

COOKING TECHNOLOGY

TRANSFORMATIONS IN CULINARY PRACTICE
IN MEXICO AND LATIN AMERICA

EDITED BY STEFFAN IGOR AYORA-DIAZ

B L O O M S B U R Y

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Contents

Acknowledgments viii

Introduction—The meanings of cooking and the kitchen:
Negotiating techniques and technologies 1
Steffan Igor Ayora-Díaz

PART ONE Refiguring the past, rethinking the present 13

- 1** Grinding and cooking: An approach to Mayan culinary technology 15

Lilia Fernández-Souza

- 2** Technology and culinary affectivity among the Ch'orti' Maya of Eastern Guatemala 29

Julián López García and Lorenzo Mariano Juárez

- 3** From bitter root to flat bread: Technology, food, and culinary transformations of cassava in the Venezuelan Amazon 41

Hortensia Caballero-Arias

- 4** Technologies and techniques in rural Oaxaca's Zapotec kitchens 55

Claudia Rocío Magaña González

PART TWO Transnational and translocal meanings 69

- 5** The Americanization of Mexican food and change in cooking techniques, technologies, and knowledge 71
Margarita Calleja Pinedo
- 6** Home kitchens: Techniques, technologies, and the transformation of culinary affectivity in Yucatán 85
Steffan Igor Ayora-Díaz
- 7** If you don't use chilies from Oaxaca, is it still *mole negro*? Shifts in traditional practices, techniques, and ingredients among Oaxacan migrants' cuisine 99
Ramona L. Pérez
- 8** Changing cooking styles and challenging cooks in Brazilian kitchens 111
Jane Fajans
- 9** Global dimensions of domestic practices: Kitchen technologies in Cuba 125
Anna Cristina Pertierra

PART THREE Recreating tradition and newness 137

- 10** Recipes for crossing boundaries: Peruvian fusion 139
Raúl Matta
- 11** Forms of Colombian cuisine: Interpretation of traditional culinary knowledge in three cultural settings 153
Juliana Duque Mahecha

- 12** Cooking techniques as markers of identity and authenticity
in Costa Rica's Afro-Caribbean foodways 167

Mona Nikolić

Afterword 181

Carole Counihan

Notes on contributors 185

Index 189

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Introduction

The meanings of cooking
and the kitchen:

Negotiating techniques
and technologies

*Steffan Igor Ayora-Diaz, Universidad
Autónoma de Yucatán*

Various studies have demonstrated the importance of food and its multiple meanings for establishing social and communal ties, as well as its use as a tool to mark the boundaries between groups of people (e.g., Ayora-Diaz 2012; Counihan 2004; Counihan and Kaplan 1998; Heatherington 2001; Holtzman 2009; Montanari 2007). Our main objective in this volume is to examine the types of changes that occur within the space of the kitchen and that often lead to modifications in cooking practices, which then translate into changes in the taste and meanings of food. The following chapters seek to contribute to a more nuanced understanding of contemporary kitchens and cooking in Mexico and Latin America. Latin America in general, and its kitchens in particular, have frequently been represented as technologically backward sites; as places where tradition sits uncontested. More specifically, the dominant focus of attention placed on rural, peasant, and ethnic groups has contributed to perpetuate this image, neglecting the fact that even the most isolated groups are undergoing constant change as a result of their direct or indirect insertion in broader social, economic, political, and cultural processes. Several chapters in this volume seek to challenge this misrepresentation and partial understanding, and show through anthropological, archaeological, and ethno-historical lenses that Latin American

kitchens have been and are places where the meanings of food, techniques, and technologies, as well as associated aesthetic values, are endlessly negotiated. The book critically examines the places and times when “traditional” and “modern” culinary values are maintained or negotiated, from the valorization of traditional ingredients, techniques, and technologies—and the nostalgia they sometimes either trigger or to which they respond—to the acceptance and promotion of fusion foods in different urban environments where consumerist practices influence food re-creation. Here we show that in Latin American kitchens, “tradition” and “modernity” are continuously re-signified.

Contributors to this volume are either sociocultural anthropologists or scholars working closely with anthropological texts and issues. To date, there has been little appetite for the study of the kitchen and of cooking: indeed, when some anthropologists look at kitchens, they see a marginal space that plays host to everyday drudgery, and where the actions performed within are restricted to creating something edible from outdoor human action (running the whole gamut from hunting, gathering, horticulture, and agriculture to supermarket shopping). Anthropologists have tended to look at the symbolic significance of the food prepared within that space (again, in the public space), the meaning of the kitchen as an intimate space of the house for family members and their close friends, or to the symbolic meaning of ceremonies and rituals where special, extraordinary meals, are consumed. For example, Mary Douglas (1975) paid attention to the symbolic organization of family meals; Claude Lévi-Strauss (1968) argued for the importance of the culinary “triangle”; Arjun Appadurai (1981) for the political meaning of food in domestic and ritual spaces; and Paul Stoller (1989) described how women could use the taste of food in domestic/inter-ethnic political contexts. Yet, in these examples there is very little attention paid to the technology and the organization of practices required to produce everyday meals.

