Research Methods in Nutritional Anthropology

Edited by Gretel H. Pelto, Pertti J. Pelto, and Ellen Messer

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The United Nations University

Food and Nutrition Bulletin Supplement 11

This book represents the results of a project commissioned by the United Nations University for the International Union of Nutritional Sciences Committee on Nutritional Anthropology. A number of papers were presented at a UNU-sponsored workshop held in Cambridge, Massachusetts, in November 1983; from those papers, several additional commissioned works, and the workshop discussions came the present volume. The book describes anthropological methodologies applicable to field studies in nutrition. It also describes strategies of field research in nutritional anthropology, determinants and cultural components of food intake, methods for collecting and analysing data on energy expenditures, and mathematical modelling techniques for nutritional anthropology.

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Printed in Hong Kong

WHTR-9/UNUP-632
ISBN 92-808-0632-7
United Nations Sales No. E.89.III.A.4
03000 P

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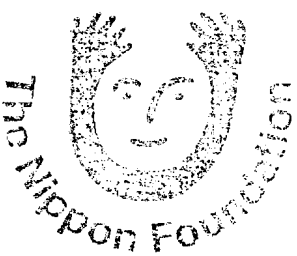
Supported by



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Foreword

Nutritional anthropology has emerged as a new branch of applied anthropology over the past 15 years, and its methods are having an important influence on the methods of nutrition survey and nutritional epidemiology. This book originated with United Nations University support for a workshop organized by the International Union of Nutrition Science's (IUNS) Committee on Nutritional Anthropology. This workshop was convened at the Massachusetts Institute of Technology in September 1981. The IUNS committee, under the chairmanship of Gretel Pelto, commissioned the papers in this volume.

The field of nutritional anthropology has continued to develop rapidly since the original workshop and the subsequent period in which the chapters were written. Nevertheless, the chapters provide targeted methodological guidance that is not available elsewhere for applying anthropological methods to the conceptionalizing, conducting, and analysing of nutritional studies.

This book is intended for both anthropologists and nutritionists who are pursuing community nutrition studies in either industrialized or developing countries. It provides solid information on the development and application of anthropological methodologies for studying key aspects of the nutrition of individuals, families, and communities. An introductory overview of methodological options in nutritional anthropology and strategies for field research provide a background for the more specialized chapters, which deal with methods for studying nutritionally related social behaviour and household functioning, the determinants of food intake, the analysis of energy expenditure, and appropriate statistical methodologies.

The United Nations University has also encouraged the extension of anthropology to nutrition by the continuing sponsorship of a computerized global "Directory of Anthropologists and Sociologists Concerned with Food and Nutrition" and by establishing, with UNICEF and Ford Foundation support, a worldwide network for the involvement of anthropologists in the assessment of programmes of nutrition and primary health care. The experience of this network has resulted in the development of a monograph, *Rapid Assessment Procedures for Nutrition and Primary Health Care: Anthropological Approaches to Improving Programme Effectiveness*. This monograph

has been published in English and Spanish by the Latin American Center, University of California, Los Angeles.

The United Nations University hopes that these publications will contribute significantly to the increasing recognition and use of nutritional anthropology in developing as well as industrialized countries.

Nevin S. Scrimshaw,
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Introduction: Methodological Directions in Nutritional Anthropology

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During the past decade many nutritional scientists have become interested in multidisciplinary approaches to problems of malnutrition. At the same time, there has been a growing recognition among other social scientists of their potential role in research and programme development with respect to nutritional issues in the modern world. Increasingly, anthropologists and other social scientists have become involved in research and applied activities in nutrition. From such collaboration, new directions for research are emerging. Among these, the comparatively new subdiscipline of nutritional anthropology is beginning to generate a body of data and theory on the relationships of nutrition to socio-cultural, economic, and ecological processes.

The data and theory of nutritional anthropology reflect anthropological methodologies, including some of the basic, traditional features of the discipline, such as community studies and participant observation. But there are also some research procedures that have been developed recently to address new research questions. This volume of papers focuses on the latter set of more specialized methodological concerns and is intended not only for anthropologists but also for researchers in other disciplines. The book is not meant as a field guide to take researchers, step by step, through the process of carrying out a research project in nutritional anthropology. Most of the chapters are devoted to in-depth examination of specific content areas or methodological problems that are likely to be important in field-based nutrition studies.

