with the students at their table. We were mobile during part of the service in the school canteen in order to vary our observation positions, i.e. from one room to another, one

table to another, and one interaction to another. During this hour of observation, we took notes in our field diary while continuing our exchanges with the children and the school canteen staff. It was hard to apply a strict observation grid as there was never a day when the same thing happened as the day before or the day after, but also because we would have had to narrow our focus to a group of actors or a type of practice. In our diaries, we nevertheless noted regular patterns from the first days of observation, such as the students’ seating at the table according to their age and level (Table 11.1).

Table 11.1. Example of a survey of students’ table (T) seating arrangements in the canteen.

1st service							
	Girls	Boys			Girls	Boys	
T1	9	0	+ facilitator	T8	5	4	+ facilitator
T2	3	6	+ facilitator	T9	2	8	
T3	3	6		T10	0	0	
T4	5	4	+ interviewer	T11	0	0	
T5	0	0		T12	7	1	
T6	3	6		T13	4	6	
T7	0	0		T14	4	4	+ facilitator
Girls = 45				Boys = 45		Total = 90	

In schools offering table service, we spent 45 min at the table with a small group of children during the second part of the service, while sharing the same meal as them. This more participatory role involved memorizing and then transcribing the observations, since the researcher had to leave his/her field diary behind over the entire mealtime so as to fully participate in the table exchanges with the children. We carefully transcribed the information gathered as soon as possible after the meal service.

Exchanges at snack time in schools

Monitoring food intake such as the afternoon snack during the study period is an ethnographic challenge for researchers. Indeed, here the snacks were consumed during the supervised study, when the schoolchildren had no physical constraints other than those they imposed on themselves, contrary to the situation during lunch in the canteen. As the snack was usually eaten in the playground area, the students could opt to eat it wherever and however they wanted, e.g. while sitting, walking, running or playing. A certain degree of methodological rigour was hence required to monitor 50 to 100 children in half an hour in the vast playground area.

In the first few sessions we simply randomly moved around the playground and observed how food was being consumed. But we soon had to focus more precisely on what we wanted to investigate—the snack transactions—and set up a rigorous data collection method. The snack surveys involved identifying the schoolchildren who were most regularly present at the study, i.e. three or four times a week, in order to record, during each observation session, the exact composition of their snack *after the exchanges* (Table 11.2).

Table 11.2 Example of the snack survey.

Chart of snacks eaten by Clothilde, middle upper secondary school (CM2) student	
Day 6	1 apple – 2 Savanne biscuits
Day 7	1 apple – 2 Prince biscuits
Day 10	1 organic Pom'potes sauce – 5 mini-BN chocolate biscuits
Day 11	1 organic Pom'potes sauce – 1 Madeleine chocolate bar 1 mini strawberry tartlet – ½ Léo mini strawberry cake
Day 12	2 plums – 6 mini-BN chocolate biscuits – 1 equivalent Petit Écolier biscuit 1/2 Léo Pépito brownito biscuit – 1 Mathilde Petit Cœur
Day 13	2 plums – 5 mini-BN chocolate biscuits – ½ Madeleine Pépito biscuit
Day 14	2 squares of Victorien white Kinder Bueno – 1 Madeleine plain doughnut
Day 15	1 organic Pom'potes sauce – organic bread + organic Nutella spread 1 organic strawberry cake
Day 16	1 organic Pom'potes sauce – 3 slices of organic sandwich bread + organic Nutella spread ½ Audrey Chocolate Prince biscuit – 1 Madeleine Carambar 1 Madeleine Mammoth stick (from out of the bin)
Day 17	1 organic Pom'potes sauce 3 slices of organic wholemeal bread without crust + organic spread 3 finger biscuits + Madeleine Nutella spread
Day 18	1 organic clementine – 3 organic crêpes – 1 Oriane candy
Day 19	1 organic Pom'potes sauce – 1 piece of organic baguette – 6 mini-BN chocolate biscuits
Day 20	Organic black grapes – 6 mini-BN chocolate biscuits
Day 21	Homemade bread – 1 Kinder surprise – 1 Whaou chocolate crêpe – 1 apple (uneaten)
Day 22	1 organic Pom'potes sauce – home-made bread – 1 Kinder surprise 1 Madeleine Napolitain cake – 1 Madeleine candy
Day 23	1 organic Pom'potes sauce – 1 Whaou chocolate crêpe – 2 chocolate mini-BN biscuits
Day 24	1 organic Pom'potes sauce – 1 Whaou chocolate crêpe

The first names of the children mentioned in the table are Clothilde's classmates who shared part of their own snacks with her. This qualitative data was then statistically analysed to qualify and quantify the snack compositions according to the students' social background, and to assess the noncommercial transactions that took place in the playground while graphically representing the transaction networks. This transition from qualitative monitoring data to quantitative usage somewhat complicated the data processing and analysis. The main difficulty was the database instability. Although we were careful to select a sample of students for priority monitoring, not all of them were systematically present: hence there were highly variable attendance rates between students throughout the surveys. We had to take this bias into account when analysing the snack transactions.

A child-friendly methodological approach

When investigating children's eating habits in a school environment, it is essential to determine how to observe, participate in, count, record and analyse these behaviours. Survey methods tailored to investigating young people in field situations are also required.

The ethnographic approach allows for the commensality and conviviality that arise from sharing meals with schoolchildren, thereby breaking down the barriers between adults and children, and helping to gain greater insight into children's sociability.

Depending on the schools and contact people, we assumed a variety of roles in the eyes of the respondents. The schoolchildren sometimes perceived us as a student, inspector, facilitator or 'canteen lady'. While some children may have understood the role of researchers, they were unfamiliar with that of sociologists. We opted to let the children approach us, which meant that they were able to imagine all sorts of scenarios as they watched us take notes in our field diary. Students in the three schools did not react in the same way to our presence—those who approached the interviewer the most were those for whom there was the least social and cultural distance, i.e. middle and upper class children. From this standpoint, conducting a survey of diverse children raises the same issues as those encountered by researchers surveying adults from different social backgrounds, which means that the survey relationship must be tailored to the target audience.

Ironically, after taking time to gain the children's trust, we sometimes had to erect barriers and avoid getting too close to them, while diversifying our investigative relationships in situations where it was easy for us to focus on those most in need of interaction. We therefore made sure that we did not always have lunch with the same children, that we asked the boys to let us sit at their table and that we interacted with those who were the most reluctant. Inter-acquaintance and feeling at ease in field situations can be both an asset and a handicap for researchers if they do not distance themselves sufficiently, perhaps even more so when dealing with young respondents for whom there is a strong emotional dimension.

To conclude this chapter, the different steps of the data collection process are an integral part of the research process. Unfortunately, these steps are often not mentioned in the final reports, which tend to overlook the procedures implemented and the researcher's concerns in favour of the completed and refined analyses. Yet rendering them in a methodological analysis helps distance the researcher from his/her own data and from the way they have been obtained—the routes followed are seldom straight lines. Indeed, they are the result of back and forth exchanges between the data collection, readings, field situation and the main research issues. The fact that food surveys among children are not always straightforward—for all the reasons mentioned briefly in this chapter—leads (or even forces) researchers to tightly integrate methodological and sociological analyses in their scientific thinking.

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Appendix 1: Excerpt from the *Manuel de l'enquêteur pour le questionnaire enfant : la reconstruction de la journée alimentaire de la veille* (Interviewer's handbook for the children's questionnaire: reconstructing the day's food intake of the previous day) (source: Dupuy, 2013)

Part 3: Food practices

Reconstructing daily food consumption requires careful attention: the respondent must be assisted in recalling the previous day's consumption, while bearing in mind that he/she may forget or even deliberately fail to mention some consumed items if he/she feels guilty about them. Statements such as "Did you eat anything in the afternoon or evening?" work well if the interviewer shows that he/she is not judging (remaining neutral).

Care should also be taken not to influence and interfere with the answers by maintaining a certain distance and not offering personal opinions or examples. You should note down exactly what the respondents say (asking them to reformulate their statements if unclear), not your interpretation.

Daily food consumption reconstruction From yesterday morning to yesterday evening	Q7	Let us now look at what you ate yesterday (from morning to evening). I am going to ask you to describe everything you drank and ate from your first intake yesterday morning until your last one.	1 table/meal
Food intake time		What time was your first solid or liquid food intake yesterday?	Note the time of intake #1. If it was a glass of water, let the respondent talk to help him/her remember, but do not record this item (water is not considered as food in this study)
Intake content		What was it? Describe it...	Note one food/box Do not note water
Respondent's definition of the intake		What do you call this consumption? What was it for you?	It is up to the respondent to say whether it was breakfast, lunch or dinner, or a non-meal intake Tick the corresponding modality...
Social context of the consumption		For this intake, did you eat alone or with someone? Who did you eat with?	Tick the corresponding modality. If accompanied, specify if it was children or/and adults
Food consumption location: outside the home		Where did you eat this (these) food(s)? If the respondent bought the item(s) in a snack bar and ate it (them) while walking, without sitting down, tick 'in the street'.	Tick the corresponding modality
Home food consumption		When eating homemade food: were you standing up or sitting down, etc.?	Tick the corresponding modalities. If the respondent was sitting and in the kitchen, check both modalities. Identify the intakes that coincided with meal preparation Clearly note the declared duration of the intake.
Food intake n° 2, and so on		Then move on to the next food intake by assisting the respondent in recalling the previous day's events. Do you remember what happened next?	Note this in Table 2

This survey method is based on a tool for recalling the various food intakes that take place daily in adult populations (Poulain, 2001). By reviewing a set of variables for each food intake to facilitate the history taking, this investigation process helps obtain *a posteriori* reconstructed food practices that are more precise than those declared without interviewer assistance.

Part 3

Understanding and assessing the social construction of the food and eating fact

Chapter 12

The URBAL participatory method: collectively documenting sustainable food innovation impact pathways

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The URBAL method is aimed at understanding the impacts of activities implemented through social innovations that seek to enhance food system sustainability. In an effort to support the transition to more sustainable food systems, URBAL proposes a qualitative, monitoring and evaluation approach based on the impact pathway concept. It uses a participatory method to incorporate eaters' knowledge and experience with these impacts.

The dominant food systems and diets in affluent areas worldwide have numerous negative environmental, health, social, and political impacts, which in turn lead to sustainability issues in a context of high worldwide population growth (Esnouf et al., 2011). Questions raised by urban food systems—which concentrate consumption needs but not the food production capacity—are particularly critical. Large cities from around the world signed the 2015 Milan Urban Food Policy Pact (MUFPP) with the aim of addressing these questions. There is now a growing feeling that local solutions could be very effective for enhancing food system sustainability. Otherwise cities are bristling with initiatives and experiments. The question remains as to how they could be supported in their efforts to expand the scale and facilitate the transition toward a more sustainable system (Geels and Schot, 2007).

That question is pivotal to the URBAL⁵⁵ method, which looks at urban social innovations geared towards developing sustainable food systems. This targeted and applied research aims at providing a methodological guide for monitoring and evaluation by actors and stakeholders (innovators, donors, policymakers) involved in transitions towards sustainability. The method is meant to be participatory, qualitative, multi-dimensional, resource-efficient, and centered on activities. Since 2018, it has been tested in more than a dozen case studies (Valette et al., 2020; Blay-Palmer et al., 2023).

The objective does not include impact quantification, but rather the identification and representation—through cognitive mapping—of impact pathways, whether they are positive or negative, intended or unexpected. The latter are explained by exposing the causal chains that can lead activities to long-term changes. This requires distinguishing the direct effects (products or outputs), on a mid- (results or outcomes) and long-term (impacts) basis, while identifying the conditions underlying the passage between stages. These pathways can help identify the necessary or enabling conditions for success, as well as the potential obstacles or restraints.

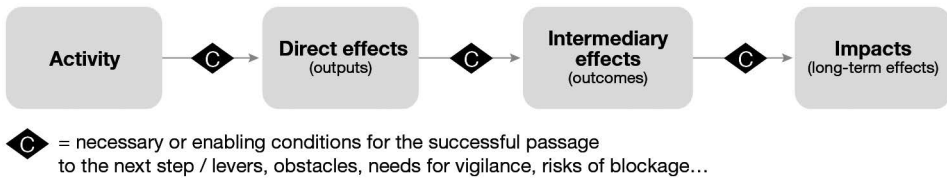


Figure 12.1. Simplified representation of an impact pathway.

The idea of an impact pathway places URBAL in the family of approaches encompassed by the ‘theory of change’ (Mayne, 2011). In this work we have drawn inspiration from the ImpresS method developed at Cirad to document the impacts of development-oriented research programmes in which the research institute participates (Barret et al., 2018; Blundo Canto et al., 2020).

The participatory⁵⁶ dimension takes advantage of collective knowledge and intelligence. In practice, this takes the form of multi-actor workshops, with the idea being that the diversity of viewpoints and experience among the concerned actors, as well as their interaction, enables assessment of a broader range of impacts. The challenge is to successfully facilitate communication of these viewpoints and experience by actors who often have difficulty expressing them.

Food system sustainability encompasses a large spectrum of dimensions: environmental, economic, sociocultural, political and health. With this in mind, it is essential to have a clear up to date picture of the synergies and conflicts between these dimensions before examining the impacts of innovation activities. For example, while food supplied

55. The URBAL project (N° FC 2015/2440 - N° FDNC Ellgt 00063479) has been funded by the *Thought for Food Initiative* of the Agropolis Fondation (through the *Programme Investissements d’Avenir*, ANR-10-LABX-0001-01), the Fondazione Cariplo, and the Daniel and Nina Carasso Foundation.

56. Cousins and Earl (1982) suggested defining participatory evaluation as “applied social research that involves a partnership between trained evaluation personnel and practice-based decision makers, organization members with program responsibility or people with a vital interest in the program—in Alkin’s terms, primary users” (p. 399-400). We include eaters (or consumers) among the latter, as they are the beneficiaries of the innovations studied through URBAL.

by local producers can be beneficial for the region's economy and farmers' socio-professional position, it can have negative environmental impacts if the logistics are not streamlined. These types of observation and the evidence they provide can help inform decision-making on potential trade-offs and priority ranking.