Examples from Latin America reflect the same bias. Traditional anthropological accounts have privileged the study of rural, peasant, and impoverished urban people. Hence the focus has been, for example, on the social organization of the lowland Maya of the Yucatán peninsula and of villages in the mountains of Chiapas (Redfield 1940; Nash 1970; even when they describe the house, they only list the cooking implements but do not describe how they are used. See, for example, Redfield 1946: 12–16); on the domestic economy of guinea pig (*cuy*) consumption in the Andes, where although recognizing its economic and symbolic significance, the author pays little attention to its preparation (e.g., Morales 1995); on the gendered organization of cooking during the preparation of ceremonial foods in central Mexico (Christie 2011); and on the economic role of women in Peruvian markets (Babb 1989). These publications examine the “traditional” structure of villages or the effects of capitalism and gender politics on the social production and

consumption of food. Without denying their importance, they again pay scant attention to the techniques and technologies required for the preparation of food, and to the processes that have made available new ingredients that vie to displace “traditional” ones. Other studies privilege the description of antiquated technologies to augment the contrast with the “modern” world and its kitchens, disregarding the fact that often those kitchens, the appliances they use, and their ingredients have either withstood globally-driven processes or changed as a result of them. It is only in the last two decades that anthropologists have started to focus specifically on the preparation and consumption of food as part of larger social, economic, and political processes, as the chapters in this collection do. The authors represented in this volume share the conviction that we also need to examine how technological and technical changes are gradually or rapidly introduced in different contexts and thus challenge the received wisdom that cooks tend to be conservative in Latin American contexts.

The kitchen is an anthropological problem

As is evident through the different chapters of this book, we do not understand the kitchen as an isolated space where practices are shaped independently of the world beyond its walls (or roof, in some cases). On the contrary, we take the kitchen as a privileged space where global, local, and translocal transformations in the circulation of edible and culinary technologies converge and refashion each other through everyday culinary techniques. These transformations contribute to change, in turn, the meanings of the space of the kitchen itself, and its importance within the home, the place, and region, and of the ingredients and technologies that cooks use in them. David Harvey (1990), Roland Robertson (1992) and Arjun Appadurai (1996), among others, have used different concepts to describe and analyze the types and modes in which these supplementary global transformations interact in the context of contemporary globalization.

There is already a growing preoccupation with social, class, and gender politics, as well as with the political economic transformations that foster changes in the kitchens of North Atlantic societies, from the introduction of new appliances to the reorganization of cooking spaces (Shove et al. 2008; Freeman 2004). Within anthropology, the focus on material culture has allowed for an examination of the part played by different domestic appliances in contemporary everyday life, including those that are usually enclosed within kitchen walls (Miller 2002; Pink 2004). Regarding these appliances, there is an ongoing debate about their emancipating effects not only for women, but for all family members (Cowan 1983; Rutherford 2003). In 1948, Sigfried Giedion

(1948) suggested that the transposition of mechanization and its modes of organization from the factories to the home were to have liberating effects for all members of the family. However, most studies seem to suggest that although appliance acquisition and use may have led to many benefits and to some degree of reorganization of domestic work (shaped as well by the increasing need for two-income family budgets), in general they have failed to deliver freedom in or from the kitchen (Rees 2013; Silva 2010). Their effects on the transformation of gender roles are contentious as well (Chabaud-Rychter 1994; Cockburn and Fürst-Dilic 1994; Ormond 1994). While most authors who examine domestic and kitchen transformations do so in North Atlantic societies, it is necessary to acknowledge that Latin American and Caribbean cultures have also been heavily involved in those processes we have named “modernization” and “globalization.” In this sense, this volume seeks to address this imbalance and to spark further questions for research focusing on the kitchen and the house as privileged settings where complex processes intersect. Despite its seemingly profoundly local nature, the kitchen features appliances, tools, instruments, and ingredients that follow global-local paths before they finally enter the “enclosed” space of the home. These processes mobilize cooking instruments, tools, electric and electronic technologies, and appliances, some of which are included in everyday culinary practices, while others are adapted or rejected. As a result of the everyday interaction among these technologies, and that between cooks and their technologies, changes in culinary practices and cooking techniques sometimes emerge, leading to a range of effects on the aesthetics of food and, therefore, on everyday life in general (Ayora-Diaz 2014).

The problem of technology in the anthropology of food

In anthropology there are many definitions of “technology,” and the chapters in this volume reflect that diversity. For example, separating technology from culture, Allen W. Batteau suggests that technology can be given a restrictive meaning excluding tools and instruments, arguing that an encompassing definition is useless (2010: 3). In contrast, proposing a broader definition, Nathaniel Schlanger (2006) questions the common anthropological distinction between techniques as the stuff of “simple” societies, while technologies are found in “modern” societies. He suggests that, in accordance with its original meaning (the study of techniques), we need to embrace the study of techniques and practices as part of our disciplinary understanding of technology. For his part, Mike Michael (2006) underscores the tight relationship between science

and technology calling *technoscientific* those everyday objects that result from the direct application of scientific knowledge. Studying the kitchen demands we broaden our understanding of “technology” to encompass different objects, instruments, devices, appliances, techniques, and other electric and electronic technologies. Everyday practices in the kitchen are often structured by implicit and explicit rules derived from written instruction in manuals of home economics and cookbooks, in addition to those received from oral tradition, highlighting the connections between broader social processes and the extremely localized practices of the kitchen (Bower 1997; Goldstein 2012; Rutherford 2003). In the same way in which a microwave oven, an electric steamer, or the refrigerator can lead us to transform our cooking practices, so does the widespread availability of processed, mass-produced, prepackaged ingredients and meals. Taken together, these items also change our taste and appreciation for everyday foods, as well as their meaning for the society that originally produced and consumed them. Consequently, we need a concept of technology that is broad enough to help us:

- understand cookbooks as technologies of inscription that support our culinary memory (including, increasingly, the use of electronic devices to access recipes online);
- recognize instruments, appliances, and tools as culturally appropriate or inappropriate technologies for food preparation, in each localized society and each kitchen;
- also understand the mediating role played by ingredients as technological objects that engender the relationship between science, technology, ingredients, and cultural norms through the preparation of everyday meals. For example, the use of either industrially processed or organic foodstuffs in the preparation of dinner, or the consumption of prepackaged foods, shows our relations with and our ethics about different technologies. Again, the use of both processed and organic ingredients can be seen as the product of local–global and translocal interactions mediated by commercial, political, and ethical principles that, in turn, mediate their forms of localized adoption.