The emphasis in this volume is on applied research, on investigations that are carried out for the purposes of general nutrition planning and specific programme development, as well as evaluation of ongoing programmes. At the same time, the discussions of research tools and issues will also be of use to theory-oriented researchers working at some remove from applied projects, since many areas of theoretical concern are closely intertwined with applied, practical aims.

THE SCOPE OF THE VOLUME

The work of nutritional anthropologists, like that of other anthropologists, covers a broad spectrum of theoretical perspectives, utilizing a wide range of research tech-

niques. Some investigators focus on the cultural context, seeking to understand the meaning of food in cultural and symbolic terms. Others are interested primarily in identifying the linkages between local conditions and national and international political and economic forces. Biological anthropologists emphasize the interactions of genetics, physiological processes, population characteristics, and a wide variety of nutrition-related diseases. Medical anthropologists working in community health projects are usually concerned with the interrelationships among community health programmes, dietary patterns, and other aspects of local and regional cultures. While there are a number of commonalities among these different approaches, especially the commitment to a "holistic," multifactorial analysis, the research techniques that could be included in this volume are many and varied. To bring the volume and the workshop that preceded it to manageable proportions it was necessary to select only some research areas from the full range of relevant anthropological work. Several criteria guided this selection.

One criterion was to exclude those aspects of methodology that have been extensively examined by nutritional scientists, including food intake measurement, anthropometry, and other measures of nutritional status assessment. These are topics on which there is an extensive literature. However, some comments about the use of ethnography to improve dietary intake measurements are put forward in this introduction because this matter has received little attention.

A second criterion by which the scope of discussion was narrowed was to exclude socio-cultural issues and concepts that have been well covered in the standard literature of anthropology. For example, details of measuring "socio-economic status" or "family organization" are not addressed, even though they are often of major importance in nutritional anthropological research. (See "Methods for Studying Determinants of Food Intake" by E. Messer in this volume.) Because these concepts are widely used by socio-cultural anthropologists, discussions of the methodological issues involved are readily available (Pelto and Pelto, 1978; Scrimshaw and Pelto, 1977).

A third criterion was that special attention should be given to the problems of transforming qualitative, descriptive information, e.g. about food-use patterns, social factors, and activity patterns, into quantifiable observations that can be used in statistical analyses. The rationale for this criterion involves the assumption that one of the important strengths of the anthropological contribution to nutrition research is the description of cultural processes. To be useful in practical application, these descriptions often have to be focused at the level of individual or household units – the same units that are used for measurements of nutrition and health variables.

A fourth criterion was an emphasis on problems of research design and data analysis, a feature that becomes particularly critical in multdisciplinary research. Finally, we felt it would be important to include some discussion of the types of issues that are encountered when research designs meet the realities of field situations.

The papers in this volume reflect these criteria, modified by the inevitable realities of adjusting a final product to the exigencies of individual schedules and time demands. Most of the papers were originally prepared as background papers for the workshop described in the Foreword. Several were prepared after the workshop, and some of the original background papers are not included here.

The first chapter, by Ellen Messer, reviews the theoretical background of a large component of nutritional anthropology through an examination of determinants of food intake. The chapters on energy expenditure measurement (J. Nydon and B. Tho-

mas), time allocation measurement (E. Messer), and analysis of cultural patterns in food intake (J. Goode) examine the most common "core areas" in the research field identified as nutritional anthropology. These chapters are included because they, like the others in this volume, are relevant for effective implementation of multidisciplinary research at the interface between nutrition and the socio-cultural and economic features of a society. The chapters on research design and field strategies (P. J. Pelto) and mathematical and statistical procedures (M.C. Robbins and L.C. Robbins) address a wide range of methodological concerns related to the process of collecting and analysing research data. The materials in these chapters include broad methodological questions of design, as well as quite specific discussions about the strengths and weaknesses of key measurement strategies.

THE ROLE OF GENERAL ETHNOGRAPHY

All of the chapters in this book were written with the assumption that specific kinds of quantified data would be gathered against a background of general ethnographic information. In this context, ethnography may be regarded as field-based data gathering carried out for the purpose of providing both qualitative and quantitative descriptive information in a community, region, or other research site. Participant observation, as well as open-ended and structured interviewing, are typically part of the ethnographic process (Ellen, 1984).