The method needs to be cost-effective and flexible enough to adapt to different types of innovation. By definition, these innovations are new yet sometimes fragile and irregular arrangements. Hence, the actors overseeing these innovations must devote considerable energy to ensure their sustainability. They are largely focused on their objectives, often leaving little time, financial means and they don't necessarily have the skills to assess the impact of their activities. Even when practiced, monitoring and evaluation of those impacts are usually quantitative, which means choosing or developing indicators and a metric and collecting series of data. For example, the 17 Sustainable Development Goals adopted by the United Nations in 2015 have been qualified by more than 230 indicators. This type of approach is not practical for most innovations beyond those introduced by powerful institutions. URBAL offers an alternative, yet without excluding quantification strategies. Qualitative monitoring and evaluation in terms of impact pathways can be linked to quantitative evaluation and help identify indicators that need to be prioritized on the basis of social relevance.

The URBAL methodological guide is available online for use under a Creative Commons license (Valette et al., 2023). It is free for use by innovators, policymakers, innovation-supporting donors, and researchers. The minimum conditions for proper utilization are specified, e.g. allowing for the possibility of workshops being attended by a diverse range of participants and certifying that negative impacts are not concealed in final reports. The URBAL method can be implemented to fulfil several objectives: to explain the functioning of an innovation and the decision to support it, promote it, or prepare a quantified evaluation of its impacts. This open sharing is not solely a policy choice, it is also a pragmatic way of facilitating innovation scaling (Lepiller and Valette, 2021).

In the following sections, we outline the method and look at its advantages and limitations, the legal and ethical implications, and its connection with a holistic approach to food. Finally, we illustrate two cases where the method was applied and then explain how it was tailored to the situational constraints to foster eater (or consumer) participation in the monitoring and evaluation.

» The three steps of the URBAL method

The method is organized in three successive steps.

The first is devoted to characterization of the innovation on the basis of its innovative activities. This step is based on an analysis of available documentation, a review of the literature related to the type of innovation studied, and interviews with stakeholders (e.g. innovators and beneficiaries). At this step, a chronogram may be drawn up of the innovation trajectory, while mapping the actors and activities involved.

The second step involves organizing a participatory workshop that brings together the key actors and stakeholders of the innovation (innovators and people implicated in the innovative activities, the users and supporters, food system stakeholders connected to the innovation, such as suppliers and producers, actors from allied or similar innova-

tions, etc.). The participation limits are determined case by case according to the specific constraints but with the overall objective of pooling a diverse range of viewpoints on the innovation and experience with its activities. Experts on various sustainable food system dimensions are also invited to participate, while being instructed to avoid assuming a superior knowledge stance which that could be intimidating. These experts should instead be helpful observers, offering further details on impacts or suggesting impacts that might be less spontaneously discussed while encouraging everyone to contribute. Those in charge of organization should be experienced in facilitating workshops and the related logistics (invitations, preparing the venue and providing materials, while not forgetting to set aside time for convivial activities conducive to participation).⁵⁷

The analysis of the information collected during the workshop is critical. When it comes out of the workshop information is generally in raw form at first, i.e. large sheets of paper with rough details on the workshop discussions. There may also be complementary sound recordings and notes. But at this stage the information is still far from being clean, detailed and easily interpreted graphical representations of the impact pathways. In this analysis and graphical formatting phase, the workshop leaders can decide to limit representations to information derived from the workshop discussions, i.e. by itemizing that information (e.g. by explaining the causal steps or the conditions of success), or else they can decide to enrich the identified impact pathways with additional information from the scientific literature. It is also possible to keep a record of who said what or identified what impacts. From this standpoint, there is no obsessive commitment to the method's participatory nature.

The third step is aimed at rendering and discussing the results produced in the previous step. This step can take various forms. It could be a participatory workshop that reunites the participants from the previous step, while new participants could also be accepted. Otherwise it could take the form of a shorter meeting that is less participatory but still allows time for discussion (particularly for expressing views on the relevance of the results and the impact pathway representations). The form chosen for this third step depends on the function that the organizer or presenter wants to prioritize: Is it above all meant to generate information for collective decision making on the functioning and governance of an innovation? To promote and enhance recognition on an innovation and solicit political or financial support? To develop or solidify a network of territorial initiatives? To prepare a quantified evaluation of impacts and identify their indicators?

► Advantages and limitations of URBAL

Advantages

The method was designed in response to a relatively simple practical question: What are the impacts of food-related social innovations aimed at improving sustainability? This question is prompted by the need to foresee and monitor the impacts of these

57. There are many participatory methods, just as there are many applied contexts and questions to address. There are likewise many publications describing methods and many training programmes for their application, but there are not many summary publications. The King Baudouin Foundation, however, has published a free summary document, which may serve as a good entry point into the participatory approach (Slocum, 2003; Slocum et al., 2006). An inventory of participatory research in France was published in 2013 by the Fondation Science Cityoyennes (Storup et al., 2013). See also chapters 13 and 14 in this book.

activities. The URBAL may be used to perform monitoring and evaluation alongside the activity, to detect changes *ex post*, when they have already occurred and may be monitored, or *ex ante*, when they are under way or could potentially take place. It is important to distinguish changes that have occurred from those that could occur as the responses will differ in terms of action or decision, i.e. strengthening or changing direction, or otherwise it is essential to be proactive so as to avoid a potential impact.

Knowledge produced by URBAL is meant to be shared. This exchange of both positive and negative experience is useful, for example, with regard to more recent innovations which may have drawn inspiration from other already tested or fully confirmed innovations. The general philosophy, as reflected in the choice of the Creative Commons license, is in line with the philosophy of intellectual commons. Lemeilleur and Allaire (2018) and Romagny et al. (2023) noted that these intangible resources associated with knowledge and procedures share similar characteristics with common natural resources such as clandestine passenger issues, exclusion difficulties, or resource degradation risks depending on the type of use. These resources also have unique properties. In some ways they are not in rivalry as they are founded on knowledge whose use by one actor will not be to the detriment of that of others. The objective when governing the use of these resources is to facilitate their improvement and diffusion rather than their preservation. Their degradation is instead seen as being due to an inability to adapt to different contexts, thereby questioning their renewability capacity.

The objective of this knowledge sharing is to participate in the construction of a common culture around practical ways to enhance food system sustainability. This includes producing usable knowledge at various scales (Lepiller and Valette, 2021). Through shared experience, URBAL can facilitate replication and diffusion (scaling out). The knowledge that underpins the steering of innovations, or the political and financial support they receive, promotes their institutionalization (scaling up). The diffusion of this knowledge also helps reinforce the shared culture while promoting new ideas (scaling deep). The use of URBAL in several local innovation cases can also favor the creation of a territorial network of initiatives.

The method's participatory dimension enables innovators to distance themselves from their objectives and thereby avoid the trap of wishful thinking, which in turn could be conducive to formulating unexpected impacts that were neither forecast nor pursued—surprising negative or contradictory impacts, etc., would thus have a better chance of being exposed. The participatory aspect ensures that the monitoring and evaluation process will be socially relevant because the impacts identified will naturally be those that actually concern the participants themselves. For this reason, it is also essential that experts play an auxiliary role in the formulation of the impacts and their pathways, while offering useful information and introducing potential impacts that might not spontaneously emerge from the discussions.

Limitations

Standard limitations of participatory methods also apply to URBAL. It can be difficult to recruit participants who may be affected by the innovation but do not feel qualified to take part in discussions. The competence of certain actors may overrule their participation, so the forms of participation should be rethought. For example, how could young children or illiterate individuals participate in the workshops?

The institutional attachments of participants could hinder them from freely expressing themselves, for instance because of confidentiality restrictions or of pressure placed on them by their superiors to prevent their full participation. In such situations, the preparation, initial contact and explanation of the objectives well before the workshop appear crucial for reassuring potential actors who may hesitate to participate. The participatory mechanism should also be designed to control some actors' enthusiasm, e.g. an innovator excited by his/her project, who might tend to monopolize the workshop discussions. The role of invited experts and that of the workshop facilitator are particularly important for managing this type of problem.

Another shortcoming concerns the perception of the legitimacy of the results. The results are qualitative and not quantitatively measured. Quantified indicators are often considered to be more 'objective,' and thereby more legitimate. Yet the value of URBAL results is measured more by the extent of their social relevance and their potential for explaining causality and impacts than by objective metrics. To address this legitimacy challenge, the URBAL project team strives to develop simple and efficient communication graphics that will help to readily grasp the range of impact pathways and their associated sustainability dimensions. Another argument in favour of the legitimacy of URBAL's qualitative results is that the latter may be connected to quantitative evaluation results—application of the method may hence be viewed as a preliminary and socially relevant step in the impact quantification process.

A final set of limitations is related to the intention to make URBAL a method that is economic in terms of resources, time, and money. Although different structural scales suitable for diverse potential applications are anticipated, the goal is to make the process practicable even for Master's students on a 4-month internship. The need for economy presupposes trade-offs. The time required for a participatory workshop can be difficult to organize around participants' scheduling, mobility, interest or freedom to speak constraints. The orchestration must be attentive to all these issues in order to be able to collect as much information as possible about the impact pathways. Innovative activities whose impacts will be discussed can be identified beforehand. There may be many activities depending on the innovation, but addressing more than a dozen of them during a 4h workshop would be difficult. Therefore, it is necessary to choose the activities that are most emblematic of the innovation, or the most interesting for a given sustainability dimension.

The choice whether or not to focus on certain dimensions constitutes a second trade-off which strains the multidimensional scope of the method. The very nature of innovations can warrant a more in-depth exploration of any specific dimension. For example, a solidarity grocery serving as a means to address social precarity issues might require a longer period of collective discussion on the economic, sociocultural, and political dimensions.

A third trade-off can be necessary regarding the extent of detail on the impact pathways highlighted during the workshop. When the goal is to reveal the widest range of activity impacts, it could be hard to obtain a detailed picture of their pathways. In this case, the information generated by the workshop reflects the impacts more than their pathways. However, the pathways can then be formulated and mapped in greater detail during a post-workshop phase, after which they can be presented for discussion and validation by the participants in the workshop of the third step. Otherwise, certain

impact pathways could be prepared in advance of the second workshop where they will be discussed and validated, while only superficially addressing impacts judged as less crucial to the innovation.

► Legal and ethical implications of URBAL

Like all scientific investigations that involve the gathering of information on personal data, such as opinions, there is an obligation to comply with all applicable laws in the area where the method is implemented. In Europe, the General Data Protection Regulation requires prior authorization for use of the investigation protocol and data processing plan. Depending on the level of precision sought, it may not be necessary to keep a record of who said what during the workshops, so there is no obligation to attribute any dialogue to specific actors (anonymous or not). Moreover, anonymization can sometimes be illusory. The mention of a job position, e.g. director of food catering services in a city school system, might be enough to identify certain individuals without mentioning their name. It is important to inform participants and obtain their consent before the workshops.

Ethically, implementation of the URBAL method should encourage the vocal participation of the actors who have the most difficulty speaking. If these individuals are hindered by a workplace hierarchy, a lack of competence, or some personal issue that prevents them from participating, their contributions to the discussion could be recorded by other means so as to ensure that no one else will illegitimately speak on their behalf.

► URBAL and the holistic approach to sustainable food systems

A holistic approach to sustainable food systems is pivotal to this method as it seeks to identify impact pathways in all of their different dimensions. Nevertheless, and as we have mentioned, choices can be made to ensure efficiency or to focus specifically on a given dimension or impact. In practice, the holistic approach applies to the organization of the workshops, the invitation of diverse actors with different interests and viewpoints regarding the innovation, as well as experts on various food system sustainability dimensions. Even if all of the various sustainability dimensions cannot be represented by experts, the different disciplines involved should be represented, e.g. by inviting a nutritionist, an economist, and an expert on social issues.

Once results are obtained for a given innovation, the different impacts are labeled according to the sustainability dimensions, thereby highlighting dimensions with affinities. An impact could jointly have economic and sociocultural elements, e.g. contractualization with a local producer might allow him/her to increase his/her professional competence, ensure a steady income, while creating social links in the community. Attributing impacts to different dimensions can also highlight their mutual contradictions with respect to those dimensions. An environment-friendly measure might be less favorable for nutritional health, e.g. some plant-based products that are presented as alternatives to meat but are less nutritional. Highlighting these synergies and contradictions helps inform decision-making and restores the political dimension of innovations and their quest for sustainability. These decisions are then clearly driven by priority setting, trade-offs and, sometimes, failures. In this sense,

URBAL is working towards a vision—more pragmatic than idealistic—of sustainability that gives preference to itineraries of change that are chosen knowingly and with the help of collective intelligence.

► Adaptations to foster eater participation in evaluations

The social innovations studied for the development of URBAL were chosen in order to showcase a variety of situations. The following is a partial list:

- innovations based on new technologies (ordering sustainable quality food products online in Hanoi);
- innovations initiated by activist collectives (a solidarity grocery in Paris, a cooperative supermarket in Montpellier, a participatory guarantee system that certifies agroecological quality in Rabat);
- innovations initiated by sustainable food entrepreneurs (tortillas made with indigenous corn varieties grown by local farmers and processed by traditional methods in Mexico City, a site for the aquaponic production of fish and vegetable products sold locally in Berlin);
- innovations initiated by institutions (a program to improve school meals in Montpellier, a Baltimore-based community food initiative, a food district in Milan aimed at promoting local agricultural supplies, a food security strategy under the EU Common Agricultural Policy).

Here we focus on two applied cases to illustrate the way the eaters are associated with the monitoring and evaluation process and to highlight their contributions.

The first initiative was implemented in the Vietnamese capital Hanoi. It was not conceived as an innovation with a well-defined form, but rather as a digital communication technology friendly innovation: the use of social media (Facebook or Zalo – a popular Vietnamese media) for ordering sustainable quality food products (Bruckert et al., 2023). The market for more sustainable products is relatively recent in the Vietnamese context, where supermarkets and industrialized food chains have developed rapidly since the 2000s. The development of online sales outlets for these products—separate from mainstream e-commerce in the large supermarket chains—is even more recent. Actually, the sustainability concept is seldom applied and not easily translatable in Vietnam. The research team thus had to find a way to designate products that could be qualified as sustainable. They settled on referring to them as unprocessed food products (fruits, vegetables, seafood, honey) or products subject to minimal processing (pastries, spices, preserved foods) that are of better quality than their industrialized equivalents. This included products obtained via more traditional methods that limit the use of synthetic chemical inputs (labeled or not) or other additives. These are sometimes labelled with an indication of origin or a specific cultural identity and are often sold directly by the producers.