This volume discusses culinary transformations in relation to the arrival of new appliances and technologies, the availability of different ingredients and processed meals, the spread of *high* culinary values through restaurants that specialize in hautes or nouveaux cuisines, the pervasive broadcast of TV gourmet programs, and the growing access to cookbooks specialized in a broad range of national, regional, and so-called “international” cookery styles. Consequently, we include tools, instruments, cookbooks and cooks’ magazines,

ingredients, electric appliances, and electronic media, which lead, through their interaction, to different modes of culinary transformation. Given that contemporary global society, in both urban and rural areas, is marked by continuous change, we find that in some cases these technological appropriations and developments may lead to the radical transformation of the food of a society. In other cases they lead to a nostalgic understanding of the past, which is expressed in the reclamation of traditional techniques, technologies, and tastes. In most cases, however, whether transforming their food into radically new forms, or through attempts to recover and affirm a culinary or gastronomic tradition, subjects must engage in complex negotiations.

As contributors demonstrate throughout the book, different actors may intervene in these processes, from state institutions to food and agribusiness corporations, printed, electronic, online and televised media, cookbook writers, and celebrity chefs who appear on TV, radio and newspapers. Moreover, restaurants, the manufacturers and vendors of domestic appliances, cookery schools, seminars and workshops, and even following the lead of urban eateries and street food vendors, are turned into catalysts for change in the kitchen and the home. Each has a mediating part to play in the different cases presented here, so that even communities portrayed as “isolated” are included in global processes in which groups of tourists, driven by nostalgia and searching for authenticity, may demand a “return” to old techniques and taste.

The structure of this book

This book is divided into three sections within which the chapters explore, from different approaches, the diversity of meanings that the kitchen and the technologies and culinary practices performed therein yield over time. Each chapter focuses on specific problems in different parts of Mexico, the United States, and Latin America, and although some themes are present in every section, the chapters are ordered by their primary preoccupation. Part One, “Refiguring the past, rethinking the present,” includes four chapters in which the relationship with the past, real and imagined, is the strongest component of the argument. Thus, in Chapter 1, Lilia Fernández-Souza examines, from a predominantly ethno-archaeological perspective, the ways in which the study of the space of the kitchen has been approached among the Maya, paying particular attention to the use of milling stones (*metates*) and mortars (*molcajetes*) and the use of underground ovens (*pibs*). She attempts to establish whether there are elements of continuity between the Maya of the past and those of the present. In Chapter 2, Julian López García and Lorenzo Mariano Juárez critically examine the top-down attempts to transform culinary technologies among the Ch’orti’ of Guatemala. They focus on the everyday

use of milling stones (*metates*) and clay griddles (*comales*), arguing that development agencies have found strong resistance to proposed changes to cooking appliances, not because of some traditionally conservative rejection of new technologies, but because the promoters of development have failed to understand the *meaning* of long-established tools, and the affects they mobilize in everyday life. In Chapter 3, Hortensia Caballero-Arias examines the cassava production process undertaken by Venezuelan Yanomami, demonstrating how this root has become deeply ingrained in the imagination of “primitive” indigenous societies, thus inhibiting its incorporation into urban “modern” diets. However, as she also notes, the recuperation of “traditional” ingredients as a strategy to revalorize national cuisines is gradually changing urban consumers’ relationship to this root. Finally, in Chapter 4 Claudia Rocío Magaña González describes the negotiations required to explain the fusion of “modern” and “traditional” technologies in the preparation of Zapotec, Istmeño cuisine in Oaxaca. She shows how even in “traditional” settings, cooks are willing to introduce changes in the use of cooking instruments and appliances while maintaining their affective relationship to “traditional” foods.

The five chapters included in Part Two, “Transnational and translocal meanings,” place the emphasis on global-local and translocal connections resulting from the movement of people, of the border between nations, and of culinary commodities, as they are expressed in the space of the kitchen and mediated by the use of technologies and culinary techniques. In Chapter 5, Margarita Calleja Pinedo examines how, in the southern United States, changes over time to the Mexican dish *carne con chile* resulted in one of the mainstays of contemporary Tex-Mex food, *chili con carne*. Her chapter examines the role played by the transition from oral to written recipes and how emerging businesses specialized in the industrial packaging of ingredients and meals. She shows how the understanding of this food changed with the growing appropriation of this originally Mexican recipe by Anglophone society in the US. In Chapter 6, Steffan Igor Ayora-Díaz examines the contemporary transformations of urban life in Yucatán, arguing that converging transformations in the foodscape, the space of kitchens, the diversity of cookbooks, the arrival of new cooking appliances and ingredients have led to changes in culinary techniques, in the taste of Yucatecan food, and in the meaning and local affective attachments to regional food. In Chapter 7, Ramona L. Pérez examines the culinary techniques and technologies employed by migrants from the state of Oaxaca, in southern Mexico, who now live in the south of the US. She discusses the affective relationship of people from Oaxaca with the food of their region and the ways in which they signify and re-signify through nostalgia and “authenticity” foods they consider traditional and meaningful—clearly illustrated by the preparation of *mole negro*. In Chapter 8, Jane Fajans takes us to urban Brazil, a context where middle- and upper-class families

have customarily employed maids to cook their meals, but where in recent times the media, celebrity chefs, and other thematic recuperations of “Brazilian” food have encouraged members of well-to-do families to take upon cooking national dishes. In this case, hautes and fusion cuisines are fostering change in how Brazilians adopt national dishes into their everyday culinary and gastronomic practices. To conclude this section, in Chapter 9, Anna Cristina Pertierra examines the transformative process of Cuban kitchens and the appliances that furnish them from the eve of the Cuban revolution to the post-Soviet era, passing through the Soviet control of the island’s market. As she argues, the kitchen becomes the locus of negotiation both for political meanings and for the construction of a national identity, making it the ideal space for state intervention and transformation.