Anthropological traditions place emphasis on the importance of long-term residence in a community, with many months of descriptive research as an essential prerequisite to focused, quantitative data gathering for purposes of hypothesis testing. However, intensive ethnographic field-work is often seen by other researchers in a multidisciplinary team as too costly in terms of both time and money. As discussed in the workshop, the resolution of the conflict between the ideal, as developed through decades of anthropological research tradition, and the requirements and expectations of multidisciplinary projects, can be facilitated in several ways.

First, a high priority should be placed on defining, as precisely as possible, the *specific* ethnographic needs of a project. In so far as it is possible, background descriptive materials, gathered through participant observation and interviewing, should be focused on those aspects of culture, social organization, and economic systems that are directly relevant to specific theoretical and practical questions. At the same time, ethnographic research should be opportunistic and open-ended, prepared to explore new areas that appear to be relevant to the specific research questions.

Second, anthropologists should undertake to develop guidelines that are regionally and ecologically specific for key domains of ethnographic data relevant to nutritional anthropology. For example, in most areas of intensive agriculture, modes of land ownership and cropping patterns are nearly always relevant to an understanding of local and household differences in food availability. In urban areas, information on the organization of commercial food distribution and transportation networks is essential to understanding food-use behaviour. The influence of religious beliefs and practices are quite peripheral to food-intake patterns in some regions, while they play a large role in other cultural settings. A general overview of the key factors affecting food production, distribution, and consumption could help direct nutrition researchers' attention to potentially important data-collection activities.

Third, in testing and developing more refined ethnographic strategies, the strengths and weaknesses of direct observation compared to key informant interviewing should be assessed with respect to specific areas of data. Of course, the effectiveness of particular ethnographic methods is context-specific and can vary considerably among different communities and regions.

ETHNOGRAPHY AND THE MEASUREMENT OF FOOD INTAKE

At the heart of much research in applied human nutrition and nutritional anthropology is the matter of food intake. Food is, after all, the carrier for most nutrients consumed by humans, and the specification of nutrient intake requires quantitative data on food consumption. Even when researchers' interests are on patterns of food consumption, rather than on nutrients per se, some type of behavioural record of consumption, beyond an informal respondent's summary of "typical food intake," is a methodological necessity.

Given its central place in nutrition, one would expect to find a long tradition of methodological research on food intake measurement within nutritional science. Indeed, the literature is massive (Marr, 1971; Todd, Hudes, and Calloway, 1984), and decades of research, albeit of varying quality, have provided a quantity of information about the problems of dietary intake measurement. In recent years methodological research on food intake has become increasingly sophisticated (Beaton et al., 1979); our understanding of measurement problems and of sources of error and variation continues to grow. The following simple generalizations are usually accepted as axioms of food-intake measurement:

1. Different measurement methods yield different results.
2. The disparity among methods is greater for some nutrients than for others.
3. The selection of the most appropriate method depends on the specific questions being investigated.

This third point is particularly significant for nutritional anthropology. Thirty-five years ago Hoobler (1951) wrote: "At present there is no all-purpose best method for determining nutrient intake of individuals. . . . The method chosen will depend on the need or purpose of the study." Twenty years later, Marr (1971) agreed, adding that, "Indeed, as more attempts are made to validate the different methods in current use for measuring the dietary intake of 'free-living' individuals it becomes clear that absolute reproducibility and validity are not achieved by any of them. It is essential to know how valid are the different dietary techniques, and whether they are *valid enough for their purpose*" (my italics).

There is perhaps less clarity on the issue of the "appropriate method" in relation to the population being studied. Thus Marr (1971) suggests, on the one hand, that "in terms of validity of the measurement alone the precise weighing technique may be taken as the 'gold standard'." On the other hand, she makes the important point that "any loss of validity [using another method] can then be set against the increased usefulness of data derived from samples of the population living their normal lives for whom the precise weighing technique is not a practical method" (p. 124).

In the literature on food-intake measurement there is considerable ambivalence about whether it is legitimate to base the choice of measurement in part on the population being studied and not only on the kinds of questions being asked. In this context,

ethnographic data can be useful in providing information on the cultural factors that could be expected to facilitate or distort the validity of different methods of dietary data collection.