An important issue at the Hanoi participatory workshop held in December 2019 was to allow eaters to voice their opinions on impacts regarding the following activities: ordering online, paying online, posting comments, and asking the seller questions. But this participation was not self-evident in a country marked by a particularly authoritarian political culture, a vertical power structure, and great respect for hierarchical order. The invited eaters also needed to feel qualified to discuss with the experts

(agronomy and environment, agricultural economy and geography), a food quality control official, and journalists. The Vietnamese research partners were tasked with recruiting several eaters (or consumers) and organizing contacts while respecting local customs, particularly by sending a printed invitation to potential participants who were also informed that a gift would be offered at the end of the workshop (food products such as oranges produced by a participating vendor.) They were also invited to a restaurant to dine together at the end of the workshop. During the workshop, one of the research partners used his talents as moderator. Using humour, he managed to convey the idea that the experience of each of the participants was valuable to the process, and that the experts had been invited to enrich the discussions, raise questions, and provide clarification, but not to distinguish between true and false ideas. The Vietnamese research partners had never previously organized a participatory workshop with such a horizontal structure and they were pleasantly surprised by the eaters' active participation in the discussions. In terms of outcome, the eaters' participation highlighted the importance of the issue of trust in online transactions. The eaters stressed several points on this issue:

- the importance of the opinion or experience of close friends in building trust before an initial transaction with a seller,
- the importance of communication from sellers in response to information requests,
- the importance of various types of media for communicating the origin and production method of food products, as well as identifying the producers (videos, images, etc.).

The second initiative highlighted a different way of looking at the eater participation issue. This innovation was a program to improve school meals in the city of Montpellier, France (Perignon et al., 2023). We were soon faced with this question: How can we collect the viewpoints of elementary school children who were the beneficiaries and the most directly affected? Moreover, the participation of children raised legal questions (parental authorization, ethical procedures, etc.) whose resolution was not too compatible with the project agenda. The choice was thus made to partially modify the participatory spirit by not directly including the children in the workshop and, instead, collecting their viewpoints, reporting them during the workshop, and adding them to those of the participants as part of the post-workshop analysis process. A qualitative survey was thereby conducted among the school children from several schools and at the Children's Municipal Council of Montpellier. This was accomplished through collective and individual interviews as well as participating observations during the school meals.

Without this survey which facilitated access the children's experience, certain impacts would have been less precisely (or not at all) identified. The children's awareness of environmental impacts was generally very high, as revealed by their judgements regarding the sorting of recyclable materials on sorting tables displaying the waste quantities, and also regarding the increase in organic food. One child's comments on the sorting tables revealed a case of inversed socialization that suggested a possible impact on household practices: "Now, when my family doesn't throw stuff in the right garbage bin, I show them how to recycle, and now they know." The children's cooperation with the service personnel in regard to the school cafeteria's recycling tables was identified by another child as a source of satisfaction, allowing the child to feel proud about actively helping and being praised for that action. Another child's reaction identified a

potentially negative aspect of the sorting tables. The fact that this child was shocked by the volume of waste generated suggested the need for support to accompany and help the children understand the meaning of the activity.

A more varied response was noted concerning one of the program's other initiatives: the monthly addition of an 'eco-citizen alternative' menu—which has since become available twice a week. The children noted its more 'ecolo' (i.e. greener) character due to the absence of meat, the possibility to "see what it is like to be a vegetarian," and the realization that it is not necessary to eat meat every day and that whole meals could be made without meat. An impact in terms of social inclusion was noted in the reaction of one child who thought the menu allowed "kids who don't eat meat to eat like us." In fact, on the days that these menus were served, all the children were presented with the same menu because the 'eco-citizen alternative' menu was compatible with the three normally proposed menus (standard, without pork, and without meat). However, fears about the nutritional quality (iron and protein) were also expressed, as well as an impact on the satiation, i.e. one child claimed to be unable to eat the alternative menu due to an aversion to vegetables.

Lastly, the children's remarks confirmed and helped explain the effects that had already been measured in terms of food waste quantities and the introduction of a device for rapidly cutting fruits (particularly apples) directly at the table. The rapidly cut quarters encouraged sharing and allowed the children to understand the importance of eating the entire fruit rather than leaving it half eaten on the table. The fun aspect of the cutting tool seemed to encourage fruit consumption: "It's nice because it makes a flower when it cuts; it's pretty and funny."

To conclude this chapter, we point out the importance of including—as much as possible—eaters in the monitoring and evaluation of innovations that promote more sustainable food systems. Mainstreaming them into the participatory process enriches the evaluation quality with their practical knowledge on the impacts of innovative activities they have experienced. On a political note, the inclusion of eater participation in the evaluation process becomes part of the politicization of food and promotes food democracy (Booth and Coveney, 2015), while favoring the emergence of common shared knowledge on food practices and issues.

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Chapter 13

Action research: an analysis and social transformation process to enhance access to sustainable food

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Action research—involving joint participation and cooperation of local inhabitants, grass-roots actors and researchers—delivers knowledge and social practices. When focused on the issue of access to sustainable food in disadvantaged situations, action research is an effective tool for empowering people who have been excluded from the mainstream.

Historically, action research emerged in the United States and France after WWII based on the view that the humanities and social sciences could contribute to addressing societal issues. In the United States, it was shaped by two prevailing trends, i.e. pragmatic philosophy (William James and James Dewey) underpinned by the experimentation principle (the value of a theory is dependent on its practical efficacy), and psychosociology (Kurt Lewin) via experimental monitoring and comparative analysis of collective behaviour (e.g. in terms of food habits). In France, action research arose after the war alongside institutional analysis, namely through the work of Henri Desroche, a sociologist, educator and specialist of cooperatives who founded the *Bureau d'études coopératives et communautaires* in 1953. In her article outlining the precepts of action research, Alexia Morvan (2013) recounted this history while highlighting the coexistence of two distinct models. For her, action research approaches are consolidated by the fact that “they consider experience and action (or activity) to be a source of knowledge, with researchers being involved in the transformation of reality (or the practical efficacy of research)”. She went on to differentiate, within the action research sphere, approaches labelled applied action research and others designated as participatory action research (or involved research). The former aims to produce knowledge that is useful in action, without necessarily questioning differences in status—in terms of knowledge production—between the researcher (with his/her theoretical knowledge) and the other participants (practitioners with their practical knowledge). The latter approaches, on the contrary, transcend the boundaries between theory and practice and question the power of the researcher and his/her status as the sole producer of legitimate knowledge. Action research may

influence social relations (class, gender, etc.) as well as social justice and democratic dynamics. It thus has a profoundly political dimension, which Alexia Morvan claims is rooted in so-called ‘institutional analysis,’ a research trend in the humanities and social sciences (mainly in sociology) that arose in France in the 1960s. This school of thought is primarily focused on processes through which the power relations and rules governing collective life are standardized to the extent that they are taken for granted and no longer questioned, as well as on change processes and the awareness of these rules and power relations, with a critical and empowerment outlook. Institutional analysis emanated from interventions in social criticism settings: “what these studies have in common is that they create frameworks for collaboration between researchers and concerned groups, assuming that the latter should have authority over the fate of situations based on insight about them [...] this model advocates the involvement of actors [in the] knowledge production process, but also its social transformation goals. It goes hand in hand with the recognition of the political function of all social science research” (Morvan, 2013). Action research has many current applications, but Morvan further notes that “its use remains uncertain in the so-called noble humanities because of the researcher’s clearcut involvement”, in addition to which there is debate on the scientificity of research conducted with and partly by practitioners. Researchers’ involvement, alongside the transformative scope of action research, raises several issues regarding the risks of instrumentalization, legitimacy asymmetries between academic and lay knowledge, inequitable co-production of knowledge and distribution of the benefits of the resulting knowledge. These issues should lead us to constantly question and tailor the ways action research is positioned, designed, overseen and carried out.

In the academic sociology sphere, action research bears some resemblance to the sociological intervention method developed by Alain Touraine (1978) in his book *La voix et le regard*. He introduced a sociological stance that differed from “traditional academic axiological neutrality whereby the sociologist is supposed to remain in the background and merely record opinions and testimonies” (Cousin and Rui, 2010). This, however, relates more to the study of social movements than to social transformation processes, which is one of the thrusts of action research.

According to Yves Bonny, action research is a “vague notion in terms of the sense to be attributed to the linkages or of the actual meanings of the terms used”, because historically “the application contexts are extremely varied, including academic, militant, social management, training, personal or professional development contexts, including participatory approaches.” Hence, action research “may be treated as a scientific method by some people, with or without a very clearcut operational scope, such as problem solving. It may aim to formalize, with a view to transmission and dissemination, action and organization orientations deemed relevant in a given practical environment, such as grassroots education [...]. It may be part of an exercise geared towards raising awareness on certain forms of oppression and political engagement aimed at fostering empowerment and social transformation. It may be based on a technocratic strategic outlook or, conversely, on participatory and collaborative dynamics.” (Bonny, 2014, p. 1). Bonny also demonstrated that action research can be approached from two interrelated vantage points: firstly, action-based research, i.e. research that takes a practice (professional, activist, etc.) or certain characteristics of

a practice environment as its focus of study; secondly, research with a view to action, i.e. research that explicitly aims to produce knowledge for direct practical application. Knowledge produced by action research, i.e. decontextualised knowledge and action-oriented knowledge, can be combined, but may come under pressure. This tension may prove stimulating if clearly articulated, but otherwise it may generate conflicts and misunderstandings in the partnership research framework.

The participatory and collaborative dimension discussed by Bonny concerns the linkage and involvement of all stakeholders concerned by the subject at hand, above all the 'primary stakeholders.' The collaborative notion encompasses various elements: the participation of those primarily concerned, the pooling of resources, researcher involvement, the interlinkage of knowledge, the pursuit of egalitarian and non-competitive relations between the parties and the knowledge, and of benefit sharing.

The action research programme—two examples of which are presented in this chapter—is in keeping with so-called collaborative action research, which seeks to co-produce knowledge, strengthen capacities and empowerment, transform social relations and consolidate democracy (Maurel, 2010). Moreover, this action research is based on the experimentation principle, underpinned by the view that the humanities are not detached from social and political issues, in reference to the work of sociologist Pascal Nicolas-Le Strat. According to him, sociology "specifically addresses [these issues] via association with experiments in which the collectives are involved with a view to the empowering transformation of forms of life and activity." (Nicolas-Le Strat, 2013, p. 9). From a resistance and social transformation standpoint, this means counterbalancing the mainstream research model with different practices that integrate political issues with real-life and activity experience, while fostering the value of experience. According to Nicolas-Le Strat, experimentation implies disrupting a routine. This disruption will re-commit the actors and potentially produce constituent dynamics, thereby spawning other social relationships. He states that "research in an experimental situation [...] has both a critical scope—by assuming its oppositional commitment as needed—and a contributory scope, by contributing to these collective movements in a quest to achieve greater livelihood self-sufficiency" (Nicolas-Le Strat, 2013, p. 10). The experimentation notion thus relates more to the extent to which researchers are able to be involved in social experiments via their specific contributions than to experimental monitoring and analysis mechanisms such as those outlined by Kurt Lewin, although, as we shall see, the two may sometimes overlap.

The following examples illustrate how action research can be applied in conjunction with experiments to address the food insecurity issue, to work towards transcending food aid systems and practices, to question equitable access to sustainable food⁵⁸ and to reconcile ecological and social justice issues. It is seen as an approach that can generate knowledge and social practices, while contributing to empowerment and social transformation dynamics.

58. By 'sustainable food', we mean food that is consistent with constraints that ensure long-term access to good quality food. These constraints are environmental, economic, sociocultural, health-related and political. Sustainable food does not damage the environment, ensures fair incomes for economic stakeholders, is tailored to eaters' identities/tastes and safeguards health, while stakeholders have decision-making power over it. Access to sustainable food is a major issue in vulnerable situations and concerns dignity, equality and empowerment.

► Action research and access to sustainable food

Action research is especially concerned about ‘invisible or under-recognized populations’ (Morvan, 2013) or so-called subaltern populations and subjugated people. This research is hence particularly advanced and relevant to issues of social inequality in access to sustainable quality food, which is otherwise generally more expensive (e.g. organic or from short supply chains). The latter products—deemed to be better for the environment and health—are mainly consumed by people belonging to the most affluent and best educated social categories. These foods are therefore not readily accessible to the poorest people and are virtually excluded from food aid programmes.

This approach raises questions on food insecurity, food practices correlated with living conditions, modes of access to food, models and mechanisms of solidarity and social protection, food system sustainability and, ultimately, on the right to food and food democracy (Paturel and Ndiaye, 2020). The latter is linked to social justice (Fraser, 2014) and empowerment (Maurel, 2010) issues. In the cases presented in this chapter, the contribution of action research on food issues concerns its political dimension. This research seeks to capture practices underway, while striving to equip and potentially strengthen them so as to promote equal access to sustainable food. Observation and in-depth knowledge on food practices are hence essential to the action-research process.

In recent years, various action research programmes have focused on the issue of access to sustainable food for people in vulnerable situations, while adopting a critical approach to the food aid system on various levels: nutrition and food quality, people’s dignity and citizenship, food system sustainability and social protection for disadvantaged people. Many research experiments have been conducted in the United States on food justice and urban agriculture, and in Quebec on territorial food systems and combating poverty. In Belgium, an action-research project entitled *Solenprim*⁵⁹, was jointly carried out by food aid organizations, a solidarity buying platform and the *Fédération des services sociaux*. In France, we should mention the work of the Innovation research unit in Montpellier on short supply chains and social solidarity, as well as the supply of local fruit and vegetables to the *Restos du cœur* association in Hérault (Paturel and Le Velly, 2014); the action research project Accessible, conducted by the national *Centres d’initiatives pour valoriser l’agriculture et le milieu rural* (CIVAM) network⁶⁰; the action research initiative *Formes urbaines et gouvernance alimentaire* (FRUGAL)⁶¹, which is focused on the analysis of systemic challenges related to food supply systems in cities in the French Grand Ouest and Rhône-Alpes areas.