The three chapters encompassed in Part Three, “Recreating tradition and newness,” examine contemporary transformations derived from the strategic use of nostalgia, tourism development, and haute cuisine in the rediscovery and valorization of ethnic and national cuisines. In these chapters we can see how different technologies are developed, appropriated, or adapted into the space of kitchens to produce results that respond to a global culinary forces. Thus, in Chapter 10 Raúl Matta looks upon the part played by Peruvian celebrity chefs who following contrasting approaches seek to incorporate guinea pigs (*cuy*) into upscale menus. Normally associated with the imagination of indigenous diets and shunned by urbanites, renowned chefs apply new culinary technologies to transform it into a special dish, or modify its presentation seeking to enhance its desirability on the part of their customers. He shows how their efforts gradually induce a greater acceptance for uncommon ingredients in the non-indigenous, urban diet. In Chapter 11, Juliana Duque-Mahecha looks at Colombian foods in three different settings: fine dining restaurants, comfort-food establishments, and food stalls in popular markets. She shows how these three different backdrops converge in the re-signification and revalorization of “traditional” Colombian foods, and contribute to the creation and establishment of a shared image of what constitutes the taste and the components of an “authentic” national cuisine defined and valued as “cultural heritage.” Finally, in Chapter 12, Mona Nikolić focuses on an Afro-Caribbean community in Costa Rica. She discusses and illustrates how contemporary changes had led the local population to abandon cooking techniques and technologies, displacing traditional meals from their menus and replacing them with commercially processed ingredients. However, recent efforts to market the village in question as a tourism destination have created a context that favors the re-creation of authenticity, and local actors are today engaged in the recuperation of those dishes and the “proper” techniques and technologies required for their production. The tourist gaze thus plays an important part in the re-signification of “authentic”

local meals. The book concludes with an Afterword by Carole Counihan. As she suggests, this volume opens venues for further research:

- 1 the conceptual and practical convergence of taste, place, technology and access;
- 2 the flexibility in the adoption and change in culinary practices according to context;
- 3 the different ways in which technology shapes, and is shaped by, different forms of identity;
- 4 the continuous negotiation between the adoption and continuation of “traditional” and “modern” technologies. Culinary techniques and technologies clearly require greater attention in future studies.

The chapters collected in this book offer different and complex views on the meanings and the relationships between techniques, technologies, and ingredients that coexist in the space of “traditional” and “modern” kitchens. Both meanings and relationships need to be understood as mediated and negotiated by a diversity of social actors, suggesting that they change in situations of structural inequality and amidst global, global–local, and trans–local processes expressed in the complex production, circulation, and consumption of edible commodities and culinary technologies. Hence, the kitchen in Latin America and Mexico is not a stagnant and closed space, but rather a site where broader and more complex processes converge, transform everyday practices and meanings, and provide a ground for local, regional, ethnic, national, and cosmopolitan affiliations. Our hope is that this volume will trigger further questions in different places of Mexico and Latin America, and bring recognition to the multiple meanings that converge in the kitchen and the meals produced therein.

References

- Appadurai, A. (1981), “Gastro–Politics in Hindu South Asia.” *American Ethnologist* 8(3):494–511.
- Appadurai, A. (1996), *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.
- Ayora-Díaz, S. I. (2012) *Foodscapes, Foodfields and Identities in Yucatán*. Amsterdam: CEDLA / New York: Berghahn.
- Ayora-Díaz, S. I. (2014), “Estética y tecnología en la cocina meridana.” Pp. 317–341 in S. I. Ayora-Díaz and G. Vargas Cetina (eds), *Estética y poder en la ciencia y tecnología: Acercamientos multidisciplinares*. Mérida: UADY.
- Babb, F. (1998 [1989]), *Between Field and Cooking Pot: The Political Economy of Market Women In Peru*. Austin: University of Texas Press.

- Batteau, A. W. (2010), *Culture and Technology*. Long Grove: Waveland Press.
- Bower, A. L. (ed.) (1997), *Recipes for Reading: Community Cookbooks, Stories, Histories*. Amherst: University of Massachusetts Press.
- Chabaud-Rychter, D. (1994), "Women Users in the Design Process of a Food Robot: Innovation in a French Domestic Appliance Company." Pp. 77–93 in C. Cockburn and R. Fürst-Dilic (eds), *Bringing Technology Home: Gender and Technology in a Changing Europe*. Buckingham: Open University Press.
- Christie, M. E. (2011), *Kitchenspace: Fiestas and Everyday Life in Central Mexico*. Austin: University of Texas Press.
- Cockburn, C. and Fürst-Dilic, R. (1994), "Introduction: Looking for the Gender/Technology Relation." Pp. 1–21 in C. Cockburn and R. Fürst-Dilic (eds), *Bringing Technology Home: Gender and Technology in a Changing Europe*. Buckingham: Open University Press.
- Counihan, C. (2004) *Around the Tuscan Table: Food, Family and Gender in Twentieth Century Florence*. New York: Routledge.
- Counihan, C. and Kaplan, S. L. (eds) (1998), *Food and Gender*. London: Routledge.
- Cowan, R. S. (1983), *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. New York: Basic Books.
- Douglas, M. (1997 [1975]), "Deciphering a Meal." Pp. 36–54 in C. Counihan and P. Van Esterick (eds), *Food and Culture: A Reader*. London: Routledge.
- Freeman, J. (2004), *The Making of the Modern Kitchen: A Cultural History*. Oxford: Berg.
- Giedion, S. (2013 [1948]) *Mechanization Takes Command. A Contribution to Anonymous History*. Minneapolis: University of Minnesota Press.
- Goldstein, C. M. (2012) *Creating Consumers: Home Economics in Twentieth-Century America*. Chapel Hill: University of North Carolina Press.
- Harvey, D. (1990), *The Condition of Postmodernity. An Enquiry into the Origins of Cultural Change*. Oxford, UK: Blackwell.
- Heatherington, T. (2001), "In the Rustic Kitchen: Real Talk and Reciprocity." *Ethnology* 40:309–345.
- Holtzman, J. (2009) *Uncertain Tastes: Memory, Ambivalence and the Politics of Eating in Samburu, Northern Kenya*. Berkeley: University of California Press.
- Lévi-Strauss, C. (1989 [1968]), "The Culinary Triangle." Pp. 28–35 in C. Counihan and P. Van Esterick (eds), *Food and Culture: A Reader*. London: Routledge.
- Michael, M. (2006), *Technoscience and Everyday Life*. London: Open University Press.
- Miller, D. (2002), *Home Possessions: Material Culture Behind Closed Doors*. Oxford, UK: Berg.
- Montanari, M. (2007) *Il cibo come cultura*. Bari: Laterza.
- Morales, E. (1995), *The Guinea Pig: Healing, Food, and Ritual in the Andes*. Tucson: University of Arizona Press.
- Nash, J. C. (1970), *In the Eyes of the Ancestors: Belief and Behavior in a Maya Community*. New Haven, CT: Yale University Press.
- Ormond, S. (1994) "'Let's Nuke Dinner': Discursive Practices of Gender in the Creation of a New Cooking Process." Pp. 42–58 in C. Cockburn and R. Fürst-Dilic (eds), *Bringing Technology Home: Gender and Technology in a Changing Europe*. Buckingham: Open University Press.