Anthropological methods do not provide a panacea for the problems of food-intake measurement. However, ethnographic research can improve data quality with respect to two primary aspects of intake measurement:

1. The selection of a method for food-intake measurement most suited to the particular population studied.
2. The selection of a sampling frame to generate a representative dietary record for an individual or household.

SELECTING AN APPROPRIATE METHOD

As reiterated repeatedly in the nutritional science literature, the degree of precision in the specification of nutrient intake outside of a closed metabolic unit depends on the accuracy of the food-intake record. The extent to which a highly accurate record, based on observation and weighing, can be obtained for a single day will vary from one cultural setting to another. The extent to which a representative sample of intake over a period of time can be obtained through weighing is also highly dependent on cultural factors, which are not necessarily isomorphic with the factors that affect precision for a single day.

Ideally, the selection of a method for obtaining food-intake data should be based on a series of criteria, including information on the potential sources of error and problems that may occur because of socio-cultural characteristics. Such information is even more critical for the development of specific data-collection protocols, since many of the potential problems can be circumvented with effective interview modes. Among the major types of useful information are:

1. Cultural-linguistic features that define "food" and "drink" and distinguish categories of edibles. Such information is vital for methods that depend on verbal elicitation of recalled consumption. For example, Fleuret found that several dietary studies in East Africa failed to report consumption of wild greens and fruit, not because the people were not eating these foods but because they were not considered "food" in the local cultural vernacular and hence were not mentioned in response to questions about "food consumption" (Fleuret, 1979).
2. Cultural perceptions of specific foods in terms of their social acceptability, prestige value, flavour, quality, and other characteristics that consciously and unconsciously affect people's use of these foods and their ability or willingness to report their use.
3. Description of the environments in which eating takes place, in relation to different categories of individuals and different types of foods. For example, home-based observation will not accurately reflect the intake of individuals who consume significant amounts of food as "snacks" or "casual eating" away from home.

SELECTING A SAMPLING FRAME

An important development in more recent literature on food-intake methodology is the focus on "representativeness" as a problem independent of "precision." The

significance of the issue was recognized many years ago by Burke, whose "diet history" method was intended to provide quantitative data on "usual dietary intake" (Burke, 1947). Unfortunately, some of the studies that aimed at assessing the validity of the method by comparing it with other methods used an inappropriate time-frame (or "sampling scheme") for the comparative method, thereby obscuring the critical matter of "representativeness."

Newer methodological studies of food intake have approached the issue as one of the relationship between intra-individual and inter-individual variation, using the coefficient of variation as a statistical tool to assess the question of the number of intake records required to achieve a reasonable level of intra-individual stability (Beaton et al., 1979).

Essentially the problem is a sampling issue. As described by Jerome and Pelto: "In its repetitive nature, eating resembles a number of other types of patterned human behavior. . . . [The methodological problem] is to generate a valid corpus of data, and the first task is to develop a system for obtaining a representative sample of the behavior. That is, from the stream of ongoing behavior one must select sampling points that represent the full stream." The authors suggest that the significant temporal variables can be placed into two categories, "factors that directly affect food availability, including the effects of seasons, marketing practices and cash flow," and "factors that indirectly affect food availability through cultural regulation, including the effects of work schedules and the calendar of sacred and secular ceremonials" (Jerome and Pelto, 1981).

Ethnographic data provide vital information about social and cultural sources of temporal variability in food intake. While these sources are not the only components to consider in setting up a "sampling frame" for food-intake measurement, it is very important to have such data during the critical period when the research design is "fitted to" the local research scene.

LINKING MACRO-LEVEL, INTERMEDIATE, AND MICRO-LEVEL DATA

As noted above, a primary methodological challenge for research on the interface between social and biological data is to develop socio-cultural measures that focus on the same units of analysis as the nutritional and other biological data. At the same time, it is imperative to recognize that events and conditions at the micro-level of individuals and households, and the intermediate level of communities, are strongly affected by economic, political, and other forces at the macro-level of regional, national, and international economic and political processes.