Hereafter, we will present action research conducted by the *Laboratoire d’étude et de recherche sur l’intervention sociale* (LERIS)⁶² and the *Initiatives pour une agriculture citoyenne et territoriale* (InPACT) network in the French Occitanie region since 2019, entitled “Food of people in vulnerable situations: from allocation to empowerment. Co-constructing third places of solidarity and food transition”.

59. *Solidarité en primeur(s)*: <https://solenprimcom.files.wordpress.com> (queried on 30/08/2021).

60. www.civam.org (queried on 30/08/2021).

61. <https://projetfrugal.fr/> (queried on 30/08/2021).

62. LERIS is an association founded under the French law of 1901 which brings together social science researchers involved in action research and study projects: www.leris.org (queried on 30/08/2021).

This project—designed according to collaborative action research principles—simultaneously addresses several food-related dimensions (social, environmental, economic, political, etc.), and adopts an research approach “based on action” and “with a view to action” (Bonny, 2014), while focusing on democratic food access issues (Scherer, 2018).

Regarding research *based on action*, it aims to monitor, analyse and account for the following dimensions on a territorial scale:

- food practices of people in vulnerable low-budget situations: food procurement methods and locations, consumption choices and possibilities (in relation to budget, health and cultural issues, etc.), meal preparation and equipment available, food-related socialization
- food solidarity practices and arrangements: professional and voluntary social intervention practices in terms of food access, types of products offered and food provisioning methods at food solidarity centres, public and private systems to supply and distribute food, informal mutual aid practices
- identification of public food and social action policies, and their potential convergence
- identification of the actors involved in territorialized food systems (TFS)⁶³, especially in terms of production.

This action research is not focused on quantitative monitoring of food-related social practices. The results therefore cannot be applied to a larger population according to the principle of statistical representativeness. This research is instead underpinned by existing previously published data, which it combines with qualitative field data, as well as with the testimony of those involved in the process and the sharing of their hands-on experience and practices. This experience sharing provides a basis for the collective action process inherent to collaborative action research, as well as a database to be tapped for research work and to gain insight into change processes linked to the implemented actions.

Regarding research *with a view to action*, “i.e. explicitly aiming to produce knowledge directly related to practical goals” (Bonny, 2014), it is geared towards monitoring, analyzing and equipping the following movements or changes:

- transformation of food practices to ensure greater safety, quality and sustainability
- enhancing universal access to sustainable food
- transformation of food solidarity practices to ensure greater empowerment
- transformation of the practices of food system actors to ensure greater territorial cooperation, thereby fostering sustainability
- politicization of food and food democracy dynamics
- seeking linkages between the experiences of those concerned, citizen initiatives, associative and private actors, and public policies, in a public action co-building framework.

These different issues are addressed by the groups involved and within the experimentation areas. Instead of reducing the research scope, this micro-scale ensures access to the full extent of the changes in the experience produced by the action research, as well as to the propagation and dissemination processes. In this respect, the

63. A TSE is “a group of agrifood chains that meet sustainable development criteria, located in a geographical area of regional dimension and coordinated by territorial governance”. (Rastoin, 2016, p. 13).

micro-scale allows for ‘increased laterality’, as opposed to ‘increased generalization’, which could clash with ‘vertical and globalizing forms of theorization or ideologization’ (Nicolas-Le Strat, 2013). The results of such an action-research mechanism are therefore specifically positioned, from a social standpoint, without reducing their scientific significance, which mainly depends on the research mechanism implemented.

► Action research watchpoints and scope

So-called collaborative action research raises questions as to the researcher’s methods and stance, which require ongoing review. Firstly, who asks the initial question? And why? From where do the research questions and their formulations emerge in a multi-stakeholder process involving researchers, actors and people involved, people concerned, institutions, etc.? There is a risk of imposing a top-down approach to the problem, sometimes simply out of opportunity, without considering the way those concerned approach the subject, which could be at odds with the action research ethos. This starting point could hamper the research process if it is not explained and discussed. The challenge is to be able to jointly build a problem from a theme, via the specific contributions of the various stakeholders, based particularly on experiential knowledge, e.g. that of people in vulnerable situations. Moreover, action research is based on two different dynamics from and with a view to action, which may be in opposition, particularly in relation to the targeted change: to what extent does the action research process convey an intention to change (at the risk of being instrumentalized)? Whose intention is it? How is it shared or not by the various stakeholders? How does it relate to the process of co-generation of knowledge and practices? This questions the researcher’s stance and his/her scope of intervention, in a two-way situation of investing in and distancing oneself from the action, which requires constant readjustment of the researcher’s role and adaptation to different contexts. The research process itself is called into question. When several researchers are involved, they may, for instance, each have different roles, with some being more involved in the action and others more detached from it. The scientific quality of the results is highly dependent on these constant readjustments, as well as their clarity. Another key issue is the status of real (physically participating in the research) and symbolic (not physically participating, but called upon by the participants) stakeholders in the action research process—to what extent are all of the stakeholders, including researchers, able to reconsider their knowledge, identify their contributions and reformulate the hypotheses throughout the process? Finally, it can be very demanding, even invasive for the ‘people concerned’ participating in the action research process, thereby generating asymmetry, particularly in terms of remuneration, relative to the other stakeholders. The role of the people concerned is especially important in collaborative action research, since they are likely to be beneficiaries, actors, respondents and analysts at once, which means that mechanisms must be set up to deal with this complexity and the role changes. The issue of the distribution of the system benefits also needs to be addressed: who benefits from the collaborative work? Who gains what from it? These benefits are on material, symbolic, political and recognition levels (financial gains, effect on a course of life, acquisition of new skills, access to new rights, a job, social recognition, professional development, exposure, etc.).

» Contribution of action research to a holistic approach to food

Collaborative action research is essentially receptive to a broad range of roles and viewpoints, as well as to multidisciplinary. It involves research processes based on the people concerned and in site-based experimental approaches that are likely to interest, concern and involve different disciplines. Universal access to sustainable food, for instance, raises questions regarding economic constraints, living conditions and practices (housing, equipment, materials, living environments, etc.), mobility, local foodscapes, access to information (nutrition, seasonality, health, etc.), social and cultural dimensions (educational level, family structure, cultural background, norms and values that impact food tastes, etc.), and psychosocial capacities (representations, preferences, etc.). Depending on the resources available, these questions call for a combination of sociology, anthropology, economics, geography, nutrition and psychosociology approaches within the action research initiative. Moreover, food solidarity and democracy mechanisms—at the crossroads of citizen initiatives, associative action and public policies—call for the involvement of management, economic and political sciences. Accordingly, many disciplines and their representatives can be encouraged to participate in action research processes focused on enhancing access to sustainable food, thereby generating results that could be appropriated by these different disciplines. The holistic dimension is relatively self-evident and geared towards co-producing knowledge with the people concerned, whose experience is multidimensional and not split between disciplines. A well-designed action research system cannot overlook the multidimensionality of its questions and subject, and its conclusions must be drawn in terms of multidisciplinary.

» A few application cases

The action research initiative ‘Food for people in vulnerable situations: from subjection to empowerment. Co-building third places of solidarity and food transition’, coordinated by LERIS and the InPACT network from 2019 to 2021 in Occitanie region (France), focused on six collective experiments on food solidarity schemes based on food quality and the exercise of citizenship. These schemes involved people in difficult circumstances, volunteers and association staff. A food third place is a cooperative space founded on the actor-beneficiary principle and on a blend of activities and forms of action related to the four main food system activities, i.e. producing, processing, distributing and consuming, to popular education activities, i.e. raising awareness, working together and transforming, and to social intervention activities, i.e. welcoming, mobilizing, participating and supporting.

The problem addressed by this action research is: “How can the implementation of third-place food solidarity and transition sites activate new forms of relationships within a given area, thereby forging social ties and solidarity, boosting support for sustainable local agricultural production, providing access for people in vulnerable situations to a chosen high-quality food supply, and promoting the development of more sustainable food practices for all? How can a territorial food system approach and a social development approach based on the people concerned be jointly developed, while being vectors of recognition and empowerment, and combining democratic dynamics, social justice and sustainability? (LERIS, 2019).

The programme is underpinned by three main assumptions:

- the development of a territorial, partnership and systemic approach to food access helps generate new opportunities for access to chosen high-quality food for disadvantaged people, in accordance with the right to food
- the implementation of a social intervention focused on enhanced agency—namely through the development of knowledge and skills—fosters self-sufficiency and empowerment in terms of food access
- the implementation of cooperative organization models facilitates the development of equitable and supportive social relationships and food democracy dynamics.

The LERIS team has developed a system that involves setting up and supporting one project group per area, between-group meetings and discussions with researchers, and the use of social science methods: monitoring, individual and group interviews and the organization of forums to foster public debate. Throughout the programme, the project groups were encouraged to use various tools to generate knowledge, including participatory surveys on food practices and expectations among local inhabitants, food aid recipients and local farmers; mapping workshops on local resources that could be tapped for the project; workshops to identify the skills of the people involved and the those required for the third place centres; system co-design workshops; work sessions devoted to project co-building, etc.

The experience of two of the groups involved in the action research enabled us to clarify and assess the method. The first was a group of people living in a priority neighbourhood, characterized by the low economic resources of its socially mixed community. This group was striving to create a café-grocery-kitchen based on sustainable food (bulk products, group buying of fresh local product in short supply chains, promotion of healthy food practices, collective kitchens, etc.), conviviality, social links and integration. The second was a group of volunteers—some of whom had experienced vulnerable conditions—from a major solidarity association that operated a social reception centre and a socially-responsible grocery shop located in the city centre and catering to people in highly vulnerable situations. The group focused on developing its action towards ensuring “dignified universal access to high quality food”, with two main objectives: to promote and offer high quality food and to allow people in vulnerable situations to become involved in the actions and thereby enhance their empowerment.

In the first experiment, the highly collective nature of the project, related to local mobilisation on a neighbourhood scale and to the various gateways offered to the project and to sustainable food (café, buying group, kitchen, bread oven, etc.), resulted in a form of horizontal organization (divided into theme-based committees) and autonomy, which required a high level of involvement of the members and gave them considerable decision-making power. In this project, the development of quality criteria for the choice of food products (charter) was, for instance, the focus of long-term joint work, thus generating food democracy dynamics. The direct involvement of food solidarity beneficiaries from the very start of the association, especially of the buying group, firmly anchored the approach in bottom-up dynamics, thereby helping to determine the needs and expectations of the people concerned. The opening of the project to a mixed public (‘vulnerable’ and ‘non-vulnerable’) is in keeping with the actor-beneficiary principle inherent to third places, thereby broadening the view of solidarity that is otherwise more rooted in reciprocal interaction than in the assister/assisted relationship. The high inhabitant commitment required by this

project and the absence of an institutionalized support structure highlighted its limits and called for reflection and adjustments to temporally anchor the process and ensure a form of regularity (with regard to the problems facing vulnerable households), yet without exhausting the project actors.

In the second experiment, socially-responsible food baskets—baskets of local fruit and vegetables offered weekly to families in vulnerable situations—were set up to offset the temporary closing of the place normally used by this group. Since the food distribution process is more conventional, this second experiment has been less productive to date in terms of the food democracy dynamics and the development of collective and participatory forms of organization. Otherwise this initiative has prompted a change in the association's practices in several respects: the regular provision of high-quality fruit and vegetables has led to changes in the food practices of the people served (eating more vegetables, discovering and cooking new products, etc.); the links with the producers and the production sites (visits, picnics, cooking workshops) have boosted the awareness of all the participants (volunteers and residents) to agricultural and food issues, and; the dialogue initiated with the hosted persons regarding the distribution of the food baskets enhanced the understanding of their practices and needs, thus promoting the creation of a permanent participatory working group, which will become the steering group of the future third place.

These two processes already existed independently of the action-research project, but were based on the support it offered. Several members of each of the groups took part in think tanks set up in the action research framework, thus contributing to the research co-production process, beyond their affiliation with the 'monitored area.'

In both cases, there were several aspects to what was tested and built: the methods used to raise awareness and get the inhabitants and people in vulnerable situations involved in the food issue; the choice of initiatives (buying groups, shared gardens, street kitchens, mobile bread ovens, grocery shops with two-tier pricing, participatory canteens, various workshops, meals, etc.); the selection of food products; the search for suppliers, logistics, pricing; the criteria for access to socially responsible food; the types of collective organization and decision-making (horizontal organization, participation of vulnerable people, setting up of theme-based committees, steering group, collective board of directors, etc.).

The action research work provided essential tools for this collective design process while highlighting the lessons learned. These concern the impacts of the processes from the standpoint of the various stakeholders and a methodological model for building a third place of solidarity and food transition. The results revealed ways to overcome the obstacles to access to sustainable quality food: working together, multi-stakeholder cooperation, food financing, producer-consumer links and partnerships, knowledge sharing, links between third place dynamics and public policies, and the way such local experiences challenge and contribute to the development of new policies. They also focus on the social value of these third places in terms of food security, health, social ties and cohesion on a neighbourhood scale, professional integration, support for agricultural activity development, and also the development of knowledge and skills, particularly skills related to collective action and knowledge of the food system and its issues. This ongoing action research initiative has thus produced results on food democracy and justice issues.

We conclude this chapter by highlighting several lessons learned from the presented case studies in terms of action research methods and ethics. Firstly, they showcased its highly contextualized dimension. The application context influences the process while 'driving' the method. The starting point of the process is crucial: who initiates it and at what stage are the people involved? The transformative impact largely depends on this. Two types of dynamics coexist in third-place projects: participatory dynamics focused on the people concerned, volunteers or inhabitants, as well as on their appropriation of the issues related to sustainable food and their capacity to act collectively; and project design and implementation dynamics, led by associative structures, particularly those with staff, which respond to calls for projects to fund the actions and structure the process. These second dynamics, which are more dependent on existing institutions, their temporal aspects and spaces, can conflict with the participatory or community dynamics. This dual trend is necessary for projects to progress, but it is important to remain watchful to ensure that the project mindset does not take precedence over the participatory dynamics.

Another issue concerns the balance between the social dynamics, driven by the project group, and the researchers' interventions. These researchers must find the right balance between 'doing', 'allowing' and 'working with' so as not to impose an action research pace, its funding and deliverables, while also supporting the experiments. Researchers must also strive not to be indispensable, as in most instances their presence is likely to wane. The extent of intervention is negotiated with the participants. The latter sometimes expect greater involvement, particularly in terms of project management, which can generate dissatisfaction or misunderstandings. This is a common problem in empowerment-oriented community organization practices, where the organizers gradually take a back seat to the people involved and their takeover of the initiative and decision-making processes. On several occasions, the positions and roles of each person had to be named and clarified. This clarification is essential in cases where the researcher's position is held by a community organization practitioner. The transfer of methods and tools is also necessary to ensure the sustainability of the process. Excessive researcher involvement can lead to fixation on the success of the project, which can complicate his/her analytical work. Regular exchanges of viewpoints between the various participants and their contribution to the analysis can help overcome this pitfall. However, not all participants can be involved to the same extent in this work and the situation may be especially difficult for those who are least involved in intellectual work. Providing time for knowledge co-production within the groups and at the same pace as the questions arise facilitates everyone's involvement.

Further lessons can be learned from a holistic approach to food. This action research raised issues of nutrition, health, food procurement strategies and changes in food practices. The recruitment of a trainee enabled us to begin addressing these issues. Further collaboration with nutritionists could help address them in greater depth. The results also fuel the critical approach to participation in and analysis of empowerment processes that are dear to LERIS, and enhance operational knowledge for the creation of third places for food, particularly with regard to social cohesion and diversity issues. The experimental processes also enabled monitoring of food democracy dynamics on a micro-political scale, i.e. that of the groups involved. Longer-term monitoring would enable analysis of the deepening of these dynamics, as well as their possible amplification and linkages with public policies. It is also essential to delve

deeper in the monitoring process so as to gain further insight into the conditions of emergence of sustainable and inclusive territorialized food systems. Novel cooperation between the territorialized food system actors was facilitated by the implemented experiments which, for instance, offer support for the installation or development of agricultural projects. However, observations on the systemic dynamics involved at the territorial level are still limited. Greater knowledge on these systems dynamics at the territorial level is necessary to better understand the conditions required for a transition towards more sustainable food systems. Action research programmes encompassing a larger number of initiatives within the territory are also needed to generate this knowledge.

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Chapter 14

Theatre workshops: accounting for food-sensitive experience

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Theatre workshops encourage participant involvement in an artistic creation process based on supervised improvisation exercises, with high emphasis on the expression of emotions, lived experiences and the formulation of criticism and alternatives. Investigators using this method should be skilled actors-facilitators while also being sensitive to social exclusion and oppression issues.

Action theatre emerged in French-speaking Belgium in the 1970s, in the wake of the May 1968 social uprising in Europe. It offered an alternative framework of expression relative to that of the dominant culture (Biot, 1996; Brahy, 2019) and became a prime tool for social actors. The resulting 'theatre workshops'⁶⁴ became a unique mechanism for enhancing the creative capacity and involvement in social debates of socially/culturally disadvantaged people. In the research community, action theatre—ranked within the broad category of popular theatre⁶⁵—is comparable to qualitative artistic and participatory methods. This approach is hence often used to produce knowledge, particularly in its sensitive (i.e. lived and experiential) dimension, and to transform situations deemed unfair or undesirable from the actors' standpoint, yet it is still seldom applied in food research.

This chapter first discusses the overall use of theatre in research and its specific features as a participatory method that is sensitive to people's experience and affects⁶⁶. Secondly, we describe the way an action theatre process helps unleash people's voices and reveal the social injustices experienced by individuals. The use of theatre

64. According to the Belgian decision issued by the Government of the French Community on action theatre (2005).

65. As an artistic and political movement of a theatre designed for and by the people, while addressing cultural democracy issues.

66. In the sense that theatre, even more so than other qualitative investigation methods (e.g. interviews, focus groups, ethnographic observations), provides a means of eliciting, externalizing and communicating sensations and affects through acting and role-playing. The term 'sensitive' is used in this sense throughout this chapter.

workshops to address a research question⁶⁷ concerning the social and cultural inclusion of a cooperative supermarket in Belgium revealed the mechanisms underlying inequalities in access to quality food and, more specifically, the feelings of injustice associated with the workings of the structure. This survey served as a case study to illustrate the novelty of the method, as well as its contribution to food research.

► Description and contributions of the workshop theatre method

Use of theatre in participatory research

Theatrical forms within the popular theatre sphere include a broad range of denominations and formats (social theatre, community theatre, developmental theatre of the oppressed, applied theatre, etc.), practices and practical arrangements (Conrad, 2004). These different forms all involve a diverse range of actors in the theatrical creation process. The latter is regarded as a means of expression, but also of reflexive analysis and exploration of pathways to empowerment and even personal and social transformation. Augusto Boal (1996), the Brazilian founder of the Theatre of the Oppressed, stressed the transformative impact of theatre, which he defined as a form of knowledge that helps us build our future.

In scientific research, collaborative forms of theatre may be used to meet this dual cognitive and transformational challenge. These approaches stem from participatory sciences and performance ethnography or so-called art-based ethnography (Conrad, 2004; Dennis, 2009; Muller et al., 2017). They are all hinged on the analysis of self-representations, i.e. representations of reality created by the concerned actors. The first major distinction with regard to classical qualitative methods is that the interpretation of these self-representations is part of a negotiation of meaning process whereby the researcher is not the only interpreter of the representation but shares this role with the different participants in a collective analysis. The second major distinction is that the aim of such approaches is to provide actors with 'stepping stones' to act on their world. These approaches therefore help address the ethical and political challenges of research (Jankowski et al., 2020).

Theatre as a participatory research method is leveraged in a range of disciplines, such as sociology, ethnology, psychology, medicine, education and environmental sciences (for a review see Heras and Tabara, 2014). However, the actual level of individual involvement and the mode of participation can vary markedly. There are two main approaches: one where participants' personal experiences are the starting point for the theatrical creation process, as in the case for action theatre workshops; and one where a performance is devised by a team of facilitators and then performed in front of a target audience, who then participate in a forum on the play (Heras and Tabara, 2014). Otherwise, for researchers using participatory theatre as an assessment method, theatrical performance is also viewed as a representation of global knowledge jointly encompassing the mind and body. Some authors stress the key role of action

67. FALCOOP action research project (Promoting access to sustainable, quality food for people representative of the urban diversity through the local implementation of an innovative cooperative supermarket model), funded by Innoviris.

in theatre, which enables the expression of embodied, culturally situated and socially distributed knowledge. According to Courtney, theatrical performance “offers an alternative performative way of knowing—a unique and powerful way of accessing knowledge, drawing out responses that are spontaneous, intuitive, tacit, experiential, embodied or affective, rather than simply cognitive” (Courtney, 1988 in Conrad, 2004, p. 16). Research that implements a theatrical method thus comes within the scope of both participatory and sensitive approaches by reinserting the affective dimension in the core of knowledge production.

Theatre workshops

The theatre workshops defined by action theatre rely specifically on these experiential, embodied and affective dimensions to produce ‘collective creations’. Brahy (2014) describes participants’ involvement in these workshops as “*engagement en présence*” (in-person commitment). The latter implies new modalities of coordination between participants that “places emphasis on emotions, feelings and corporealities.” (Brahy, 2014, p. 46). Theatre workshops involve ‘ordinary’ people guided by so-called actor-facilitators to produce collective creations whereby various dimensions of their experience are re-enacted. “In practical terms, a theatre workshop is an activity consisting of a number of repeated sessions (generally 3 h, once a week) with the same group (generally involving a dozen participants, ranging from two to up to twenty at most) for a relatively long or intense period (generally 10 months). This enables serious consideration (without always being successful) of a collective creation (usually theatrical), where the participants are actors in the play.” (Brahy, 2011, p. 80-81).

A session consists of improvisation exercises designed to develop the participants’ expressive fluency and some confidence in relation to the group through the collectively experienced languages.

The language may be verbal, as in the ‘gromolo’ exercise, i.e. an invented sound language involving multiple onomatopoeia (e.g. Ooh! Aah! Blarg!). This language on its own has no meaning—participants communicate with each other via gestures, vocal volume and intonation. The technique focuses on the energy that accompanies utterances while sidestepping the need to find the right word. This kind of language also helps break away from pre-constructed discourse so as to focus the exchange on the person’s emotions and feelings.

Body language is also possible, as in the ‘statue’ exercise whereby individuals have to stand still in a certain posture that represents what a situation, moment or term brings to mind. The statue notion therefore refers to a specific psychological stance. In this case, the signifier (the body) and the signified (words, images) are considered inseparable. Even when fixed, statues are suggestive of an emotion: joy, fear, sadness, anger, etc.

Contributions (and constraints) as a participatory and sensitive method

This approach, as a survey method, differs in several respects from semi-structured individual interviews and group interviews:

- the stances and relationship between the interviewer and the respondents clearly differ from those generally adopted in traditional interviews. Unlike a semi-directive

interview or group interview, the use of theatre—through its improvisational techniques—breaks with hierarchical relationships by creating a between-participant status equilibrium.

- through improvisation exercises and the collective creation of the play, self-representations, i.e. representations of reality created by the concerned actors, are asserted, analysed and criticized by the group—not solely by the researcher—in the sessions.

- the theatre workshops are not of conventional deliberatory form. They help to transcend difficulties associated with language, such as the building of an articulated discourse through ordinary expressive codes. The exercises are based on a range of verbal and non-verbal modes of expression (drawings, body exercises, simplified and invented language such as the ‘gromolo’ exercise mentioned above, etc.), which facilitate the expression and release of emotions in the presence of a group, especially when the language used is foreign to the actors.

- while the clarification of different viewpoints is jointly pursued in group interviews (e.g. focus groups) and theatre workshops, the former generate more emotional regulation/timing processes, implemented by both the interviewer and respondents, so as to enable each participant to clarify his/her standpoint, or to make it more ‘objective’. However, for the theatre workshops, diversity is also the foundation for sensitive individual expression, which is bolstered by a collective rhythm driven by an emotion that is no longer restrained by the group.

- similarly, unlike collective interviews, where one of the issues is the *a posteriori* collective discourse definition, in theatre workshops this discourse is shared by all participants through collective creation in the form of scenes jointly created by all participants. This collective discourse can sometimes be based on unique artistic stylistic devices such as metaphors.

- theatre also offers new opportunities for debate to a wider group, i.e. the theatre audience. The use of metaphors and symbols contributes to sharing emotions with the audience. These processes define the context of an empathetic actor-audience relationship. As we shall see, they also provide the framework for sensitive critical discussion rooted in the actors’ experience.

- the debate that takes place after the presentation of a play allows the various, sometimes contradictory, viewpoints to be expressed. The diverging views expressed can be perceived through the lens shared by everyone, i.e. the joint definition of alternative solutions to the represented tensions. These debates produce original material for analysis of the justification systems used by the variety of actors involved and the observation of the processes of co-construction of alternatives deemed fair by all.

- finally, compared to other participatory methods which struggle with the problem of keeping participants involved throughout, theatre workshops foster individual commitment through the shared pleasure of ‘doing things together’ and the mutual commitment to a collective creation process.

- this method, however, has its shortcomings. It is not a ‘quick’ survey method that can be easily deployed at a moment’s notice. It involves working with a specialist at a cost, and requires participant involvement for several months throughout the collective creation and performance process.

This collective survey approach provides access to dimensions that conventional survey methods cannot readily capture, such as elucidating the sensitive dimensions

of knowledge. Through emotions, the use of theatre in studies on food representations and practices creates a space conducive to expression and dialogue on the difficulties and injustices experienced, as will be illustrated in the following section ('A survey on social inclusion in a cooperative supermarket'). These experienced injustices can be related to feelings of inability to comply with normative discourses (e.g. eating organic or healthy food), to feelings of inequality in access to a sought-after food, or to exasperation with a social situation that is experienced as painful.

The theatrical method also nurtures a holistic approach to food. This method, combined with more traditional investigation methods, facilitates the reintegration of people's affects into the research, as articulated through the explanation of shared experiences of injustice. Beyond the mere identification of a problem or its collective analysis behind closed doors, it may be debated through public performances. Depending on the objectives and the theatrical resources used to achieve them, these debates can take the form of real experiments so as to be able to define collective actions. It is thus a transformative and empowering practice for the group, since the creation and public performance processes contribute to participant acquisition and sharing of fresh knowledge and skills. As a performative approach, the method therefore impacts the actors' lives. It can, for instance, increase their feeling of injustice through its collective expression. Researchers using this approach must therefore be fully aware of the effects that the performance process can have on both individuals and groups.

More broadly, the theatrical approach can also provide a transdisciplinary dialogue framework. Through the language imposed on everyone, i.e. that of the play, the approach generates a set of translations and explanations of the interpretative frameworks used by all of the participants (academic and non-academic). It can enable the representation, sharing and discussion of the research results, alongside the processes (factors, hypotheses) that produced them⁶⁸ (Faye et al., 2018). From an integrative standpoint⁶⁹, theatrical creation can also be regarded as the modelling of a situation or a fact by showcasing—within a space (the stage) and a limited timeframe (that of theatrical performances)—the interrelationships between different dimensions and their effects (Jankowski, 2019; Jankowski et al., 2016).

The use of theatre as a research method can therefore meet a number of different objectives and be designed in conjunction with other qualitative research methods or as part of a transdisciplinary approach. Depending on the research issues to be addressed, the theatrical arrangement and the methods for its implementation must be clearly defined before starting the research.

68. As part of a research project on water resource management in Senegal, an economic model on the the resource variation patterns was developed. The different factors considered in the modelling were thus specified for all of the other project stakeholders. The forums revealed that some key dimensions had not been taken into account. These were then reinserted into the economic model.

69. As part of research on the modernization of pastoralism in the Sahel, on the dissemination of plant genetic resources and on the concerted management of territories, theatrical arrangements were developed with researchers from different disciplines, including socioanthropology, economics, geography, political science, zootechnics, environmental science and genetics.

► A survey on social inclusion in a cooperative supermarket

In the FALCOOP action research project⁷⁰, theatre was used as a tool to encourage people to speak out about an experience perceived as unique, i.e. shopping in a cooperative supermarket and devoting 3 h/month to working there, for a group of people unfamiliar with this type of shop. Through theatre workshops, the aim was more specifically: to clarify the representations and values that local residents associate with this food distribution structure; to test the sociocultural fairness principles predefined by the supermarket cooperators by exposing them to the residents' feelings; and to create opportunities for dialogue between local residents and cooperators via public performances so as to consolidate the supermarket's sociocultural inclusion aims. Hereafter we specifically discuss the survey context and the way the theatre-workshops helped specify the affects associated with the cooperative supermarket, while providing a metaphorical critical framework to assess its functioning.

Tailoring theatre workshops to the survey context

The 'participant-actor' collective of the theatre workshop was formed in collaboration with a project researcher, a cooperative supermarket volunteer and a facilitator from a neighbourhood continuing education association historically serving Turkish immigrants. The collective was made up of a group of around 10 people of different nationalities (two Belgians, on French⁷¹, three Turks, two Moroccans, one Armenian and one Algerian) between 30 and 50 years old, and with diverse food practices. For instance, two cooperative members and the group leader regularly visited organic food outlets or food buying cooperatives. Yet the collective members had never joined a food cooperative of this sort, and they usually shopped in ethnic grocery outlets and hard discounters, where they sometimes purchased organic brand foods. At the first meeting with the volunteers, it was noted that they had a very low French fluency level. In this setting, the visual expression and body language exercises used by the theatre workshop actor-facilitator helped overcome the linguistic limitations and thereby fostered dialogue between everyone. The choice of these exercises, as well as the final format of the collective creation performance were shaped by this linguistic constraint. At each session, various gestural and vocal expression exercises were thus proposed to the participants to develop their fluency of expression and enhance their confidence in the group. An important feature of the theatre workshops is also the emergence of a sense of collective belonging through shared experience (Brah and Servais, 2016).

70. This action research project was geared towards supporting the implementation of the sociocultural inclusion objectives of a cooperative supermarket in Brussels. The cooperative supermarket model is based on voluntary participation—a monthly 2.45 h shift of members, who are both shareholders (compulsory minimum purchase of a €25 share) and membership card holders. Only card holders have access to the supermarket to do their shopping (the card must be shown to a member posted at the shop entrance, but a magnetic terminal will ultimately be installed) and participate in governance of the structure at general meetings. The accessibility to all consumers, regardless of their age, gender, nationality, language or financial resources was the aim when this cooperative supermarket was launched.

71. As she was not a theatre facilitator, the researcher involved in the approach was part of the creative process as a long-term participant observer.

A cooperative supermarket viewed through an affective lens

In order for the participants to express their emotions, the actress-facilitator used different improvisation techniques which were not necessarily verbal, as is often the case in a conventional discussion group. Some of the exercises were thus focused on the physical experience of being together through collective motor coordination and rhythmic body involvement. In one of the meetings, for instance, the actress-facilitator asked the participants to stand in line, shoulder to shoulder. She then instructed them to move forward together at the same pace, while maintaining contact with each person saying a sentence starting with “I’m fed up with...”. This statement was to be accompanied by a growing feeling of anger as they moved across the stage. After repeating this collective movement several times, the actress-facilitator proposed the same improvisation exercise, but this time the participants were asked to think about the cooperative without naming it, by referring more to something that embodied it and was related to food, or what the participants considered was associated food. In this exercise, all participants were driven by the same emotion—anger, according to the instructions explicitly given to the participants. Depending on the individual, this emotion was associated with different dimensions of the cooperative supermarket. In chorus, we thus heard:

“I’m fed up with cards!

I’m fed up with the workshop!

I’m fed up with the high prices!

I’m fed up with the word organic, organic, organic!

I’m fed up with everything good being too expensive!

I’m fed up with organic food!

I’m fed up with organic food shops!

I’m fed up with people telling us that we should eat organic food!

I’m fed up with nothing actually being done!”

In this exercise, an emotion common to all participants provided a vehicle for individual expression.

A metaphorical criticism framework

We should stress the importance of the metaphorical and symbolic references involved in this collective creation process, particularly their role in shaping a critical discourse on the functioning of the cooperative supermarket and in the sharing of emotions. A three-scene play was co-constructed over the course of the theatre workshops.

The first scene of the collective creation was based on a metaphor of a rocket trip to another planet—the cooperative supermarket. The rocket here represented a journey to a distant unknown area. The passengers stated that they did not understand why they had to make this trip to a planet that did not really concern them. This scene also represented a shift between crew members with very different roles and skills, i.e. the stewardess and the captain. The passengers were spectators of this operation—which they found surprising—and they were getting incomprehensible messages. This scene thus expressed the range of misunderstandings felt by the project participants during

a visit to a structure that they felt was not intended for them, the interchangeability of members in the various tasks to be accomplished within the cooperative, and the associated messages perceived as injunctions.

The second scene was based on the customs office metaphor which was representative of the regulated access to the cooperative supermarket, with cards symbolizing an exclusion modality. Participants viewed the supermarket card as being in the same category as bank cards, credit cards, etc. This metaphor derives from the participants' explicit categorizations to make sense of one dimension in the functioning of the cooperative structure, i.e. controlled access on the basis of the membership status. In this scene, the customs officer seemed to be more flexible about the rules when presented cards symbolizing consumption or when handed tickets. This scene thus embedded the cooperative supermarket in a more global consumerist model which was exclusionary since it required a membership card that generated selection mechanisms, thereby aggravating the inequalities.

The last scene was based on the metaphor of the discovery of a new planet, its food and inhabitants. Everything there seemed strange and especially expensive. The food habits of the inhabitants of this planet appeared irrational to the travellers. The project participants again expressed their incomprehension about the high cost of products sold by the cooperative supermarket and its participatory operation scheme.

Beyond its critical dimension, the use of metaphor generates a symbolic shift that facilitates experience sharing. Metaphor usually involves projection of the structure of a specific field of experience onto another field. In this collective creation process, the metaphor of the trip to a strange distant planet was intended to appeal to the audience through a shared experience. The trip actually represented a cognitively salient and readily accessible experiential domain that enabled to grasp another field of experience that was more abstract for spectators with heterogeneous territorial histories. Metaphors thus helped to reorganize the interpretative and conceptual field of situations and to reassess the value of the cooperative supermarket concept with regard to the participants' backgrounds and habits. In other words, metaphorical dramatization enabled participants to express their perceptions of the cooperative supermarket, while also conveying to the audience what the supermarket aroused in them. The feelings of strangeness and exclusion experienced by the participants were likely associated with the feelings they more generally experienced as migrants in their host society. This way of referring to personal experience and to a form of lived intimacy places criticism of the cooperative supermarket's *modus operandi* in a sensitive argumentative context.

In conclusion, this chapter describes some of the contributions and constraints of theatre workshops as a participatory and sensitive survey method, as illustrated by a case study on social inclusion features of a cooperative supermarket in Brussels. The aim—through the description of one of the theatrical improvisation exercises and the use of metaphor in the collective creation process—was to take into account the unique features leveraged by this approach (in comparison to other, more conventional approaches) for the specification and sharing of representations and affects associated with the cooperative structure. We also describe the scope of the metaphors used in the collective creation process in the sharing of emotions with a broader collective during theatrical performances. The set of metaphors associated with the supermarket—a

trip to a distant country, entry through customs, the need for papers and the cost of living—made the supermarket a metaphor for the migration trajectory and the host country. The collective creation process thus enabled participants to express themselves to the audience *on their experience* regarding cooperative supermarkets, as well as *from the standpoint of their immigrant perception* of these structures. The participants' criticism of the workings of the cooperative supermarket was closely linked to their own experiences and revealed as such to other actors.

As mentioned when presenting the method, one of the aims of action theatre approaches is to provide participants with stepping stones towards empowerment. While this experience did not profoundly change the participants' representations of the cooperative supermarket, it did offer them an opportunity to express and legitimize their criticisms of the cooperative structure. This collective creation was presented on several occasions to an audience of cooperative supermarket members, social and cultural workers, researchers and the actors' families. The audience expressed two opposing responses to the critical discourse against the cooperative supermarket in the play. Some welcomed this criticism as a constructive way of improving the structure and its functioning. Yet others voiced their disagreement with the criticism (which they felt was the result of a lack of information) on the obligation to work (whereas it was a social commitment), the overly high prices (whereas they were warranted by the fair redistribution to the producers and the high quality of the food) or even the injunction to buy organic food, as stressed in the play. The debate thus highlighted a rift that existed within the supermarket while questioning sociocultural justice principles. The issue of access to the cooperative supermarket for everyone was indeed a focus of debate during meetings—these debates generally revolved around the types of food to be offered, e.g. whether or not to sell halal meat. The theatrical performances offered participants spaces to publicly showcase their feelings of injustice, while also providing a means for more widely sharing debates that normally remain in-house. The sociocultural justice principles put forward within the cooperative supermarket were questioned with respect to the diverse range of experiences, conceptions regarding 'organic' food and justifications for its price.

Yet the main issue here was to clarify and account for the viewpoints of immigrant inhabitants who were not familiar with this type of food structure, and it was less a multi-actor approach (involving the diverse range of concerned actors) in a quest for new governance arrangements. Hence it was not a forum theatre approach, for instance, where one of the main aims is experimentation and collective definition of new forms of action through forums. Since the time of this survey, some elements of the cooperative supermarket's operation have been discussed and have evolved with, for instance, the creation of a socially responsible system for allocating volunteer time. Other aspects seem harder to change, such as reducing the margins on staple foods (such as flour, cereals, oil) so as to make them more affordable (Fourat et al., 2020).

As mentioned above, when using theatrical forms as a survey method, the approach must be tailored to the context and the research objectives. It is by no means a turnkey method that could be used regardless of the research issues in question. It requires strong commitment from the participants (including the researchers) and a diverse range of expertise (thematic, theatrical, experiential). As a research method, it also offers a new framework for revealing the affects involved in singular relational settings.

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Chapter 15

Focus groups: studying food and eating through thematic discussion

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The focus group technique consists of gathering research participants in groups to discuss a particular subject (focus) following a protocol clearly outlined in a discussion guide (script). The discussions help to frame the issues, reveal the diverse opinions, representations and practices, while setting the stage for further debate. The participant selection and data analysis phases are critical for ensuring the quality of the qualitative data collected via this method.

The focus group is a qualitative data collection method consisting of a semi-structured collective discussion between selected participants led by a moderator and an assistant. It is considered to be a “thinking society in miniature” (Farr and Tafoya, 1992, cited by Kitzinger et al., 2004, p. 239), because it opens “a window on the formation and evolution of social representations, beliefs, knowledge and ideologies circulating within societies”⁷² (Marková, 2014 [2003], p. 223). The aim is to collect information on a limited number of questions related to a clearly outlined subject (focus) that is predefined by the research team. The discussion is organized into a number of different phases based on a discussion guide (script) drawn up in advance by the researchers.

This chapter aims to contribute to formalizing the focus group methodology as applied to food. This contribution is based on a literature review and two research studies carried out in this field by the authors. The issue is all the more interesting because food practices are common, ordinary, everyday, routine, familiar, etc., and it is hard for those involved in applying the practices to call them into question. One of the main advantages of the focus group method is that it encourages reflection on such practices, as well as on representations that are more or less out of line with these practices (Poulain, 2017). But expressing a viewpoint can be tricky when the research topic is taboo or controversial, or when children are the research subjects.

This chapter is in no way exhaustive, and the method format presented is not applicable—like a recipe—to all research topics. It needs to be tailored to the situation. So

72. Translator’s note: Unless otherwise stated, all translations of cited foreign language material in this article are our own.

we have included advice based on the adaptations we made to overcome the difficulties encountered during our research (Box 15.1). This chapter focuses primarily on setting up focus group surveys and data collection.

Box 15.1. The use of focus groups in two research projects

The first study (Barrey et al., 2011) aimed to assess the concerns of eaters-consumers-citizens* regarding the first genetically modified animal product intended for human consumption—transgenic fish. The distinctive feature of this 2007-2009 investigation was that the participants were unaware of this novel product. Use of the focus group method allowed the researchers to represent this unknown commodity in different ways (photos, newspaper articles, explanations of the different applications and their aims). Genetically modified fish (GMF) was showcased as a potential product and the participants were able to react to it and express—in a complex rational way—their concerns about GM biotechnology and the potential marketing of GMF.

The second study (Tibère et al., 2018) focused on the status of two specific daily light snacks: the morning snack (at 10 am) and the afternoon snack (at 4 pm), among French children aged 3 to 15. Focus group sessions with children and teenagers complemented semi-structured individual interviews with parents. The aim was to allow these young eaters to speak for themselves so that the researchers could gain further insight into the status of these two snacks, especially the afternoon snack. Through the focus groups, the researchers were able to gain access to the childrens' and teenagers' perceptions, imaginaries and habits regarding this so-called 'light meal'. These two daily snack times have not been widely studied from a sociological perspective, even though they are socially regulated and framed by norms (temporal, spatial, in terms of content, etc.), but they have certain specific characteristics, in particular with regard to ways of eating and the foods consumed.

*We chose this label to indicate that the research participants were considered terms of three factors: their relationship to food, which involves their bodies, i.e. also a sociocultural construct; their involvement in socioeconomic exchanges; and their sociopolitical participation in the ordinary world and community life.

► First applications of the focus group technique

The first experiments with focus groups took place in the United States during WWII. The sociopolitical and scientific context in which the focus group survey strategy emerged predestined it for addressing major urgent issues that were surfacing in mass communications and propaganda analysis fields. Austrian-American sociologist Paul Lazarsfeld and American sociologist Robert King Merton created what at the time was simply called the 'focused interview' method (Merton and Kendall, 1946). It was quickly picked up and rolled out for marketing purposes, in association with academic research institutions which used it in research contracts with private firms. At that time, market studies were fully integrated in academic research. The focus group method mirrored the group dynamic techniques used by American psychologist Carl Rogers. The focus group approach then almost completely disappeared for more than 15 years, being overshadowed by experimental research based on behavioural models (Kitzinger et al., 2004). In the 1980s, it reemerged on a huge scale for applications in market research on consumer attitudes and motivations, particularly regarding food.

However, since the mid-1980s, and particularly since 2000, the focus group technique has enjoyed growing popularity in qualitative social science research, with social science journals publishing more than 100 articles a year on research involving this method (Morgan, 1998). Focus groups have thus returned to sociology, the discipline from which this approach burgeoned.

This tool is particularly cherished in the sociology of food and eating sphere, especially when the approach is based on social representations and values, whose impacts may be revealed by food studies. When researchers are assessing social representations, the focus group method is suitable for collecting data because the groups are highly dependent on communication, which is pivotal to social representations theory. As food and eating are subject to biological and environmental constraints, sociologists specialized in this field have often conducted interdisciplinary studies with scientists from disciplines more accustomed to using focus groups, e.g. nutrition and medicine, which has no doubt fostered the increased use of focus groups in food research.

► Learning objectives

In conjunction with other qualitative methods, the focus group technique fulfils five learning objectives, which involve gaining insight into:

- social issues as formulated by survey participants and not by experts or other so-called 'legitimate spokespersons';
- participants' opinions on a given subject (or even practices regarding a given subject), with the aim of gathering the widest possible range of viewpoints;
- participants' type of knowledge on the subject. The aim is not to assess this knowledge or to measure the gap between what is true and false, but rather to determine whether participants formulate their arguments based on scientific facts, experience or even beliefs. When participants express and compare viewpoints, they also discuss the sources and legitimacy of their knowledge. Hence focus group surveys also aim to understand how representations and positions are constructed;
- representations and opinions associated with subjects or topics that have not yet been actualized and are only possible futures or promises. For example, in a survey on genetically modified fish (GMF), representations of transgenic fish were hard to define because this product was not yet being marketed in France or the rest of Europe. We assumed that consumers were not the irrational beings often depicted in the scientific literature, yet it was still hard to get them to come up with a judgement or reflection on something that hardly existed in their minds. We thus chose this method to encourage participants to discuss their concerns about farmed and harvested GMF in a complex and reasoned way;
- the level of consensus on a given subject by shedding light on the points of agreement and disagreement.

The prime advantage of using the focus group method is the abundance of rapidly obtained data. However, researchers must not think that a focus group study with 12 people could substitute 12 in-depth face-to-face interviews⁷³. To be relevant, the

73. The purpose of in-depth interviews is to collect information from interviewees so as to help researchers understand the interviewees' viewpoints, namely the ways they interpret and make sense of the world and their own practices and experiences.

method should be chosen in the light of the questions asked, and few of the learning objectives of focus group surveys mirror those of in-depth interviews. Another advantage of the focus group method is the synergy generated by the group of participants. The latter may be encouraged to speak by hearing others talk, through a so-called 'snowball effect.' They are pushed to try to explain their vision, opinions and behaviours regarding the topic. Lastly, the focus group method is flexible and enables participants to freely speak their minds as they can discuss issues between themselves without constraint. They are thus less subject to a researcher-researched relationship, which is more prevalent in questionnaire-based surveys or during in-depth interviews. The canonical rules (Merton and Kendall, 1946) of the procedure stress that the organizers should precisely define the subjects to be discussed (focus), while during the sessions there should be a genuine willingness to listen to and learn from the participants, according to the saying "it is your focus, but it is their group" (Morgan, 1998). The concept is based on the premise that participants feel engaged in the discussion when their contributions are appreciated.

As the focus group approach is qualitative, it is not certain that the information obtained will be representative. Moreover, researchers could easily make interpretation errors if the data analysis does not take the context of enunciation into account—this is also true for in-depth interviews. On top of this, the data analysis is a major task. For instance, a 3 h focus group session generates a corpus of 60-80 pages of data, which all need to be analysed. Finally—and this is not really a limitation if the researcher is aware of it—focus groups are not 'neutral', i.e. participants are changed by them (new knowledge, new viewpoints, etc.). Sharing new viewpoints promotes reflection on the part of focus group members, perhaps even more so than during in-depth interviews.

As with other subjects, such as sexuality, harassment, etc., talking about food and eating can break taboos, touch on personal or private matters, or even cause heated arguments. Consequently, it is not always the best way to encourage people to talk. However, it should not be concluded that the presence of the group makes participants more inhibited than they would be in a one-to-one interview. Sometimes the opposite is true—the group situation can facilitate discussion because some individuals act as motors of the discussion and carry more inhibited participants along with them in synergy. The discussion can also provide mutual support, by allowing participants to express ideas or practices that deviate from the norm (or what the researcher assumes to be the norm), and silences are essential factors taken into account in the analysis. The moderator plays an important role in mitigating some of these limitations, while controlling any group effects that might inhibit the emergence of new arguments and prevent some participants from contributing. A range of situations may arise that need to be managed, as discussed hereafter.

More serious limitations concerning the use of focus groups were proposed by the creators of this method in the 1980s. Merton (1987) criticized improper use of the technique, such as when it was being used extensively in market research, and marketing manuals were describing focus groups as a particularly appropriate technique for students being trained in market research. Merton believed that the technique was useful for marketing, of course, but not solely in marketing research. He claimed, instead, that it was a set of procedures for qualitative data collection and

analysis that could help gain broader sociological and psychological insight into any sphere of human experience (Merton and Kendall, 1946). The focus group technique is still criticized in France today for this reason, whenever it is used for any other purpose than sociological assessment (Touré, 2010).

► Ethical and legal challenges

The risks to individual rights and freedoms that may arise from data handling, possible threats, and existing or future associated measures, are connected to the specificities of the subject of study and the study population.

In focus group investigations, collective data production – which is frequently filmed raises sensitive data protection legal issues. This is all the more relevant given that the widespread use of digital technology and the broad and rapid dissemination of information have prompted changes in the legislation. The General Data Protection Regulation (GDPR) came into force in the EU on 25 May 2018 to organize personal data protection. This personal data includes identification data (first name, home address, voice, facial features, etc.), indirect identification data (e.g. data that can be cross-referenced, such as industry worked in and place of work), as well as ‘sensitive’ data (health status, ethnic origin, trade union membership, etc.). Human and social science research programmes that involve personal data need to protect data relating to individuals involved in the research. The regulations cover researchers’ practices throughout the knowledge production process: data collection, processing, storage and dissemination. However, this step forward for research participants means constraints in the way researchers can organize surveys and implement technical measures. Participant consent is always mandatory to ensure compliance with the confidentiality and security obligations regarding the data collected. Consent in principle is often obtained ahead of the focus group sessions and then formalized on the day of the event.

In focus groups, participants share information of varying levels of sensitivity and confidentiality with the moderator, as well as with the other participants. It is therefore difficult to maintain a high level of confidentiality. When we work with ready-made groups, such as professionals working in the same firm, the information obtained in a session can be circulated by chit-chat between fellow workers, be made public, and in some cases even lead to conflict and stress. In addition, information derived from the participants’ scientific knowledge may be erroneous, as was the case with GMOs, for example. At the start of the focus group session, the moderator must therefore remind participants of the confidentiality instructions: the participants must keep the discussions confidential, and the researchers must protect the information collected. At the end of the session, the moderator must rectify any misconceptions and provide solid scientific knowledge, whenever possible.

► A tool for exploring social issues that is also useful to other types of surveys

While the focus group technique does not aim to generate representative results, the data collected via this technique can help in the identification of particular cases (life histories, rationales, practices, representations etc.) exemplifying more widespread phenomena. Carrying out multiple focus group sessions so as to be confident that the

research includes individuals with widely differing profiles allows the researchers to take a diverse set of life situations and lines of argument into account at the analysis stage. This interpretation of the data does not aim to highlight the overall picture or the complete reality of food and eating, i.e. something that is supposed to be discovered or revealed (as is the case in a deterministic approach, which seek to reveal explanatory factors for behaviours and representations). The data instead is viewed as a set of highly diverse resources that cannot be tied to any single shared culture or shared social space common to all focus group participants. However, generalizations may emerge from these diverse cases, in the sense of what Nicolas Dodier and Isabelle Baszanger (2004 [1997]) called a “combinative ethnography which, by working simultaneously in different fields, brings together a casebook that can be used to identify the different forms of action in which people may engage, along with the possible combinations between them” (p. 10). The researcher does not fix on a group already constituted, “from which he/she will reconstitute a collective whole. Instead, he/she circulates between several sites, depending on which dimensions appear relevant in the analysis of each case” (p. 19). Each new focus group is constituted with the aim of achieving a saturation effect, because the analyst expects to find in it a form of action or argument that had not existed until that point and that will force him/her to take it into account. The generalization thus achieved by considering multiple cases does not target the totalisation of data on social or cultural membership bodies, but rather it aims to highlight a combination of diverse, even contradictory, forms of action and argument.

This combinatory totalization is only possible by standardizing the qualitative research protocol so that it can be reproduced through a script that is common to all the focus groups. Finally, like any other data collection tool, the focus group method can be exploratory and provide a starting point for other qualitative or quantitative research methods geared towards understanding social phenomena from another angle. Exploratory use of the focus group method can inform research in human and social sciences as well as in nutrition, e.g. to prepare surveys on food consumption patterns tailored to the setting.

► Two case studies illustrating the practical application of the focus group method

There are several methodological stages to the development and implementation of focus group surveys. It is difficult to provide all the details of these stages within the confines of a single chapter. We therefore focus this section on the stages where modifications may be required (Figure 15.1)⁷⁴, addressing the data collection phase more than the analysis.

Organizing the focus group(s)

The first task is to develop the discussion guide, or script. The script needs to encourage the expression of the widest possible range of opinions, arguments and justifications; to prompt participants to clarify their statements; and encourage participants to tell their stories and anecdotes. Precisely complying with the sequence detailed in the script helps to ensure the reproducibility between the focus groups, to balance

74. On analysis, we refer readers to Marková (2014 [2003]).

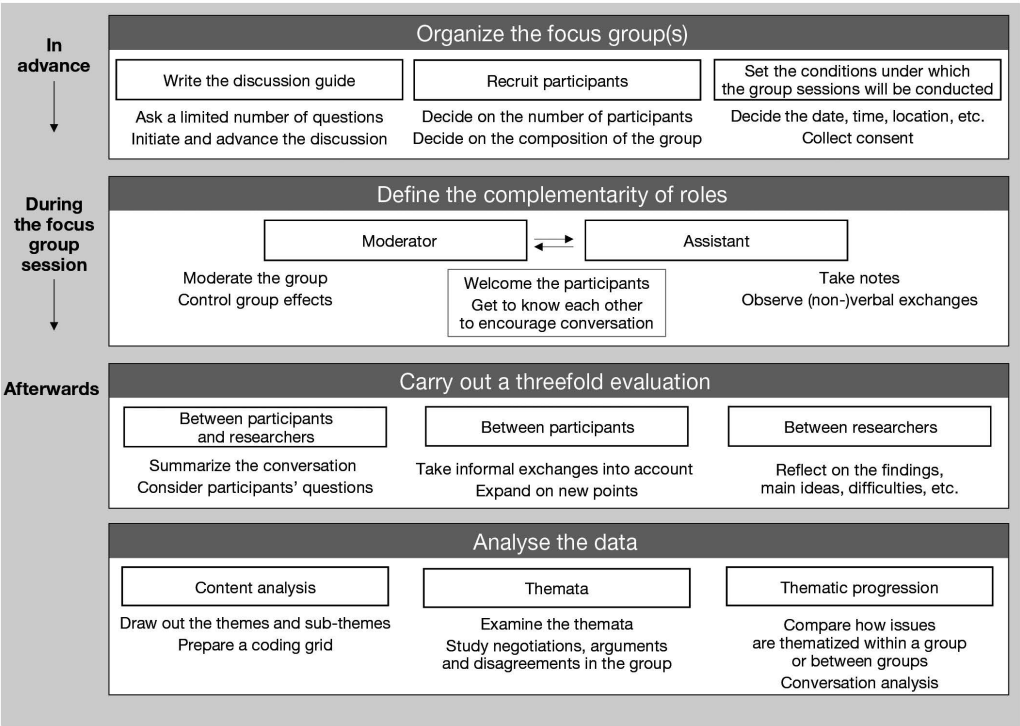


Figure 15.1 Stages in the focus group survey process.

the time dedicated to the various topics, while ensuring that all participants have expressed their opinions, etc. Scripts are generally divided into several sections. The introduction needs to be both specific and general so that the topics will be clearly defined yet not too narrowly constrained. It also has to make participants feel involved in the discussion from the outset. Then the script allows the moderator to initiate and develop the discussion on the chosen topics through a limited number of questions. Photos, objects or documents can also be incorporated into the script to make it easier for participants to narrate concrete events. For example, in the study on GMF in the French market, the script included photos⁷⁵ referring to specific purchasing situations (in the first part), different types of fish farming strategies (in the second) and different applications relating to GMF that were under way at the time (in the third part). Participants were able to point out their ways of choosing and purchasing fish while putting forward their opinions on the different situations presented.

The recruitment of the participants, i.e. experts or lay people, must allow the different actors concerned by the research topic to be represented. The group consists of around 6 to 15 individuals and the selection must be balanced. A group that is 'mixed' in terms

75. In the context of this study, there was nevertheless a question regarding the use of 'real' or 'fake' photos or information. When we started developing the discussion guide for the GMF study, a colleague suggested showing a photo of a tin of tuna with a false claim along the lines of 'GMO free' (such claims were not permitted in Europe). After consideration, we decided to use only real photos or documents so as not to add further uncertainties to an already highly complex subject.

of their socioeconomic profiles or of their share in the action may have less spontaneous interactions or make some other participants feel inhibited about sharing their personal experience. Otherwise, a homogeneous group may lead to flat exchanges lacking contrast when the aim of the technique is to explore different viewpoints through discussion. In a research study on afternoon snacks, splitting children and young people into two age groups (ages 7-10 and 11-15) allowed the researchers to distinguish the specific viewpoints of each. The age split also highlighted differences (in norms and practices) that are socially situated according to gender, parents' socioprofessional categories, the presence of siblings, and the food consumption location (at home or away from home).

Focus group sessions can be hard to organize and conduct because of the need to bring together several people in the same place at the same time. After obtaining the participant's consent (or that of their legal guardian, in the case of children), it is important to notify them (and later remind them) of the date, time, duration and location of the focus group session, in order to reduce the number of absentees.⁷⁶ Information must also be provided about the context of the focus group survey, including the topics to be covered (presented in an attractive manner) and how the information will be used. Providing reassurance about confidentiality will help reduce participants' potential concerns. All participants must be asked in advance for their consent to audio or video recording.⁷⁷ Audio recording ensures data traceability and also generates better quality data than note-taking by hand. However, video recording is preferred for two reasons. First, during the transcription process, it is helpful to be able to see who is speaking. Second, it allows participants' facial expressions and gestures to be recorded and analyzed. Such reactions provide information in the same way as the participants' discussions and are not always easy to note down during the focus group sessions (even if the observer is paying attention to these aspects).

Defining the complementarity of roles

Using the focus group technique generally requires two people with complementary roles: a moderator and an assistant.

With the assistant's help, the moderator has to help the participants get to know each other by allowing them some time to talk between themselves or by initiating a little general discussion to introduce everyone or talk about why they are taking part in the research. The goal of this phase is to create a conducive atmosphere and break down barriers so that, when the focus group session starts, the participants will feel relaxed enough to speak freely. This informal discussion on the reasons why people have decided to take part is often a mine of information for the researchers. Before the discussion gets under way, it is a good idea to remind everyone of the context and objectives of the research while outlining the 'rules of the game' so that everyone can

76. To stimulate collective discussion, the location should be neutral, pleasant, accessible by the study population and have the necessary equipment (table, projection equipment, etc.). These days it is possible to conduct focus group sessions in a dedicated facility (usually in market research firm offices or universities), as we did for the study on children's and adolescents' afternoon snacks. We used a facility in the centre of Toulouse which was easy for the families to get to. It was set up according to the researcher's requirements, and technical equipment (for recording, showing pictures, etc.) was available. It also had a one-way mirror so the researcher's assistant could view the focus group live and proceed with the pre-analysis. In this case, the assistant and the moderator communicated with each other during breaks.

77. The consent of children's guardians is required for minors.

express their views under the best conditions. One of the rules is that only one person can speak at a time. This means that everyone can hear each other while making it easier for the person who will transcribe the discussion later. Then the moderator's main goal is to advance the discussion according to a very precise structure set out in the script. For instance, in the research study on children's afternoon snacks, we tried to liberate participants from their 'personal norms' linked with cultural, social and family traditions by first asking them what they considered was a 'real afternoon snack'. Later we reconstructed the diverse practices depending on physical context (at home or away from home; bedroom, kitchen or living room) and social context (peers, siblings, parents, grandparents, etc.). We finished by asking about representations of the afternoon snack in relation to health concerns.'

One of the greatest difficulties for moderators is managing the 'group effects' that can hamper the emergence of new arguments. Several different situations may arise:

- one participant may simply listen to what the others say and never speak. Whatever the reason for this (shyness, lack of interest in the topic, etc.), the moderator must draw this person in by addressing him/her directly with a new question or subject ("What about you? What do you think about that?");
- in contrast, other participants may monopolize the speaking time by systematically stating their opinions first, wanting to have the last word, or constantly disagreeing with what others say. The moderator has to discourage such behaviour before other participants no longer dare to express an opinion or they all follow the same direction as the leader(s). To achieve this, the moderator can react to statements so as to make it easier for others to join the discussion ("That's a very interesting point of view. What do other people think about this?");
- a participant may find it difficult to stay on topic and deviate from the initial question. The moderator can steer the participant back on topic, as suggested earlier, by stressing the importance of everyone's opinions;
- some participants may form alliances so that the discussion becomes polarized between sides. In this case, the moderator is permitted to suggest a different viewpoint (e.g. one heard in a different focus group) so as to broaden the discussion;
- some participants may tend to follow the majority opinion, in line with the 'desirability' effect so familiar in qualitative research methods. To reduce this tendency, the moderator can encourage the participant to give his/her own opinion to a greater extent.

The moderator's job is also to maintain eye contact with the group, to dig deeper into the participants' statements or get them to be more specific ("Can you give me an example?"), to reformulate what is said and ask for confirmation so as to be sure that they understood correctly, and lastly, to ask for other viewpoints ("Does anyone have a different take on this?"). The moderator must also remain neutral throughout (not take sides with anyone but give equal value to all opinions); appear relaxed and not too professional or inhibiting so as to foster constructive discussion while not diminishing the seriousness of the topic; and finally draw up and deliver an overview of the discussion.

Ideally, focus group sessions should be conducted with the help of an assistant, who should be involved from the start of the organizing process (organizing the recording, welcoming participants, collecting consent forms for recording, etc.) As an example, during a survey of children, the fact that the moderator and assistant were present at the same time meant that the children and their parents could be welcomed and all

the practical considerations taken care of (consent, ending time for the focus group session, etc.). Welcoming the participants ensures a warm, friendly atmosphere. A second person is also required during the focus group session to deal with the technical aspects, e.g. starting and checking up on the recording equipment. The assistant is generally seated outside the circle but in a place where he/she can see the moderator and all the participants, to facilitate communication. If seated close to the door or behind a one-way mirror, the assistant can also welcome any late arrivals and explain what they should do outside the room where the discussion is taking place, so as not to interrupt the flow of the focus group session. Yet the assistant's most important task is to take notes, monitor the discussion and provide support in controlling the group and advancing the discussion. The notes should capture 'key phrases', with or without the assistant's personal comments, the order in which the participants expressed themselves, and participants' body language and non-verbal expressions. The assistant is less directly involved in running the group and therefore may be able to identify aspects of interest during the focus group session or the analysis phase.

Conducting a threefold evaluation

At the end of the focus group session, the moderator delivers a final summary of the discussion with the help of the assistant. This means that participants can be asked if they agree with the summary and if anything has been omitted. The participants may ask their own questions at this point. As with other data collection methods, however, the show does not end there! In addition to the usual thanks and handing out of small compensatory items at the end of the discussion, it is a good idea to tell participants that the results of the focus group session will be shared with them, thereby providing a potential opportunity to hold another group discussion to test the analysis methods used and the main findings.

Bonds may form or tensions may arise between the participants during the discussion, so it is good to allow some time at the end of the session to let them talk with each other and just listen. This stage may be more informal and 'off the record' (not recorded). Here the discussion can be extended or new discussion points addressed. Participants may also have questions they want to ask the moderator or another individual who is present, either because they did not dare to do so during the focus group session or because it was not possible to reply at the time.

Lastly, the moderator and the assistant need to hold a debriefing at the end of every session. This questioning and feedback provides an opportunity for immediate reactions to be noted, such as any difficulties encountered, the main ideas of the group, or even unexpected results.

Analysing the data

Here we would like to briefly touch on some strategies for analysing focus group data, even though, as Marková (2014 [2003]) pointed out, such analysis is not yet very highly developed or widely published in focus group manuals. Marková identified four types of analysis that may be carried out individually or jointly in a complementary manner: – content analysis, whereby the themes and sub-themes linked to the participants' discourses are developed. This type of analysis is very useful for initially paring down the very large corpus of collected verbal data;

- themata analysis, in the theoretical tradition of Moscovici (2000). Themata are linguistic units specific to a generation or culture and transmitted through language, along the lines of ‘good/bad’, ‘dominant/dominated’, ‘fair/unfair’, etc. In studies on food and eating, we feel that this kind of analysis is particularly relevant, while also being potentially useful for analysing long-term changes in these signifiers. Thus, an analysis of themata regarding GMO food allowed the analysts to identify categorizations, such as ‘living/not living’, ‘edible/inedible’, ‘food/product’, and to question ideas that had seemed self-evident. For example, in our first focus group sessions in 2006-2007, the opposition between animals’ ‘wellbeing’ and ‘suffering’ did not emerge, yet 2 years later, after many reports on salmon farming had come out, fish were, according to the participants, included in the category of sentient beings (along with livestock and pets) or subject to ‘stress’ or ‘suffering’. In the study of food, then, something that seems self-evident can be problematized or questioned;
- thematic progression analysis is relevant when the moderator provides participants with new knowledge, which is what occurs when the collective discussion topic is unfamiliar. The researcher can study the development of arguments in association with the ‘progression’ in participants’ knowledge;
- conversation analysis is in the same family as thematic progression analysis, but it is focused on a more micro-sociological level as it aims to take the enunciation context of the focus group into account. It highlights the communicational embeddedness of the discussed content, and how the sequence of the focus group interactions also has an influence on determining the content discussed. The analysis focuses on ‘what is said’ and ‘how it is said’.

We also feel that it is relevant to carry out a biographical and personal study of the participants as a complement to the other analyses. Focus group corpora are a rich source of this type of data, which is required for contextualizing what participants say, their resources and trajectories.

►► A method that can be tailored to topics, populations and contexts

When the subject addressed in the focus group session is highly controversial and likely to lead to heated debate over conflicting viewpoints, the order in which questions are put forward in the discussion should be adapted to the situation. As we found in our study on GME, it is a good idea to structure the script in such a way as to tackle the most sensitive questions towards the end of the discussion and to start with open, less provocative questions. With subjects such as dietary balance, GMOs, functional foods, or relationships with highly processed foods, the first part of the script can be devoted to food habits (likes and dislikes, purchasing behaviours, food outlet locations, choices, etc.), and the opinion questions can be addressed later, once the participants have gained some confidence.

The use of the focus group technique among children helped to foster “a diversity and divergence of opinions, as well as consensus” (Marková, 2014 [2003], p. 221) regarding the norms related to afternoon snacks. This technique created synergy between the children or adolescents and limited or even reversed the researcher-researched asymmetry that may arise in one-to-one interviews. Furthermore, in the survey on snacks, the use of this method enabled us to collect information directly

from the individuals who consume the snacks, in addition to parental comments, while avoiding the pressures from the family household environment and conformism to parental rules that we would have had to consider if individual interviews had been carried out with the children in the presence of their parents at home. When we conducted semi-structured interviews with the parents, their children sometimes appeared and were invited by their parent and/or the researcher to talk about their own experiences. The children's comments were rich in information, e.g. regarding afternoon snacks at school (norms and practices), but they also sometimes disrupted the individual interviews with their parents. The two following examples shed light on this tricky situation. In the first example, the mother in a family censored her child's comments and asked the child to leave the dining room because he had offered examples that contradicted what she had been saying. She had been focusing on afternoon snacks that were nutritionally 'good,' while the child had given examples of nutritionally 'bad' afternoon snacks consumed at home, thereby dismantling his mother's 'good parenting' norm. Once he had had left, the mother stressed that the child, in her words, "was looking for attention". In the second example, an adolescent hinted—after his mother had left the room to get some water in the kitchen—that afternoon snacks were very different depending on the context, specifically when he was at his father's place (because of alternating custody) or with friends. But he could not expand on this because his mother was returning from the kitchen. We thus felt it would be appropriate to carry out focus groups sessions with 19 children (aged 7 to 10) and adolescents (aged 11 to 15)⁷⁸, in addition to individual interviews with parents. However, we had to make some adaptations to be able to conduct focus group sessions with children. We used a range of play-based tools to capture the children's attention, avoid polarizing the discussion between moderators and participants and encourage collective discussion. In addition to using pictures to describe foods consumed, we also used projective techniques based on drawing: "If you were an afternoon snack, what would you look like?" (Figure 15.2).

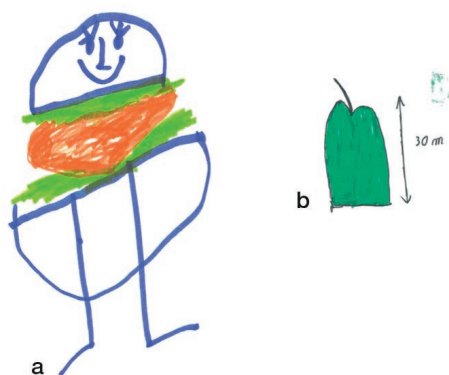


Figure 15.2 A projective technique to understand food representations.⁷⁹

78. To avoid the risk of bias, we decided that the children involved in the focus groups should not be related to the parents interviewed in the first stage of the survey.

79. The drawing on the left was described by its creator as "a sandwich with some healthy things and some other things I like" (Soledad, aged 7). The creator of the right-hand drawing said it represented "an apple 30 m tall so people can share it" (Thomas, aged 10).

Each child drew a picture before presenting and explaining it to the rest of the group. Beyond the argumentative dynamics, this question enabled the researchers to obtain an individual response that was not influenced by the rest of the group, and hence to also study the conversational interactions.

The focus group technique is still not highly formalized, even though it is widely used in the social science research. We have highlighted its differences from other apparently similar techniques, such as focus groups in marketing, talking groups in psychology, or other forms of collective discussion⁸⁰, where the operational aims steer, and sometimes even determine, the way the discussions unfold. While it is possible to operationalize focus group findings retrospectively, we believe it is risky to use this tool without the critical vigilance that prevails in sociology research.

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80. Such as Alain Touraine's sociological intervention that aimed to help a collective (of anti-nuclear activists, for example) to formalize their arguments so they would be better formulated and voiced in both public and political arenas.

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Researchers rarely reveal the details of the methodological choices on which their research is based. The theoretical and practical considerations that have guided them in these choices often remain implicit. In this book, the focus is on methods for studying food and 'eaters'. The use of the term 'eaters' is intended to distinguish them from the simple image of a consumer. It emphasises the multi-dimensionality of the act of eating, an act that engages individuals socially as much as physically and inserts them into space and time as well as into economic exchanges.

This book is the result of a collective effort by some forty established researchers. The aim is to provide a critical overview of fifteen methods currently used in or at the crossroads of different disciplines: anthropology, economics, geography, nutrition and sociology.

The book will be of interest to students, teachers, expert researchers and other professionals looking for methods to better understand or refine their own tools for studying food and eaters.

Olivier Lepiller is a sociologist and researcher at Cirad (MoISA) in Montpellier, France. His work focuses on contemporary social transformations in food norms and practices and on pathways to more sustainable food systems.

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Cover: © Benjamin Delande, 2021. In French, MIAM means YUM! MIAM is also the acronym of the French version of this book: Méthodes d'Investigation de l'Alimentation et des Mangeurs.



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