- Pink, S. (2004), *Home Truths: Gender, Domestic Objects and Everyday Life*. Oxford: Berg.
- Redfield, R. (1940), *The Folk Culture of Yucatán*. Chicago: University of Chicago Press.
- Redfield, R. (1946) "Los mayas actuales de la península yucatanense." Pp. 7–30 in C. Torres Novelo and C. A. Echánove Trujillo (eds), *Enciclopedia Yucatanense, Vol VI: Yucatán actual*. Mexico City: Gobierno de Yucatán.
- Rees, J. (2013), *Refrigeration Nation: A History of Ice, Appliances, and Enterprise in America*. Baltimore: Johns Hopkins University Press.
- Robertson, R. (1992), *Globalization: Social Theory and Global Culture*. London: Sage Publications.
- Rutherford, J. W. (2003), *Selling Mrs. Consumer: Christine Frederick and the Rise of Household Efficiency*. Athens, GA: University of Georgia Press.
- Schlanger, N. (2006), "Introduction: Technological Commitments: Marcel Mauss and the Study of Techniques in the French Social Sciences." Pp. 1–29 in N. Schlanger (ed.), *Marcel Mauss: Techniques, Technology and Civilization*. New York: Berghahn.
- Shove, E., Watson, M., Hand, M., and Ingram, J. (2008), *The Design of Everyday Life*. Oxford, UK: Berg.
- Silva, E. B. (2010), *Technology, Culture, Family: Influences on Home Life*. New York: Palgrave MacMillan.
- Stoller, P. (1989), *The Taste of Ethnographic Things: The Senses in Anthropology*. Philadelphia: University of Pennsylvania Press.

PART ONE

Refiguring the past, rethinking the present

1

Grinding and cooking: An approach to Mayan culinary technology

*Lilia Fernández-Souza, Universidad
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Introduction: approaches to Mayan food

Food is one of the most essential parts of daily human life. Thinking about what to eat, how to prepare different sorts of ingredients and dishes, who can eat what kind of food and on what occasions is it to be served are just some of the many choices that a social group, a family, or an individual must make every day. A number of scholars have discussed the role that food and culinary practices play with reference to identity, sociability, prestige, and sense of community (Ayora-Díaz 2012; Juárez López 2008: 19; Scholliers and Claflin 2012: 1), including how culinary traditions stir feelings of nostalgia and nationalism (Swislocki 2009: 2). Coe has argued (1994: 2) that world studies concerning cooking have contributed to our knowledge of ingredients and their use. The means to process them is also a central issue, and without doubt culinary technology plays a central role. In this chapter, I address Yucatecan Maya culinary technology through a diachronic, multidisciplinary approach that reviews archaeological, historic, and ethno-archaeological data. I emphasize two forms of culinary technology in domestic contexts—grinding and cooking—by analyzing two interrelated dimensions: First, by looking at the different forms of grinding stones (*metates* and *molcajetes*) and cooking tools (pit ovens, hearths) as the result of a wide variety of culinary processes,

each with different contextual meanings; and second, by examining the symbolic component of culinary technology. Most of the information I discuss here is the product of ethno-archeological research undertaken during 2012 and 2013 in the village of San Antonio Sihó, Yucatán.

Yucatán, located in the east of the Gulf of Mexico, is far from being homogeneous. Today, *Lo Yucateco* encompasses a mixture of Maya and Spanish populations although its population has been augmented over time with the arrival of groups from around the world, principally from other Mexican regions, but also from Africa, the Middle East (mainly Lebanon), and China and Korea (Ayora-Díaz and Vargas-Cetina 2010). As a result, cooking practices reveal a diversity of recipes, flavors, and meanings that vary according to where they are produced, in regional subdivisions, on the coasts, or in inland cities and small towns.