Unfortunately, much research on food and nutrition, whether carried out by anthropologists, nutritionists, economists, or other types of researchers, has focused *either* on large-scale, macro-level analysis *or* on local-level study. While some micro-level data implicitly capture macro-level features by reflecting their impact on individuals and families, there has been little effort to systematically link these levels of analysis in previous research.

New methodological and theoretical strategies are required to develop operational macro-level/micro-level linkages. In the original report of the workshop upon which much of this volume is based, some directions for accomplishing these objectives were outlined (Pelto, 1981):

1. Unpacking or disaggregating (and aggregating) regional and national statistics on food production and distribution, along with data on economic expenditures and census data on populations, in order to examine the statistical specifics as they apply to given subpopulations.
2. Descriptive exploration of political and economic organizational structures that reach from national levels to intermediate and local levels. For example, new methods must be devised to *quantify* the differential impacts of commercial food merchandising and food production in different regions, reaching down to community levels. In a similar vein, national food production programmes typically have areas of concentration and areas of low intensity, apparently because of differential administrative structures, differential monetary support, and variations in political structures.
3. Certain key macro-level influences may be operationalized systematically at local community levels through study of local distributors, political brokers, and fiscal agents. These features have sometimes been descriptively included in food-use studies but are seldom systematically (and quantitatively) linked to local-level *differentials* in food production and availability.
4. Nested sampling techniques should be developed, in which local community samples, e.g. food-use interviews, are statistically relatable to regional surveys. Thus, there is a need to develop methodologies in which statistical analyses of community populations, such as the percentage of children suffering from specified levels of malnutrition, can be directly tied to regional survey data, with accompanying assessment of comparable background variables.

CONCLUSIONS

In any field, the emergence of new research questions and modes of investigation generated by changing theoretical perspectives poses serious methodological challenges. Problems of research design and data collection are likely to be particularly acute during the initial phases of interdisciplinary growth, as is presently occurring in nutrition.

In their efforts to solve methodological problems, researchers will continually be confronted with the social and financial constraints within which actual field research takes place. Research has to be sensitive to context and flexible in relation to the needs of programme development, implementation, and evaluation. None the less, it is generally possible to be rigorous despite the conditions and constraints of particular field conditions. Field research in nutritional anthropology is, in part, the "science of the possible," seeking for the most rigorous and credible data systems within the context of responsibility for research directed to solving problems of malnutrition. It is to that enterprise that the papers in this volume are directed.

REFERENCES

Beaton, G. H., J. Milner, P. Corey, et al. 1979. Sources of Variance in 24-hour Dietary Recall Data: Implications for Nutrition Study Design and Interpretation. *Am. J. Clin. Nutr.*, 24: 304–310.

Burke, B. S. 1947. The Diet History as a Tool in Research. *J. American Dietetic Assoc.*, 23: 1014–1046.
Ellen, R. F., ed. 1984. *Ethnographic Research: A Guide to General Conduct.* Academic Press, New York.
Fleuret, A. 1979. Methods for Evaluation of the Role of Fruits and Wild Greens in Shambaa Diet: A Case Study. *Medical Anthropology*, 3: 249–263.
Hoobler, I. M. 1951. Dietary Study Methods. *J. American Diet. Assoc.*, 27: 557.
Jerome, N. W., and G. H. Pelto. 1981. Integrating Ethnographic Research with Nutrition Studies. *Feder. Proceed.*, 40: 2601–2605.
Marr, J. W. 1971. Individual Dietary Surveys: Purposes and Methods. *World Rev. of Nutr. and Dietetics*, 11: 105–164.
Pelto, G. H. 1981. Methodological Issues in Nutritional Anthropology: Report of a Workshop. *Food and Nutrition Bulletin*, 3(4): 21–28.
Pelto, P. J., and G. H. Pelto. 1978. *Anthropological Research: The Structure of Inquiry.* Cambridge University Press, New York.
Scrimshaw, S. C., and G. H. Pelto. 1977. Family Composition and Structure in Relation to Nutrition and Health Programs. In: R. E. Klein et al., eds., *Evaluating the Impact of Nutrition and Health Programs.* Plenum Press, New York.
Todd, K., M. Hudes, and D. H. Calloway. 1984. Food Intake Measurement: Problems and Approaches. *Am. J. Clin. Nutr.*, 37: 139–146.