In Yucatán, speakers of the Maya language inhabit (although not exclusively) rural communities, and even when it is relatively difficult to define what Maya is (which is not the purpose of this chapter), it is possible to argue that language is one of the cultural traits that have remained, with varying degrees of change, from pre-Columbian times. Mayan food has been a topic of interest since the very beginning of the Spanish colonization. The *Relaciones Historico Geográficas de la Gobernación de Yucatán* (Garza et al. 2008) includes descriptions of the first *encomenderos* and reveals the wide variety of available plants and animals that were consumed by the natives, providing details about specific meals and beverages. *Relación de las Cosas de Yucatán*, written by Bishop Diego de Landa in the sixteenth century, includes exhaustive descriptions of ingredients and forms of cooking. Other historical sources allow us to identify some kitchen implements, gender roles, and the consumption of specific meals during specific occasions (Farris 2012; Landa 1986; Roys 1972). Dictionaries can be revealing too: for example, *El Diccionario Maya Cordemex* (Barrera Vásquez et al. 1995 [1980]) includes invaluable and detailed information about ingredients, their combinations, their preparation, and cooking.

During the twentieth and twenty-first centuries, cultural anthropologists and ethno-archaeologists have paid attention to the use of kitchen space and furniture, cooking technology, and foodstuff for both sacred and profane occasions (Redfield 1977 [1946]; Trujillo 1977). Contemporary information about pre-Columbian Maya food traditions comes from different sources: excavations and archaeological analyses of houses and artifacts (Beaudry-Corbett, Simmons and Tucker 2002; Calvin 2002; Cobos et al. 2002; Fernández-Souza 2010; Götz 2005; Toscano Hernández et al. 2011); zoo-archaeological studies have analyzed the menu, preparation, and consumption of animals (Götz 2010, 2011); paleo-ethnobotanical analyses use pollen, starch, phytolites, carbonized seeds, and rinds to reconstruct a vegetal diet (Matos Llanes

2014; Lentz 1999); chemical techniques such as High-Performance Liquid Chromatography (HPLC) with Thermospray MS, Atmospheric Pressure Chemical Ionization and Gas Chromatography–Mass Spectrometry (Henderson et al. 2007; Hurst 2006) are employed to identify chemical signatures, such as the cacao theobromine; pre-Columbian paintings, carvings, and texts depict pottery on walls and other media (McNeil 2006; García Barrios and Carrasco 2008; Kettunen and Helmke 2010; Stuart 2006; Taube 1989); and bio-archaeological studies, including paleopathology, conduct bone chemistry and other analyses (Tiesler and Cucina 2010; White 1999; White et al. 2001).

Over the course of three millennia, ancient Mesoamerican societies and cultures have experienced numerous transformations but authors such as López Austin (2001) stress the existence of a number of practices that constitute what he names *el núcleo duro*, a cultural hard core, that still can be found in many Mexican regions. Corn-based subsistence and ancestral food technology are two examples of these practices. As I discuss below, centuries-old ways of grinding and cooking are still alive thanks to a very old, rich and delicious tradition.

Maya households and kitchen spaces: Archaeological and ethno-archaeological data

Archaeological research conducted in the Mayan Area shows that pre-Columbian house structures were distributed around an open area or *patio*; many of the daily activities were performed outdoors, and there is evidence of grinding both inside kitchen structures and outside on the *patio*. For example, at Sihó, Yucatán, a Maya site in which the main occupation dates to the Classic Period (600–900/100 AD), grinding stones are distributed in *patios* in front of or at the sides of buildings (Cobos et al. 2002; Fernández Souza 2010; Fernández Souza, Toscano Hernández, and Zimmermann 2014). Spot-test chemical analyses practiced in Group 5D72, one of the housing compounds at this site (Matos 2014), showed elevated concentrations of phosphates, carbohydrates, and proteins in the *patio* area, where grinding stones also were found, suggesting food preparation and/or consumption. Outdoor grinding stones have been found close to both palace-type structures and small houses, suggesting that grinding maize outdoors was a common practice, regardless of a household's socioeconomic status (Fernández Souza 2010; Götz 2005; Matos 2014). In Kabah, Yucatán, another Maya Classic Period site, Toscano et al. (2011) reported a large number of grinding stones located in a low terrace situated next to a Maya palace group that connected through stairways. Chemical spot-tests suggest the existence of outdoor fire pits, indicating that

people were both grinding and cooking in this area; additionally, two rooms located on the terrace are thought to be storage spaces (Fernández Souza, Toscano Hernández, and Zimmermann 2014; Toscano Hernández et al. 2011). Undoubtedly one of the richest archaeological contexts was located in Joya de Cerén, El Salvador. This site was covered by volcanic ash and thus amazingly well preserved. Excavations at Joya de Cerén have shown probable kitchens, such as Structure 11 in *Solar* 1, where archaeologists found a three-stone hearth (Beaudry-Corbett, Simmons and Tucker 2002), and Structure 16, considered to be the kitchen at *Solar* 3, where charcoal and a large river stone also suggested a hearth (Calvin 2002).

During the first half of twentieth century, Redfield (1977 [1946]: 15) stated that the basic implements within the Maya house were distributed around the hearth, which comprised three ordinary stones; next to it, there was a low round wooden table on which to prepare corn *tortillas* and, as part of the kitchen utensils, a metal mill and a grinding stone were placed on a bench to process fine ingredients. Similarly, Trujillo (1977: 142), in her description of the Maya houses of the Yucatecan henequen hacienda plantation Kankirixche, includes the wooden bench for the grinding stone as part of kitchen furniture.

In contemporary Yucatecan rural communities, food preparation may be done both inside and outside, and a family may have a kitchen—a structure separated from the house—with one hearth, plus one additional hearth or two in the *patio*. At San Antonio Sihó, Yucatán, a community located in the vicinity of the archaeological site of Sihó, it is common for families to do some food preparation in the kitchen, but other parts of the process may be done outside, such as cleaning the maize, washing dishes, or plucking edible farmyard birds. As noted above, many kitchens are semi-open constructions with a three-stone hearth and/or a cement hearth (and sometimes a modern gas stove too), with low tables and benches to make *tortillas*, and taller plastic or wooden tables and chairs to eat and prepare foodstuffs. Kitchen implements are stored on shelves or in bags suspended from the roof. Some kitchens are completely open on one of their sides, so that the cooking and eating space is a continuum between the house and *patio*. Grinding is usually done in the kitchen area, but, as discussed above, it can be done either inside or outside, in the *patio* or next to the kitchen, protected by an outward straw roof. Since trees are ubiquitous in Maya *patios*, their shade and coolness may entice the family to prepare dishes and eat outdoors, especially during the hottest days of the Yucatecan spring and summer. Cooking may be done in the three-stone or cement hearths; in addition, the house may include a *pib* or pit oven, a hole that is filled with red-hot stones to roast and bake special dishes. These ovens are dug in the *patio*, in elevated areas usually immune to floods. Homemakers commonly raise domestic animals (mainly hens and turkeys) and grow edible garden plants, such as chilis, tomatoes, herbs, Seville oranges, and other

fruits (mamey, pitahaya, *ciricote*, avocado, or *caimito* or star apple). This practice has been reported since early colonial times (Garza et al. 2008; Landa 1986) and continues to make many rural Maya houses beautiful.

The form and function of grinding stones

The grinding process is very important for Yucatecan Maya cooking; grinding stones were, and still are, useful to mill foodstuffs, but they have also been employed to grind ceramic materials and minerals for pigments (Götz 2005: 72). There are examples of very early grinding stones in pre-Columbian Mesoamerica; for example, Acosta Ochoa et al. (2013: 539) report starch grains of *Zea* sp. (*teosinte*, an ancestor of maize) on a grinding stone found in the cave of Santa Marta, Chiapas, México, dating back to 9800 BP. Götz (2005) points out that the morphology of a grinding or milling stone (named *metate* or *ka'* following Nauatl or Maya words, respectively) is the result of a variety of factors such as chronology, a user's socio-economic status, specific functions, and specific group traditions. Based on his analyses of *metates* from Mayan archaeological sites like Dzibilchaltun, Komchen, Misnay, and Kaua, Götz concludes that important variations result from chronological differences: for example, pre-Classic *metates* are generally bigger and more irregular than those from the Classic period. Yucatecan pre-Classic and Classic *metates* used to be legless rectangular stones deposited directly on the ground or over smaller supporting stones although, at Joya Cerén, archaeologists found a *metate* supported by a wooden holder. Stuart (2014) has proposed an alternative reading for the glyphic name of a site that was previously known as *chi-witz*; he suggests that the name was actually *chi-ka* or *chi-cha*, meaning "maguey milling" or "the place of maguey milling." According to Stuart, the glyph shows a legless *metate* with a stone support. Over time, Yucatecan *metates* became three-legged, just as they are today.

The importance of the *metate* (*ka'*, in Yucatec Maya [Barrera Vázquez et al. 1995: 277]) for daily kitchen activities may be recognized both in archaeological contexts and historical sources. In Kabah's kitchen context, next to the palace complex, Toscano et al. (2011) reported around thirty legless grinding stones; three domestic structures, located at the center of the aforementioned Sihó site, had between five and eight *metates* each (Cobos et al. 2002; Fernández Souza 2010; Matos 2014). Götz (2005: 93) found something similar in Dzibilchaltun, where he reports one to eight grinding stones in each of the households' multiple platforms.

In the sixteenth century Friar Diego de Landa (1986: 43) described the preparation of corn meals and beverages: "Maize is the main nourishment, from which they prepare diverse delicacies and beverages [. . .] and the

Indians soak corn in water and lime the night before, and in the morning it is soft and half-cooked [. . .]; they mill it on stones and give the half-milled [maize] to the workers, walkers and sailors . . .¹ He also describes a frothy beverage prepared with toasted and ground corn and cacao (Landa 1986: 43). Other colonial documents such as the *Relación de Sotuta y Tibilom* and the *Relación de Tabi and Chunhuhub* (Garza et al. 2008: 148, 165) mention that the natives consumed a beverage similar to *poleadas* (also mentioned by Landa 1986: 43), a Spanish word translated in the Motul Dictionary as “*sa’*: *atol*, *que son gachas, puches de masa de maíz*” [*sa’*: *atol*, which is a porridge made of maize dough] (Barrera Vázquez et al. 1995: 707). The *Relación de Hocabá* reports the belief that the natives were healthier in former times because they used to drink a “wine” made out of water, honey, ground maize, and roots (Garza et al. 2008: 134).

During the first half of twentieth century Redfield (1977 [1946]: 15) observed the coexistence of *metates* and metallic mills in the same kitchen. He proposed that metallic mills were in use “even in the most remote hamlets, but most families use the *metate* to prepare fine dishes.” This coexistence is found today in many rural Yucatecan houses; some families own a three legged *ka’*, a metal mill, *and* an electric blender. In villages there are frequently one or more commercial *molino y tortillería*, establishments that mill corn and sell machine-manufactured maize *tortillas*. At Sihó, women can choose to either bring their *nixtamal* (corn soaked in water and lime) to the mill and prepare hand-made *tortillas* at home, or buy them at the *tortillería*. However, *metates* are no longer used to grind corn: today, their use is restricted to grinding *achiote* (*bixa orellana*) and other condiments. Some people have told me that *frijol colado* (strained black beans) was more delicious when it was prepared over a *metate*. One of the ladies at Sihó explained that beans tasted better when they were ground in the stone *ka’*, but more was wasted than when using the blender; the blender allows her to make the most of the food. This feeling of nostalgia can be noted around a variety of cooking processes; for Yucatecan people (regardless of city or small village provenience), hand-made *tortillas* will always be more delicious than the machine-made variety. Nevertheless, for special occasions, such as the Day of the Dead on October 31 and November 1, traditional *mucbil pollos* recipes (large *tamales* baked in *pibs*, ground ovens) require *achiote*, which is still ground in three-legged *metates*.