Contents

1
Methods for Studying Determinants of Food Intake

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INTRODUCTION

This chapter will review how anthropologists study socio-cultural factors that influence food intake. There are many different kinds of studies of food intake, including ethnographic, ecologic, economic, biocultural, nutritional, and ethnoscientific approaches. These various kinds of anthropological studies use a wide variety of methods, analyse different aspects of culture and gather different kinds of data.

Ethnographic studies by social and culture anthropologists have always included to a greater or lesser degree some discussion of the food practices of communities. Data on the importance of the food quest in the cultural life-style of a group, the meaning of food for structuring and "realizing" social relations, and the impact of food habits on nutrient intake and health are usually collected by a combination of naturalistic (participant) observations and selective interviews.

More specialized anthropological studies have utilized a wide variety of techniques to collect, analyse, and interpret selected aspects of dietary and nutritional data. Symbolic and cognitive (ethnoscientific) studies, for example, have analysed the internal and external structure of diet in relation to the rest of a culture. The former examine the logical relationships among aspects of a culture; the latter investigate cultural aspects in terms provided by the people themselves. Either approach provides analyses that enable anthropologists to compare the food dimension of a culture to other cultural domains. Common principles for thinking about and behaving in relation to nutrition and health may be arrived at by comparing and contrasting terminologies and activities in both the food and health domains. Such analyses of the food domain of culture may be compared across cultures to illustrate contrasting attitudes toward food, culinary practices, diets, and nutritional well-being.

Ecologic and economic studies within anthropology have considered the relationship of food choices to the foods available in particular environments. Biocultural anthropologists have tried to show how cultural habits, including food beliefs and practices, affect the biological well-being of human populations or social groups in the short run and the evolution of human biological populations in the long run. Converse-

ly, biocultural anthropologists have also attempted to determine the relationships between biological aspects of particular environments or genetic characteristics of particular populations and their cultural beliefs and practices, in order to show interactions and interrelationships between biology and culture over both the short and the long term.

Nutritional anthropologists generally try to explicate the relative importance of these various approaches and factors. Thus, while anthropologists tend to explicate the folkloric factors that contribute to the particular patterns of food acceptance, food preference, and dietary constructions, they are also well aware that *material* factors play a large part in the selection of foods.

Ecological factors to a large extent determine which foods are available within a culture. Thus, for example, traditional Eskimo societies "choose" a diet consisting largely of fat and meat protein out of ecological necessity, not just for reasons of taste, social symbolism, and similar factors, which are part of their total food culture. Similarly, most low-income people might choose to eat foods other than those that they "select" under their existing economic conditions. Nevertheless, interacting with and beyond these material factors, people tend to select foods for a variety of sensory, cultural, social, symbolic, and health reasons; and anthropologists and other social scientists have developed concepts and methods to study systematically these food habits and their nutritional implications.

This chapter, organized according to categories used by nutritionists, will identify the kinds of information and methods of data collection and analysis relevant to asking and answering questions on human food selection for cross-cultural and intra-cultural comparisons. Methodological sources include studies by anthropologists, nutritionists, and social scientists. The chapter begins with a general overview on human food selection, and then examines ecological and economic factors influencing food choice. The chapter also describes how a better understanding of socio-cultural factors in food selection can contribute to the modelling of, and solutions to, nutrition problems. In conclusion, we will consider some of the problems in moving from individual levels to household and cultural levels of analysis.

OVERVIEW OF FACTORS IN HUMAN FOOD SELECTION

Among the initial issues to keep in mind in any study of socio-cultural factors affecting food intake are the interactions between biological and cultural processes in human food selection. Humans accept food items as "edible" or reject them as "inedible" and establish preferences among edible items on the basis of a number of sensory and cultural characteristics. The term "sensory" as used here incorporates psychophysical, cognitive, and affective factors (usually analysed separately by psychologists) that enter into taste discriminations and preferences in food selections. The term "cultural" includes symbolic, social, and economic factors which, in interaction with "sensory" data and preferences, shape food patterns and influence the selection of foods. How different peoples translate biological information about foods (safe versus dangerous; nutritious versus empty calories) into cultural likes and dislikes is a topic that has been treated from almost all anthropological perspectives. So has the related topic of the formation and persistence of a cultural cuisine – a term used to describe