A number of Maya words related to grinding or milling underline the importance and variety of this action. For example, the *Diccionario Maya* (Barrera Vázquez et al. 1995) includes entries such as *nil* (“*moler bien*” or “milling well”); *tikin huch’* (“*moler en seco*” or “dry milling”), and *tan chukwa’* (“*chocolate molido con masa y especias*,” chocolate ground with corn dough and spices), to mention just a few (Barrera Vázquez et al. 1995: 571, 793, 772).

In addition to the *ka'* there is another presumably ancestral instrument that is quite ubiquitous in Maya Yucatecan kitchens—the mortar or *molcajete*. Some Maya words for mortars are *ch'en tun* (which means “stone mortar,” Barrera Vázquez et al. 1995, 133) and *likil mux*. With their *k'utub* (the mortar's hand), mortars are useful to *k'ut* (to mash chili, mustard, or parsley with a little water or juice, Barrera Vázquez et al. 1995: 424), quite an important procedure for the preparation of chili sauces.

The *Recetario Maya del Estado de Yucatán* (Maldonado Castro 2000) is a cookbook that records a number of southern Yucatán dishes that clearly show the central role of grinding. For example, *óonsikil chaay* ingredients are *chaya* leaves, toasted pumpkin seeds, chili, *achiote*, tomatoes, corn dough, local plums, salt, pepper, and chives. For this dish, pumpkin seeds must be finely milled along with the chili. To prepare *tóoncha' ch'oom xpaapa' ts'uul* (boiled egg-like tacos covered with a pumpkin seed paste and tomato sauce), the cookbook indicates that it is necessary to toast, grind, and strain the seeds to obtain a very fine texture, after which roasted tomato is mixed in with the chili (Maldonado Castro 2000: 49, 51). At Sihó, Doña Rosa, one of our subjects, prepares *ón sikil bu'ul* with care and patience. For this dish—made of a mixture of toasted pumpkin seeds, *achiote*, chili, and maize dough which is mixed into a boiling black bean broth—she grinds nixtamalized corn (at the village's *molino y tortillería* or in her own electric mill) and *achiote* in her *metate*, pumpkin seeds in her iron mill, and chili in a plastic mortar. She also has to strain the mixture of ingredients several times before she pours it into the boiling pot of beans. Chocolate is prepared at home for special occasions, particularly for the Day of the Dead. Like many other Sihó women, Doña Rosa grinds toasted cacao seeds in an iron mill. She grinds the seeds as many times as necessary to obtain a fine and delicate texture to prepare chocolate bars that, whipped with hot water, honey, or sugar, result in a delicious and frothy traditional beverage.

Cooking in diversity: The *pib* and the *k'oben*

The three-stone hearth or *k'oben* is used for everyday cooking. It is defined as “fire stones over which they put the pot” and “the three stones forming a hearth”; similarly, *k'obenil k'ak'* means “the three stones of the Maya hearth, which hold the pot and the griddle (*comal*)” (Barrera Vázquez et al. 1995: 406). As noted above, the Classic Maya site Joya de Cerén presents two features that have been suggested to be *k'obenob*. Redfield (1977 [1946]) wrote that cooking in a pot and roasting over the grill were culinary art's main methods among the Maya, adding the *pib*. Nevertheless, there were, and are, several other ways of cooking. Examining dictionary entries (Barrera Vázquez et al.

1995), one finds the meaning for cooking in the embers (*pem chuk*), to cook without water or broth (*nakmal*), to cook in a pot (*tubchak*), to roast and toast (*op'*), to fry (*tsah*), and to fry without grease (*tikin sah*). All of these procedures can be performed over a three-stone hearth. In addition, the subterranean *pib* oven provides a style of cooking that consists of inserting red-hot stones (thermoliths) into the casserole containing the stew. This latter procedure is known in Yucatecan Maya as *toccel*. A very similar one is known to have existed in Mesoamerica: Clark, Pye and Gosser (2007) mention the presence of thermoliths during the early Formative Period (1900–1000 BC) in the Mazatan region of Chiapas, Mexico, suggesting it is a continuation of culinary practices originating in the distant past.

In contemporary rural Yucatán, in a similar vein to grinding processes, modern and traditional cooking technologies coexist without conflict. At Sihó, Doña Lucy and her mother, Doña Imelda, frequently cook together, although they live in separate houses. There is a gas stove at Doña Imelda's house, but as gas is quite expensive they prefer to use the *k'oben*. They also own a cement hearth and an iron *barbecue*. From an archaeological standpoint, this is a fascinating scenario, because we find at least five millennia of cooking technologies deployed at the same place at the same time. At Don Geydi's home, a broken cement hearth was repaired simply by adding two stones; as a result, this appliance is now half a hearth and half a *k'oben*. On the opposite side of the kitchen, Don Geydi's wife cooks in another *k'oben* by transforming a fan rack into a grill.

More than one cooking technique may be used for the same recipe. For example, to prepare the aforesaid *tóoncha' ch'oom xpaapa' ts'uul*, one must toast pumpkin seeds, boil eggs and *chaya* leaves, and roast tomatoes (Maldonado Castro 2000: 51). Maize beverages and meals are also cooked in a wide variety of ways: *tamales* may be steam-cooked; *tortillas* (*waa*) are made on the *comal* (Mayan *xamach* or griddle); thick *tortillas* (*pem chuk*) are cooked over embers; *mucbilpollos* are baked in the pit oven; *panuchos* and *salbutes* are fried *tortillas* with and without beans, respectively, and topped with poultry, onion, and tomato slices. It is important to stress that as a consequence of this wide range of cooking techniques, a number of core ingredients can be used in different ways to spawn a rich culinary panorama.

In the land of gods: Ritual and gender practices regarding/pertaining to kitchen technology

Maldonado Castro (2000: 24) classifies contemporary Maya food into three groups: