Chapter 1
Food Culture: Concepts, Theories, and Methods

While food has always played a central role in anthropological research, it is only in recent decades that a growing interest in foodways has led anthropologists to redefine and acknowledge the strong bond between human relationships and food (MacClancy 2007, 68). In the quest to understand this relationship—influenced by its biological, political, cultural, and economic components—scholars from various fields have collaborated to create a common narrative in the study of food. Considered an "emerging interdisciplinary field," Gina M. Almerico describes the tenets of food studies as:

> […] not the study of food itself, it is different from more traditional food-related areas of study such as agricultural science, nutrition, culinary arts, and gastronomy in that it deals with more than the simple production, consumption, and aesthetic appreciation of food. It is the study of food and its relationship to the human experience.
>
> (Almerico 2014, 2)

Humans experience food in many ways. They do not merely feed; they eat. Through manners, food habits influenced by culture or environment, technological advancements, political circumstances, or social disparities, humans process food differently from other beings in the animal kingdom. For humans, food is more than mere nourishment (Brown 2013; Kittler and Sucher 2007, 1–2). While food, at its most basic level, provides essential nutrients for human development, this interpretation fails to capture the complex reality shaped by cultural behaviors.

A well-known example of such behavior is the consumption of fugu in Japan. This delicacy, a fish more poisonous than cyanide, must be prepared by a certified chef, as even a small error could prove fatal. Despite the risks, incidents involving fugu poisoning—ranging between thirty and fifty hospitalizations annually according to the Tokyo Bureau of Social Welfare and Public Health—reflect a cultural choice reinforced by the initial biological response of the toxin on the lips (Bloom 2015).

Beyond cultural specificities, food production and consumption, as asserted by Arsim Canolli (2014, 72), have not only shaped present economic and social contexts but have also been integral to human historical and cultural development. Through the selection of foods, menus, and etiquette, we have created a sense of "self" and "other," boundaries that have defined "us."[2]

2. According to Jan Assmann (2013, 134–139), people must be aware of communalities before growing into a society. Thus, belonging to a community is the result of a commu-

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To address this monumental topic, the present chapter first defines the conceptual notion of food culture (Chapter 1.1). This is followed by a discussion of important methodological approaches to food culture in anthropology (Chapter 1.2) and in prehistorical research (Chapter 1.3). While both fields have occasionally intersected, only recently have sustained efforts to strengthen their links (e.g. Twiss 2012; Hastorf 2016) begun to permeate a greater number of research projects. Chapter 1.4 builds on this idea, examining various possibilities for combining anthropological and prehistorical theoretical and methodological approaches in food studies.

1.1 Food Culture

But what is food culture? Before answering this question, it is important to obtain a better understanding of the concept of culture in anthropology. By way of caricature, one can submit that there are as many definitions of culture as there are anthropologists (Harris 1999; Kroeber and Kluckhohn 1952). In its complexity due to its great variability, anthropological culture mainly finds its roots in the values, beliefs, attitudes, and practices shared by the members of a group or community. In Edwards B. Tylor's words:

> Culture or Civilization[3], taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.
>
> (Tylor 1871, 1)

Tylor would eventually, at least during the first half of the 20th century, exert a strong influence on Franz Boas[4] and the cultural history movement. According to him, one of the main aims of ethnographers is to distribute historically and geographically different elements of culture, following a research methodology based on a form of ontological atomism, wherein cultural elements are isolated

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nicative process, the causes and consequences of which lead to the establishment of a collective identity based on a common space of experience, expectations, and actions. In other words, it is rooted in the choices that people make, which enable them to grow together as a group. For an overview of group identity and its formation, see Spears (2011).

3. At the time of the writing of the first edition of his book, the line between culture and civilization was blurred. It was only slightly later, with scholars such as V. Gordon Childe (1925, 1956), that the term civilization received a distinct meaning.

4. According to Stocking (1968b, a), Tylor's definition of culture can be considered anthropologically effete, and it is from Boas's writing that a more concrete anthropological definition of culture emerged. However, one must not neglect the influence that Tylor had upon Boas.

and studied separately (Tylor 1871, 8). As we will see later in this chapter, archaeologists have also been influenced by such an approach, especially for earlier periods where textual sources are rare or nonexistent. If still relevant nowadays, most scholars, as we will see, have reshaped Tylor's definition to accommodate the more flexible and intricate sense of culture.

Among the first of his generation to refer to culture as a pluralistic concept, Boas focused on the plurality of cultures, each with its own constituents, 'genius', and history (Barnard 2002, 208–209; Boas 1898). Therefore, by distinguishing himself from Tylor, who preferred a more holistic approach, Boas can be seen as an advocate against evolutionism and positivism, being more in favor of cultural relativism, diffusionism, and the integration of cultures into their historical context. For Boas, it is by studying the evolution of each culture separately that we can generalize about human sociocultural evolution.

Later on, Boas's students[5] and the following generations continued his work by expressing the unique nature of culture as learned behaviors and, consequently, rejecting the biological basis and considering humans as "culture-bearing animals" (Benedict 1943, 9–10; Kroeber 1917); or by its irreducible aspect, culture as *sui generis*, which means that it can only be referred to other cultural phenomena and cannot be compared to other non-cultural factors (Kroeber 1917). As Boas never gave a definite meaning to culture, many attempted to fill the gap, and, by 1952, Alfred L. Kroeber and Clyde Kluckhohn managed to compile and divide a vast corpus of definitions into six groups: a. descriptive (based on broad definitions, usually influenced by Tylor), b. historical (based on social heritage or tradition), c. normative (based on rules and values), d. psychological (based on learning and habits), e. structural (based on the organization of culture), and f. genetic (based on ideas, symbols, culture as a product). Since then, scholars continue to nourish the debate on culture, and many have suggested new routes to engage such a colossal concept. From Julian Steward (1955), who combined culture and

5. While the Boasians exerted great influence on the North American schools of anthropology, they faced heavy resistance in Europe. In the UK, Alfred Radcliffe-Brown, considered by some the father of structural functionalism, adopted a more Durkheimian methodology and philosophy, aiming for the development of a "natural science of society" (Radcliffe-Brown 1957). He regarded culture as a "vague abstraction" (Radcliffe-Brown 1952, 190), and many British anthropologists followed a similar view. According to Bernard and Spencer (2002, 212): "To some extent this British suspicion of anthropological notions of culture might be related to a broader British anxiety about the humanistic sense of culture." In opposition to Radcliffe-Brown, Leslie White (1949) proposed that anthropology must be seen as a science of culture, wherein culture is a fundamental part of the social structure. Another form of resistance emerged in the 1960s, when Jane Goodall (1964) provided evidence of chimpanzees using tools. Since then, some anthropologists and primatologists have sought to incorporate biology into cultural studies (e.g. Chapais 2010; McGrew 1992; Whiten et al. 1999).

environment in its cultural ecology, to Clifford Geertz (1973), who advocated a more semiotic approach, wherein anthropology is interpretative and the anthropological concept of culture has many faces but, for the most part, is unique to humankind.[6]

For the purpose of this work, culture will be defined as the social behaviors and norms set in the form of customs, traditions, and values acquired, shared, and transmitted by a group or community. It is a social learning experience that is neither inherited nor static, as it is constantly changing over time and place, ranging from adapting to social dynamics to coping with various environmental conditions.

But what place does food occupy in such a vast and intricate conception? If food has always been considered essential to fill a biological need, then anthropologists and archaeologists have clearly demonstrated its importance in cultural studies (e.g. Albala 2011; Anderson 2005; Boas and Hodge 1921; Cwiertka 2006; Flandrin and Montanari 1999; Harris 2005; Mallery 1888; Mirsky 1981; Powdermaker 1932; Salaman 1949; Smith 1889). As we will see, the intrinsic relation between food and culture is at the heart of human society. Through food, humans do not simply feed but rather create specific rules of manners and etiquette. They express their individuality, their social affiliation, and their perception of others. Beyond this, food is laden with symbolism and meanings that reflect our relationships, associations, beliefs, and conventions. Sometimes considered sacred by some, sometimes demonized by others, humans have integrated food within their cosmogony, myths, superstitions, taboos, or faiths. As Bertolt Brecht (1928 [2017]) once claimed: "Erst kommt das Fressen, dann kommt die Moral."

Through food selection, one starts a process of cultural affirmation and disassociation. This process begins at a very young age, where the parents, by imposing a certain variety of food, forge an emotional response in the child that will lead to the cultural determination of what is acceptable and what is not, and what is attractive and what is repulsive (Rozin 1985). For most North Americans and Europeans, the consumption of insects, dogs, cats, or a thousand-year-old egg[7] is considered foreign, alien to their table, and often repulsive, whereas in

6. However, in the present study, the evolutive aspect of culture shall neither be rejected nor ignored, nor shall biology be discounted from playing a role.

7. Also known as pidan, century egg, or black egg, the thousand-year-old egg results from the preservation of duck, chicken, or quail eggs for weeks or even months in a concoction of clay, salt, calcium oxide, and rice hulls. The process causes the egg white to transform into a dark, jelly-like consistency and the yolk to take on a creamy texture with a strong, distinctive flavor. This traditional Asian delicacy is often served with pickled ginger or used as a topping for congee, highlighting its versatility in regional cuisine.

some other parts of the world, these can be considered a delicacy. In China, Taiwan, Thailand, or Japan, for example, the thousand-year-old egg is highly regarded and well accepted by the population, where it becomes an element of torture in American TV shows.[8]

This selection is part of the social learning experience that transcends one person to have a strong impact on the community and their common beliefs. Our perception of what is healthy, commendable, or respectable is therefore influenced by our group affiliation (Isaacs 1975; Todorov 1989). To illustrate such influence, it suffices to look at the different national food guidelines in order to observe a disparity between what is considered a healthy pattern of eating and a cultural and biological reality. For example, the American (U.S. HHS 2015), Canadian (Health Canada 2011), or German (DGE 2018) dietary guidelines recommend a daily consumption of dairy products as part of a healthy lifestyle. However, according to the Food Intolerance Network (FIN 2013)), a vast part of the world population is lactose intolerant, and even in regions like Europe and North America, where the introduction of milk and its by-products goes back to the earliest phase of the Neolithic, between 15 and 30 percent of their population have been diagnosed lactose intolerant.[9] This biological incapacity to process the lactose contained in dairy products is considered normal in humans' development, as most mammals, once the lactation period ends, start gradually losing the ability to consume milk (e.g. McCracken 1971; Kretchmer 1972).

As for when and how some people have gained the capability to digest milk, the answer is still not fully understood by the scientific community. However, since it is possible, through transformation, to diminish or even eliminate traces of lactose in milk's by-products like butter, cheese, or kefir, many believe that a genetic mutation appeared in some human populations where these products were consumed (e.g. Bersaglieri et al. 2004; Enattah et al. 2008; Hollox et al. 2001; Myles et al. 2005). Since 70 percentage of the world's population is lactose intolerant (Armelagos 2010, 164), it is apparent that the recommendations made by the USA, Canada, or Germany reflect a cultural and economic decision based on social preference that can be traced back to the first farmers in Europe.

As we will see in detail in Chapter 4, the intensity in the production, transformation, and consumption of milk is already highly variable from region to region during the Early Neolithic, and certain groups, although technologically

8. The thousand-year-old egg is often featured in the segment "Spill Your Guts or Fill Your Guts" of *The Late Late Show with James Corden*
(e.g. https://youtu.be/sh9giaTKbv4?si=4gtzWBkD8NGze4_S —last seen 17.07.2025).
9. One exception is observed in Scandinavian countries, in which the prevalence of lactose tolerance is the highest in the world with numbers reaching as high as 74 percent (Sweden) and 82 percent(Finland) (Vuorisalo et al. 2012).

adept, rejected or limited such a dietary practice. Even if dairy products offer a high quantity of protein and vitamin D, cultural selection played a vital role in its dispersion and intensification throughout Europe.

Food is also at the core of our personal and group identity, as well as our relationship to others (Capella and Arnold 1993; Fischler 1988). We define, to some extent, ourselves through food, but we also define the other, as "eating is a daily reaffirmation of cultural identity" (Kittler and Sucher 2007, 4). Canadians see maple syrup not only as a great ingredient for any kind of meal, from scrambled eggs to the French-Canadian *poudding au chômeur*, but also as a symbol of their national identity. The Italians have their pizza and pasta, the French their cheese and wine, the Germans their beer and sausage, and the British their fish and chips. Such associations are often regarded as a stereotype, as not every German loves beer and sausage, and some French have a disdain for wine and cheese. Nevertheless, there is a tangible pride behind these products and the community which goes beyond the simple taste and preferences, as it mirrors group affiliation (e.g. Weber 1922; Assmann 1999; Crang 1998).

The positive reinforcement that food provides to one's own identity is also marked by a detachment toward outsiders and can, in some cases, institute new stereotypes to create a barrier between group unity and those foreign to the group. For example, some slurs in the USA target certain nationalities, such as Germans, who are sometimes called Krauts, poor white Southerners, who are termed crackers, or Irish, deemed potato heads (Kittler and Sucher 2008, 5). Such slurs are not a hallmark of identity; defining the other negatively through their food habits can be found throughout history. Saint Sidonius Apollinaris, a late antique Gallo-Roman aristocrat and bishop, called the barbarians "onion eaters" (Sidonius Apollinaris, *epistulae* 12.15.), while Strabo and even Homer described milk drinking exaggeratedly as a barbarian custom (Strabo 7.3.3.; Homer Iliad 2.13.5).

If food awakens strong sentiments of affiliation, it can also evoke a form of Todorovian exoticism, wherein we consider the culture of the other as superior to our own culture (Todorov 1989). In today's world, advocates of the Mediterranean diet, for example, promote the foodways of the Mediterranean people as a healthier lifestyle. Over the years, this diet has gained a lot of popularity, but it is only an idealistic perception of another culture. It is based on a false premise, as the cultural groups surrounding the Mediterranean do not follow such a diet and consume openly and copiously food demonized by the proponents of such ways, as is the case in Italy, France, or Spain, where charcuterie is beloved by the majority of the population. Thus, this openness to foodways or delicacies from other parts of the world demonstrates the fluid adaptive nature of culture and, in our case, a blurry line between a local food preference and an exotic other. Philosophically, this permeability evokes Homi K. Bhabha's 'third space,' wherein imported and indigenous foodways are continuously translated and reinscribed,

rendering authenticity a negotiated effect rather than an essence (Bhabha 1994). As Edward W. Said (1993, xxv) noted: "All cultures are involved in one another; none is single and pure, all are hybrid."

Culturally significant and central, religion will therefore influence food selection, thus reinforcing one's affiliation to a specific group or community. By creating food taboos and prescribing certain rules, religions seek to strengthen the sense of unity and devotion among their followers. Muslim, Jewish, and some Christian groups (e.g. Ethiopian Orthodox), for example, forbid the consumption of pork (e.g. Maimonides 1186 [1904], 370; Seleshe, Jo, and Lee 2014).

> And the swine, though he divides the hoof, and be clovenfooted, yet he cheweth not the cud; he is unclean to you. You shall not touch their carcasses; they are unclean.
>
> (Leviticus 11.7 KJV)

While these three religions see pigs as dirty and loathsome, in New Guinea and the South Pacific, pigs are revered by many horticultural tribes (Harris 1974). Swine are the principal holy animals, used on all occasions, whether it is a wedding, a funeral, a declaration of war, or for making peace. There is a belief among those people that dead ancestors crave pork, and to cope with this deprivation, immense feasts, where all pigs are eaten, must be organized:

> For several days in a row, the villagers and their guests gorge on great quantities of pork, vomiting what they cannot digest in order to make room for more. When it is all over, the pig herd is so reduced in size that years of painstaking husbandry are needed to rebuild it. No sooner is this accomplished than preparations are made for another gluttonous orgy.
>
> (Harris 1974, 36)

These examples show that food habits, and culture in general, do not always follow a logical, functional, or optimal pattern and can be challenging to comprehend. In Burma, chickens are raised for the thick bones of the cock used in divination, whereas eggs are rarely or never eaten (Lowie 1938, 303–304). Nowadays, horses are often bred for sports events and dressage demonstrations, but milking mares is avoided by many (Lowie 1938, 306–307). For some governmental officials and scholars in India (Heston 1971; Fundation 1955; Raj 1969), the sacred cow became an important factor in India's hunger and poverty. These few examples number among many which seem irrational, misguided, or harmful behaviors, and must be examined not only in their economic and functional aspects, but also in relation to their cultural context.

1.2 Methodological Approaches to Food Culture

As we saw, food has always been a core element of culture, and therefore central to anthropological studies. Most anthropologists will at some point address topics related to food, but few have introduced a strong methodology behind their theories. From the idealist approach, which focuses on the mental representation of food, to the materialist approach, which seeks biopsychological and behavioral answers, one must go beyond the accumulation of empirical data to form a strong methodological and theoretical basis for asserting diversities in foodways. In this section, six models will be presented to provide an overview of different approaches to food studies.

Starting with two structuralist approaches, we will explore the quest to find universalism in human culture and examine how food habits can translate the deep mental structures of human nature (Lévi-Strauss), or how food habits encompass a precoding and a coding system that leads to universal structure (Douglas). We will continue with the cultural materialist approach (Harris), which opposes idealist theories like structuralism and seeks to identify both emic and etic patterns in cultural food habits. Through two modern authors (Sobal and Bsogni), we will follow a model of food choice and observe how such phenomena can be analyzed. Lastly, we will visit a compendium of the most recent approaches to food studies as summarized by Pamela G. Kittler and Kathryn P. Sucher.

It goes without saying that anthropological and sociological research on food cannot be reduced to these few authors. Given the vastness of the topic, the present research will limit itself to these core authors. This selection was principally made to acknowledge foundational research that continues to exert a great influence on the field and to bridge anthropology and archaeology. However, I invite the reader to examine other noteworthy authors who have proven influential in the development of food studies, such as Jack Goody (1982), Arjun Appadurai (1981), Stephen Mennell (1991), Clark Wissler (1917), Mary J. Weismantel (1998), Sidney W. Mintz and Christine M. Dubois (2002), or Pierre Bourdieu (1979).

1.2.1 Lévi-Strauss and the Structuralist Model

French ethnologist and one of the central figures of structuralism and structural anthropology, Claude Lévi-Strauss spent his life searching for the deep structures that govern human culture. For him, culture is found in the symbolic structures hidden in our mind.

> Toute culture peut être considérée comme un ensemble de systèmes symboliques au premier rang desquels se placent le langage, les règles matrimoniales, les rapports économiques, l'art, la science, la religion. Tous ces systèmes visent à exprimer

> certains aspects de la réalité physique et de la réalité sociale, et plus encore, les relations que ces deux types de réalité entretiennent entre eux et que les systèmes symboliques eux-mêmes entretiennent les uns avec les autres.
>
> (Lévi-Strauss 1950, XIX)

To reach his goal, Lévi-Strauss based his methodology on Ferdinand de Saussure's structural linguistics to seek, through empirical data, a way to identify laws that define human nature and more precisely the human cognitive system (Lévi-Strauss 1974).

In his quest for human universalism, Lévi-Strauss spent more than two decades researching food habits as a direct pathway to the structures of human thought. He famously suggested that animals are not celebrated for their quality as "bons à manger," but instead as "bons à penser" (Lévi-Strauss 1962, 132). Together with Roland Barthes (1964), he proposed that food is, like language, a system of communication, and that all cultures involve the process of preparing and consuming food, which can lead to patterns or structures in cultural behavior (Lévi-Strauss 1958; Lévi-Strauss 1965). He sought to apply to foodways the linguistic concept of vowel and consonant triangles (also known as vowel diagram), which form the basis for describing phonetic systems of all languages by arranging vowel closeness (vertically) and vowel backness (horizontally) (Lévi-Strauss 1965, 7; Jakobson and Halle 1956, 38–40). Accordingly, he applied such methodology by examining a vast corpus of myths, rites, and ethnographic records to find common denominators in food habits.

In his work *Le crue et le cuit* (Lévi-Strauss 1964), he describes food consumption through the dichotomous aspects of nature and culture and its transformed state. Aligning with Roman Jacobson's linguistic triangle, he established three categories: raw, rotten, and cooked. The first two represent food as part of nature, while the third signifies the passage from nature to culture (Lévi-Strauss 1964, 152; 1965) (Figure 1).

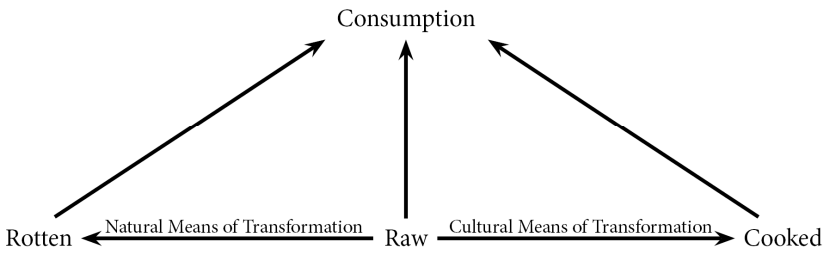

Figure 1. Levi-Straussian relationship between the cooked, the raw, and the rotten (based on Lévi-Strauss 1965).

For Lévi-Strauss, people tend to favor the cooked—the transformation that leads to culture—without necessarily rejecting the raw and the rotten. Examples include salads, fruits, raw oysters, cheese, yogurt, or aged beef, which are widely consumed across various cultures.

The mode of preparation is also a key element in Lévi-Strauss's argumentation. He described it as a "*triangle culinaire*" (culinary triangle) that encompasses all methods of cooking according to three elements: water (boiling), air (smoking), and fire (roasting) (Lévi-Strauss 1965). Each of these elements is combined with the aforementioned categories and linked to the nature-culture relationship (see Figure 2).

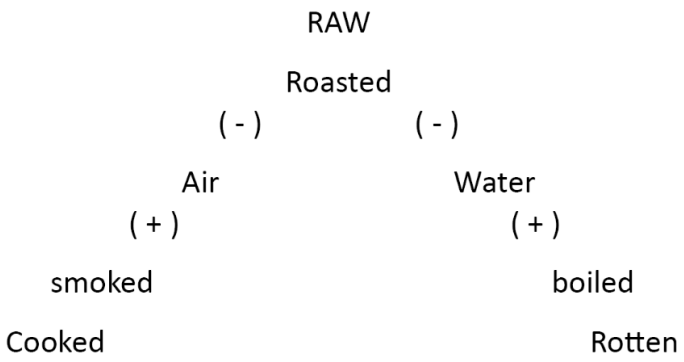

Figure 2. The culinary triangle (after Lévi-Strauss 1965, 26).

For Lévi-Strauss, the two main modes of preparation are the roasted and the boiled. However, both differ in the cooking process: grilled foods are directly in contact with fire, their manipulation is culturally minimal and more related to nature, whereas boiled foods require placement in a pot and thus demand greater cultural involvement. Smoking, on the other hand, is a process that does not require cultural objects but relies solely on the element of air. Thus, according to Lévi-Strauss, the relation between nature and culture is correlated with the means and results.

> La frontière entre la nature et la culture, qu'on imaginera parallèle, soit à l'axe de l'air, soit à celui de l'eau, met, quant aux moyens, le rôti et le fumé du côté de la nature, le bouilli du côté de la culture, ou quant aux résultats, le fumé du côté de la culture, le rôti et le bouilli du côté de la nature.
>
> (Lévi-Strauss 1965, 26)

Finally, not only did Lévi-Strauss include in his approach other means of cooking like frying or steaming, but also other aspects of food consumption such as the

opposition between animal and plant products or the use of condiments, both of these to develop a more complex diagram. The objective of such an exercise is to integrate all aspects of a culinary system from a studied group and compare it to other groups to identify universal laws in various domains such as economy, religion, gender, kinship, social disparity, or society.

1.2.2 Douglas's Model

Inspired by Lévi-Strauss, Barthes, and the structuralist movement, Mary Douglas became a prominent scholar in the field of symbolic and interpretive anthropology, especially in comparative religion and food studies. Her approach closely follows that of Barthes (1967) on how social events produce codes and how to decipher them. Despite being a proponent of the structuralist school, she disagrees, however, with Lévi-Strauss on two major aspects. Firstly, his search for universal laws fails, according to her, in many degrees, but more specifically, in considering "small-scale social relations" (Douglas 1972, 62). Secondly, she identified major flaws in his methodology, which gives too much attention to static binary analysis and comparative studies and neglects the variability or dynamism generated by local cultural variables. Therefore, it is difficult to validate Lévi-Strauss's conclusions, as the precoding or the intentions behind the categorization are not fully analyzed.

Her approach rests upon the premise that "food is a code" (Douglas 1972, 61), entailing a precode found in cultural behaviors, social relations, and social events. She thus distances herself from Lévi-Strauss by orienting her research toward the microscale, instead of focusing on worldwide comparisons. Thereby, Douglas seeks binary pairs in a specific series of social events and the reasons why a group employs certain categories while rejecting others. In other words, she searches for syntagmatic relations between the categories by relying mainly on analogies.

> A system of repeated analogies upholds the process of recognition and grading. Thus we can broach the questions of interpretation which binary analysis by itself leaves untouched.
>
> (Douglas 1972, 68)

To illustrate her methodology, she uses fixed categories related to time as a form of series:

a. Daily: all foods consumed from breakfast to nightcap.
b. Weekly: food that we eat once a week for religious purposes, social events, or personal preferences, e.g. Friday fish or Sunday brunch.

c. Yearly: food related to holidays and fast days.
d. Lifecycle: food consumed once in a lifetime or during life-cycle events, e.g. birthdays, special feasts, or weddings.

Through these categories, she examines the relationships binding them and the pre-code hidden in the patterns of social relations. To demonstrate her model, she extended her analysis by integrating the binary pairs of meals and drinks in her own society and among Jewish communities. For Douglas, there is a social distinction between meals and drinks, wherein the former corresponds mainly to something restricted (e.g. family or close friends), while the latter refers to something open (e.g. strangers, colleagues, or family). While both meals and drinks are laden with meaning, she developed her model in greater detail around the notion of meals.

> Each meal carries something of the meaning of the other meals; each meal is a structured social event which structures others in its own image. The upper limit of its meaning is set by the range incorporated in the most important member of its series. […] From coding we are led to a more appropriate comparison for the interpretation of the meal, that is, versification.
>
> (Douglas 1972, 69–70)

Therefore, she integrated the different linguistic and cultural aspects of the meal in her categorization of time to elucidate, at first, the symbolic structure of the private sphere, and, thereafter, the wider social system of a given community. She bases her classification of prohibited animals in the Torah or the Bible on elemental spheres (air, land, and water) and their degree of holiness—i.e. animals that are used for the table, the altar, or are simply abominable (Douglas 1972, 71–74; 1966). She suggests that any animals outside of these elemental spheres or belonging to more than one sphere should be considered taboo and unfit either for the table or the altar. For example, she explains that in the sphere of water, only creatures that have fins and scales can be part of the daily food. However, worms and snakes that can go both on land and in water must be avoided (Douglas 1972, 72).

As with Lévi-Strauss and other contemporaneous structuralists or cultural idealists of her time, Douglas's methodology has proven over the years to be flawed in some aspects (De Vos 1975; Duschinsky 2013; Boholm 1996). The implication of language as a solid structure and a means by which to reach the subjective consciousness of the actors so as to establish universal laws or, in this case, generalizations of a particular group leaves open questions of variability, uniqueness, and, more importantly, the validity of the basis on which the interpretations are made. When she performs a deep analysis of the textual structure of food taboos among Jewish communities, there is a lack of contextualization, agencies, and historicity in her approach. Thus, her interpretation does not encompass the historical back-

ground (e.g. in which context the Book of Deuteronomy was written), the religious context (e.g. she is taking the text as a pure expression of societal behavior without considering the ideology embodied in it), or the agency of religious actors (e.g. there are still some Jewish scholars who try to, partly or fully, rehabilitate pigs). She also follows Émile Durkheim's false assumption that society is a unified entity. Nevertheless, her work is still highly regarded in comparative religious studies and social anthropology (e.g. Douglas 2007; Moore 1997; Campkin 2013; Passariello 1990), as she established a methodology and theoretical background that helps to better grasp the concepts of sacred and profane and the place that food occupies in such contexts.

1.2.3 Harris Cultural Idealist versus Cultural Materialist

A father figure within cultural materialism, Marvin Harris devoted his life to the construction of a conceptual tool to effectively establish the causes of similarities and differences between cultural groups. He believed that sociocultural behavior is the result of practical problems and that it is through a strict scientific method that we can better understand cultural variability (Harris 1979, ix). At first, he sought to answer the epistemological problem that binds ideas and material to sociocultural events. For him, thoughts, like material, are part of reality but separable from each other and studied accordingly.

> The issue of whether ideas or material entities are the basis of reality is not, properly speaking, an epistemological issue. It is an ontological issue – and a sterile one, to boot. Materialists need only insist that material entities exist apart from ideas that thoughts about things and events are separable from things and events. The central epistemological problem that must be solved then is how one can achieve separate and valid scientific knowledge of the two realms.
>
> (Harris 1979, 30–31)

Therefore, he built his model upon the differentiation between mental representations and human behaviors related to their emic and etic context. By accepting the vast potential of the etic approach, Harris demarcated himself from cultural idealists like Kenneth Pike (1967), who consider social sciences to be the study of emic systems, where etic data are only used to initiate the analysis (Pike 1967, 38–39; Harris 1979, 35). For the cultural materialist, etic is not a starting point to emic, as both contribute equally to the analysis of sociocultural events.

Harris strengthened his argumentation with an example from some of his fieldwork in southern India, wherein he sought to investigate the causes of death of domestic cattle and, more specifically, why the mortality rate of male calves is

twice as high as that of female calves (Harris 1979, 32–33). On an emic level, local farmers believed that male calves got sicker since their lactation period is drastically shorter than that of females and that this was completely unrelated to any form of control, which is forbidden by Hinduism. On an etic level, he registered that the low interest in the region for traction animals resulted in the males being culled as a response to ecological and economic demand. This example demonstrates that both emic and etic play an important role in the construction of a social science discourse.

Another cornerstone of his method is his revision of Karl Marx's concept of *Basis und Überbau*, which provides a theoretical and methodological framework to study the connections between the different elements that compose a given system and their evolution (Harris 1979; Marx 1859, 1847). Whereas Marx created a model based on the distinction between socioeconomic production (base) and an ideological system (superstructure), Harris redefined it into a tripartite concept of infrastructure, structure, and superstructure (see Figure 3).

Cultural materialism, nevertheless, follows at its core Marx's conception of materialism.

> Die Produktionsweise des materiellen Lebens bedingt den sozialen, politischen und geistigen Lebensprozeß überhaupt. Es ist nicht das Bewußtsein der Menschen, das ihr Sein, sondern umgekehrt ihr gesellschaftliches Sein, das ihr Bewußtsein bestimmt.
>
> (Marx 1859, xi)

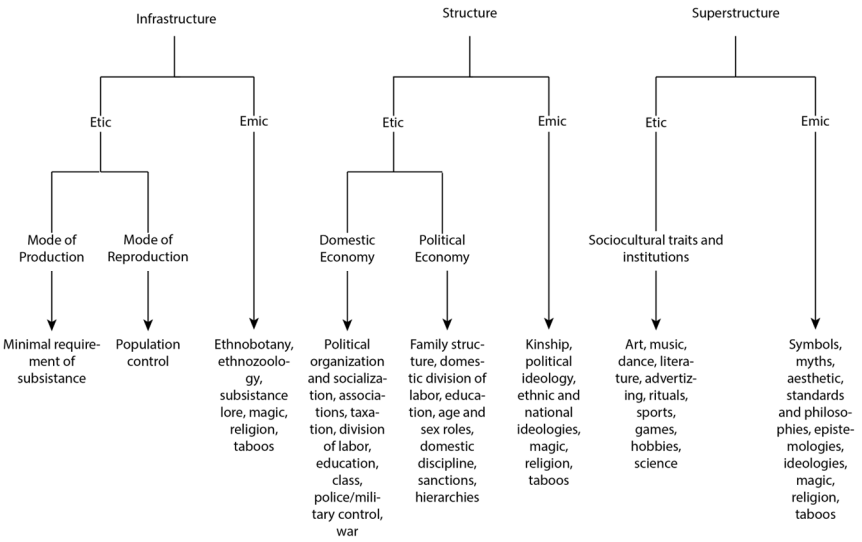

Figure 3. Harris' Infrastructure-Structre-Superstrucure model.

However, a redefinition was necessary as, according to Harris, a gap exists within Marx's approach in relation to the mode of reproduction and the distinction between emic and etic as well as between human behaviors and mental representations (Harris 1979, 55). Harris also opposed Marx and Friedrich Engels' dialectical materialism since it implies an equal influence between the structure and the infrastructure. For Harris, an unbalanced relationship exists between the two structures as the infrastructure exerts a greater influence on the structure, whereas the structure has minimal impact on the infrastructure. This form of infrastructural determinism provides the basis of his methodology and sets the analytical priorities. Causes related to infrastructural factors are prioritized, followed by structural causes, and finally, should no answers be found in the etic behavioral hypotheses and theories, then answers can be sought through the emic superstructure.

He also criticized Marx for rejecting Thomas R. Malthus' population theory and, in doing so, omitting one of the fundamental parts of the infrastructure, namely human reproduction.

> There is no more important aspects of production than reproduction – the production of human beings. While there are structural and superstructural aspects to the modes of population controls, the central issue has always been the challenge the biology of sexual reproduction presents to culturally imposed restraints.
>
> (Harris 1979, 70)

A great part of Harris's life work was the application of his theoretical model to various food taboos around the world. Among his most famous cases, one can find a deep study on the sacred cow in Hinduism, the prohibition of pork consumption by Judaism and Islam, and the Potlatch (Harris 1974, 1987; Harris and Ross 1987). Accordingly, he organized his analysis by identifying the emic and etic causes of food aversion and establishing the role they played in the infrastructure-structure-superstructure model. As seen in the aforementioned example of the discrepancy between male and female calves kept alive in southern India, one can observe the ideological system of a given society through the emic response, while the etic response attempts to mirror a socioeconomic and biological reality closer to foodways. Furthermore, Harris acknowledged that notions of status privilege and optimization strategies are necessary to understand the etic elements of food habits (Harris and Ross 1987, 72–79). Status privilege is exemplified by the lower caste members in Kerala, India, who produce and consume fish while it is prohibited for the higher castes.

Etically, it can be argued that such socio-economic behavior is justified to relieve competitiveness or tensions in the acquisition and consumption of food between different castes. Optimization strategies are viewed here according to

two distinctions: a) between the use and nonuse of certain foods and b) between short-term and long-term optimization. However, in both cases, it comes down to the optimization of the cost/benefits of production and biological needs to assert the potential of food selection and the positive impact of control on production to avoid depletion or habitat degradation.

If Harris was well known for his criticism of other anthropological paradigms, cultural materialism does have its share of flaws much like any other anthropological paradigm. Most of his detractors are those he openly attacked and offered a counternarrative to cultural materialism. Marxists repudiate Harris' criticism of the equal relation between the infrastructure and the structure by arguing against the dependency of the structure on the infrastructure and reinforcing the need for a dialectical approach to acknowledge the influential relevance of the superstructure on the base (Friedman 1974). Jonathan Friedman also expressed concerns that a lack of social causes can lead to a form of techno-ecological determinism. It is noteworthy that cultural materialists do not advocate environmental determinism and do not claim that the structure and the superstructure have no influence on sociocultural changes. Yet, they believe that changes in these instances cannot occur without transforming the infrastructure and that they must necessarily align with the infrastructure to be fully integrated into the culture.

For cultural idealists such as Lévi-Strauss and Douglas, a distinction between emic and etic is irrelevant, as the etic approach can dangerously lead to ethnocentrism and biased conclusions. For them, the causes of food avoidance reflect mental expressions, symbolism, and the uniqueness of a particular society, following one of three possible paths: idiographic-historical evolution, the representation of a given system of values and beliefs, or planned and unplanned discovery (Harris and Ross 1987, 57). As we have already seen, for the idealists, only culture can change culture, as it is the core of human social structure. Marshall D. Sahlins expressed reservations about the etic approach to food consumption, stating:

> The aim of these remarks on American use of common domestic animals will be modest: merely to suggest the presence of a cultural reason in our food habits, some of the meaningful connections in the categorical distinctions of edibility among horses, dogs, pigs, and cattle. Yet the point is not only of consuming interest; the productive relation of American society to its own and the world environment is organized by specific valuations of edibility and inedibility, themselves qualitative and in no way justifiable by biological, ecological, or economic advantage.
>
> (Sahlins 1976, 170–171)

More recently, many schools of thought under the banner of postmodernism have also argued against cultural materialism and, at the same time, against any models that promote and rely on a scientific base (e.g. Spiro 1996; Ravetz 1971; Feyerabend 1975; Otto 2011). Influenced by Thomas Kuhn's (1962) paradigm shift, postmodernists have raised concerns regarding the objectivity of science, the social role of science, and the great variability of human behavior as subject to scientific methods and conclusions. According to Melford E. Spiro, science as a premise to anthropological studies fails in two main ways:

> First, because of the subjectivity of the human object, anthropology, according to the epistemological argument, cannot be a science; and in any event the subjectivity of the human subject precludes the possibility of science discovering objective truth. Second, since its much-vaunted objectivity is an illusion, science, according to the ideological argument, serves the interests of dominant social groups (males, whites, Westerners), thereby subverting those of opposed groups (females, ethnics, third-world peoples).
>
> (Spiro 1996, 759)

Anthropological criticisms of cultural materialism often stem from discomfort with the notion that human cultures, even if denied by Harris and his followers, do not seem bound to reality but instead exist as part of a mystical emic creation. By prioritizing etic behavioral events and the infrastructure over others, it becomes clear that the superstructure and emic causes are neglected. For Maurice Bloch (1983, 131–140), cultural materialists produce ad hoc hypotheses that leave holes open to inquiry from general theoretical questions. For instance, it is interesting to understand some of the economic and rational explanations of the sacralization of cows in India, but Harris's model does not cover fundamental questions such as why this phenomenon was not generalized to other cultural groups around the world.

The quest to find answers in optimization patterns can, in some respects, prove counterproductive as human cultures, as we have seen, do not always follow a logical path. Therefore, questions regarding the origin of sociocultural behaviors are only partially addressed as the study of emic aspects of cultural changes receives attention only when etic aspects fail to provide answers. This critique does not target the scientific nature of Harris's methodology but rather his circumvention of the sociohistorical and cultural nature of anthropology. If the visions of Sahlins and the idealists, as well as the Marxists and the postmodernists, are to some degree justifiable, Harris has also presented strong and valid arguments in terms of methodology. Compared to Lévi-Strauss and Douglas, Harris furnished a more comprehensive method for undertaking anthropological research. We will see in Chapter 1.4 how Marxist, cultural idealist, and cultural

materialist approaches can be disentangled to form an efficient methodology that considers and addresses the limits and problems encountered in a prehistorical context.

1.2.4 Omnivore's Paradox: A Preamble to Food Choice

The omnivorous nature of humans allows diversification in our food selection by enabling the possibility to choose from a wide range of produce and animal products. It gives us a freedom of choice that fundamentally contributes to our adaptability to various environmental conditions (see e.g. Anderson 2005, 12). This freedom is, nonetheless, limited by our necessity to cope with biological needs—i.e. carbohydrates, protein, vitamins, minerals, etc. (Fischler 1988, 278); As we are not bound to one source of nourishment, we must consume a variety of foods to survive.

The omnivore's paradox concept was proposed by Claude Fischler (1980) to express the ambivalent nature of human food habits. Through our willingness to change and explore novel foods, we are, at the same time, confronted by our resistance toward those same changes. Therein lies the omnivore's paradox, as we are caught between the desire for experimentation and the comfort and security of conservatism. This presents a clash between our attraction to new food and the traditions we hold dear.

> The omnivore's paradox lies in the tension, the oscillation between the two poles of neophobia (prudence, fear of the unknown, resistance to change) and neophilia (the tendency to explore, the need for change, novelty, variety). Every omnivore, and man in particular, is subject to a kind of Batesonian double bind between the familiar and the unknown, monotony and change, security and variety.
>
> (Fischler 1988, 278)

By creating rules and developing food habits, human societies have created a way to control the anxiety produced by the need for variety, but also to regulate the process of experimentation—a secure guideline for novelty that can be biologically or culturally harmful. As we saw previously, food is a central cog in the cultural development of human society, and through choices, we form an identity, which can be defined, in this case, as our response to the omnivore's paradox. Our ability to adapt to different environments is not solely dependent on local foodstuffs but rather on an aptitude to make choices. Through technology, humans have developed many ways to transport their food heritage and, consequently, have the opportunity to explore innovation or the comfort of tradition. Since the dilemma occurs in the biological need to widen the food selection and our persistent struggle between experimentation and conservatism, the concept

of the omnivore's paradox proves useful in investigating notions such as acculturation, assimilation, adaptation, integration, and evolution. As Fischler (1988, 279) has pointed out, it is through learning capabilities and behavioral flexibility that the paradox can be resolved. It provides, therefore, a new frame to question food habits in an archaeological context, as it revolves around adaptability, innovation, resilience, and the transformation of human society.

1.2.4.1 A Food Choice Model

The notion of choice continues to intrigue researchers across disciplines, from philosophers to biologists, and we are only at the dawn of understanding its nature. In the field of food studies, it continues to play a central role, and many researchers, through different agendas, attempt to explain what dictates our food choices or why people eat what they eat (Furst et al. 1996; Booth 1994; Mennell 1991; Mennell, Murcott, and Otterloo 1992; Glanz, Hewitt, and Rudd 1992; Axelson and Brinberg 1989; Shepherd 1989, 1990; Shepherd and Raats 2011; Schutz 1988; Thompson 1988; Murcott 1983; Rozin 2007, 1980, 1998; Rozin and Cines 1982; Rozin and Fallon 1980; Rozin 1985). Already in 1943 and 1951, Kurt Lewin attempted to categorize the possible influential factors leading to food choice via interviews, namely taste, health, social status, and cost. In the following decades, an ever-growing body of research explored different paths, with some examining cognitive responses and seeking to understand the motivation behind food choices (Cosper and Wakefield 1975; Krondl and Lau 1982; Lau, Krondl, and Coleman 1984; Michela and Contento 1986; Rappoport et al. 1993). For example, Bell et al. (1981) observed a strong link between food beliefs and food choices in a study involving six participants from different backgrounds. Bett (1985) found that the elderly see health factors as a positive reinforcement for food selection, whereas expense is negatively represented. More recently, Wolf et al. (2003) encountered similar conclusions while studying food insecurity among the elderly, with health issues being regarded higher than price. Others analyzed the societal and individual aspects of food choice by examining various norms imposed and the contact between individuals (Schutz 1988; Worsley, Coonan, and Baghurst 1983).

In recent years, biological approaches have sought to explain how changes in our body affect our perception of food. In her doctoral thesis, Stefanie Kremer (2006) demonstrated that a link exists between age and food perception. She concluded that due to changes in the sensory system, an elderly person perceives food differently from a younger person; however, the liking of food does not change. Despite the extensive research on the factors influencing food choices, our comprehension of the phenomenon remains incomplete. Nonetheless, some scholars have proposed different models to study food

choices and aid in our observations. For the purpose of this book, the model of Furst et al. (1996) offers a solid method to acknowledge and study food choices. Later, in Chapter 2.4, we will revisit and adapt the model to answer prehistorical questions. After compiling an exhaustive list of studies related to food choices, the authors recognized the necessity of providing a conceptual model that could be applied to other fields and contexts by offering a holistic perspective on the question. Based on inductive reasoning, they followed a constructionist approach and qualitative research methods to conduct interviews and identify common factors related to food choices among the participants. The results of their study yielded a complex model that encompasses the factors and processes for a single food choice (Figure 4).

From top to bottom, we have a succession of interrelated influential parameters to guide us in decision-making, from general factors to more specific elements.

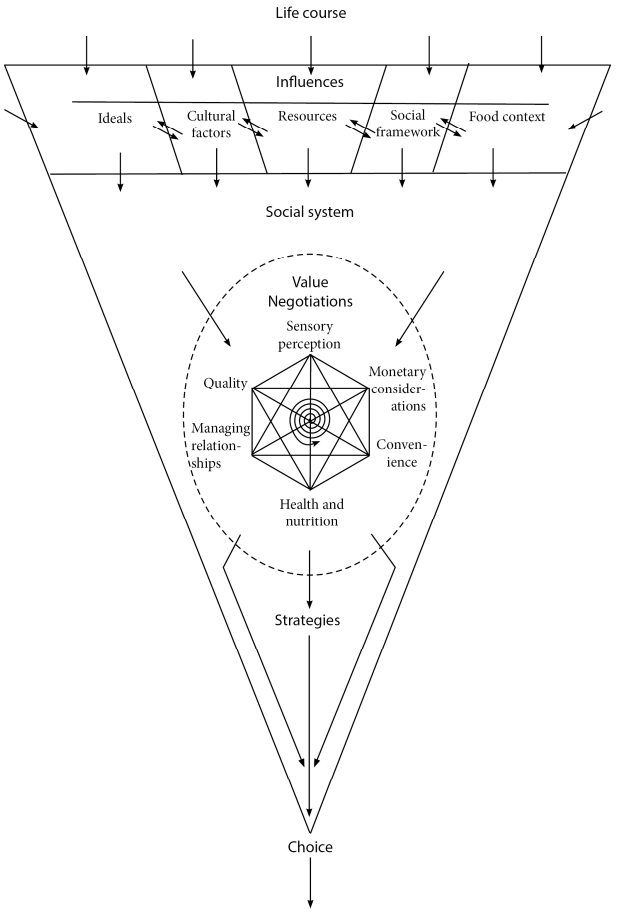

Figure 4. Reproduction of the food choice model (after Furst et al. 1996, fig. 1).

It all starts with the life course, a collection of sociocultural, personal, and environmental aspects that provide the basis of the analysis. This includes variables such as personal experiences, historical eras, trends, transitional events, age cohort or generation, economic status, traditions, emotions, ideas, or information (Furst et al. 1996, 252). It is the general background of the subject that establishes the first step in decision-making.

This is followed by the influences, which are grouped into five categories: ideals, personal factors, resources, social framework, and food context. These influential factors are not isolated or limited, as they have vague borders and affect and shape one another. They were nevertheless identifiable and recurring central themes emerging from the interviews.

First, the ideals, a pervasive influence that can be translated as the emotions and beliefs rooted in the sphere of culture and symbolism. This comprises our religious and common beliefs, our expectations, standards, values, principles, moral code, and hopes and fears. It becomes a point of reference for the proper or correct way of doing things. As we saw with the prohibition by Jewish law of mixing meat and milk, food choice is influenced by our ideals. It can, however, be more subtle; through our social status, the events we attend, or our aspirations, we create norms and symbolism expected to be followed.

Second, we have the personal factors, the individual needs and preferences. Two categories emerge from this: psychological factors (e.g. likes and dislikes, emotions, individual food styles, or food centeredness) and physiological factors (e.g. age, health status, sensory preferences, hunger, or allergies). This corresponds to choices based on who we are and what we need as individuals. Some people are more adventurous and will gladly welcome exoticism on their plate, whereas others, pickier, will restrict themselves to searching for security and comfort in well-known and accepted products.

Third, resources correspond to a more tangible factor in food choice. This includes the limits imposed by our socioeconomic status, the equipment at our disposal, and the space available to us. There are, however, some intangible factors that are included, such as skills, knowledge, and time. Someone can be wealthy but lack the proper skills, thereby being limited in their food choice.

The fourth and fifth categories are closely related but still distinct. On the one hand, the social framework presumes our interpersonal relationships, social roles, and meanings as driving factors in food choices. In certain social contexts, we expect specific food choices. At home, the main provider of the family must interact and negotiate with the other members of the household to acquire products that fulfill needs, please, or shape the family's food habits. In various cultural settings, it is not rare to see guests bringing something to the host. On the other hand, food context is related to the sociocultural environment and physical

surroundings. In this macroanalysis, food choice is influenced by the larger cultural setting and the food supply available (e.g. types of food, food sources, or seasonal and market factors).

Finally, all the previously described elements lead to the foundation of a personal system featuring two parts: value negotiations and strategies. The value negotiations correspond to the components that form one's personal food system. From the interviews conducted by the authors, six values were identified as being central to all the participants, namely: sensory perception (e.g. taste, odor, appearance, or texture), monetary considerations (e.g. price), convenience (e.g. time, quantity, accessibility, or preparation), health and nutrition (e.g. disease avoidance, due to a disease, weight control, prescriptive, or proscriptive), managing relationships (e.g. ideals, culture, empathy, or accommodation), and quality. The spiral and arrows at the center of the figure display the highly dynamic nature and the relationship between these values. They are not only closely related to each other but also change and transform during a lifetime. Our taste, for example, changes as we grow up, and we can develop new interests in previously disliked foods. Quality is another good example, as it often reflects personal standards of excellence. The subjectivity of food quality depends on one's knowledge, feelings, and beliefs. For some people, homemade cake corresponds to a better choice than store-bought examples, as it satisfies both the feeling of excellence and the sensory notion of better taste.

Ethics, tradition, and familiarity were values that also emerged, but not on a regular basis. The authors do not, however, propose an answer as to why these values are less frequent. It is important to consider such questions, as some notions can be intrinsically integrated into someone's life without being fully noticed. Tradition exemplifies such a problematic, as it is part of our daily routine and requires personal reflection to acknowledge the behavioral patterns. Max Weber (1922, 22) considers traditions as the foundation of the group, which, in return, will grow as a community, a "Gesellschaft." For Eric Hobsbawm (2012, 4), the creation of traditions, a long process of "formalization" and "ritualization" inspired by past behaviors, is in action and solidifies through repetition. In such scenarios, traditions are so integrated into the group or an individual that they may often seem invisible or forgotten.

Finally, strategies correspond to a possible outcome when previous choices become habitual, that is, part of a routine. The strategies are shaped by an established procedure and are generally considered to be stable with a certain flexibility. While individuals tend to incorporate a personal touch, a form of uniqueness at their table, these choices will often reflect what is perceived as the dominant trend in a given sociocultural system according to the event (e.g. daily patterns or holiday food). Irrespective of the situation, strategies simplify

repeated decision-making situations based on the value negotiations processed as customary behaviors. These strategies, however, are not an obligatory passage towards food choice. As Figure 4 shows, the transition between value negotiations and the choice can often be direct and may never become a regular food pattern. When someone tries a new ingredient or a new recipe for the first time, there is no certainty that the novelty will be integrated into the routine.

The model presented here provides a general overview of the possible trajectories that lead to a food choice. From life course events and experiences to personal interests, new experiences to strategizing food habits, this model encompasses the intrinsic combination of sociocultural factors and individual needs required to expose the variables that lead to a certain selection. A simplified reinterpretation of the model has been, in recent years, suggested by two of the original co-authors, Jeffery Sobal and Carole B. Bisogni (2009), so as to clarify some elementary notions and incorporate new features (see Figure 5).

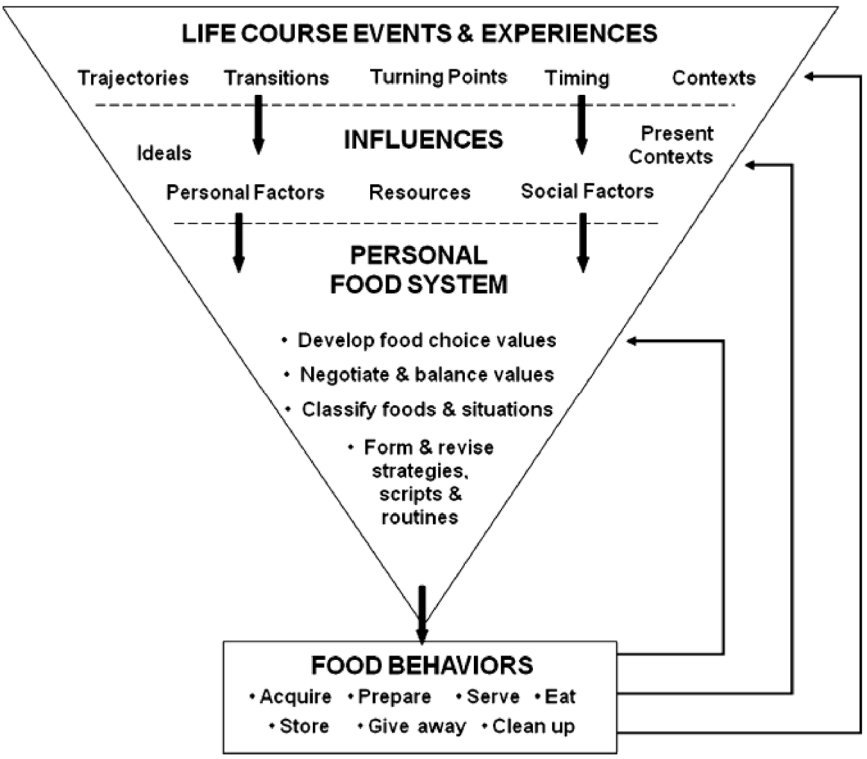

Figure 5. A food choice process model (after Sobal and Bisogni 2009, fig. 2).

A first change occurs in the additions of categories related to the life course to expose the dynamic aspect of the life course that transcends life cycles and psychological evolution (Sobal and Bisogni 2009). These values reveal the variability behind the subject's background and its development. Another change is the quadripartite composition of the personal systems to emphasize the different steps behind the personal consideration of food choice. Although value negotiations and strategies mostly stay the same, the addition of developmental factors and the notion of classification reiterate both the dynamism of the process and the search for stability in chaos by classifying what is edible or not, what constitutes proper manners or not, what is socially accepted or not, and what we do personally and socially need. The last major change is the replacement of choice by the formation of behavioral food patterns. This depicts a more explicit connection between the choice and the personal systems, the influences, and the life course, and also illustrates how these factors contribute individually and collectively to every aspect of food habits.

It is noteworthy to recognize that in both models, the constructionist approach may have hindered the integration of some variables such as political factors, cultural patterns, social structures, and biological needs and limitations. By having a focus group concentrated in the U. S. and looking primarily at modern individual influences instead of societal decisions, Sobal and Bisogni (2009, S43) have raised some concerns regarding the limitations of the model in terms of other cultures and historical eras. Nevertheless, the model proposed by Furst et al. and its renewed form as presented by Sobal and Bisogni prove helpful in many ways in grasping the various factors of food choice. Its applicability can go beyond the individual choice to reach a general analysis of societal food selections with some reevaluation. We will see in Chapter 1.4 how the model, after modification, can help to enhance prehistorical research in contextualizing and reframing our questions concerning past food habits.

1.2.5 Kittler and Sucher's Four Models of Food Habits Studies

Experts in the field of nutrition and food habits, Pamela Goyan Kittler and Kathryn P. Sucher (2008, 7–12) provided one of the most extensive textbooks on food culture and its theories, methodologies, and worldwide applications. By collecting and analyzing various models to inquire into food habits, they established four core principles by which to study the role of food within cultures: namely, the frequency of food consumption (core and complementary foods model), the cultural ways of preparing and seasoning food (flavor principle), a temporal approach to food consumption (meal patterns and meal cycles), and,

finally, the changes in food functions within a given sociocultural system (developmental perspective of food culture). These four models provide, according to the authors, the basis by which to categorize and study modern cultural food habits and the role played by food within culture.

As we will see, they provide the framework to encompass most variables related to tangible cultural behaviors but lack in demonstrating the historical potential. Nevertheless, within the core foundations of these models, there are elements that can be borrowed and applied to prehistorical research.

1.2.5.1 Core and Complementary Foods Model

The core and complementary foods model constitutes an analytical tool by which to categorize and interpret the frequency of food consumption within a cultural group (see Figure 1.2 in Kittler and Sucher 2008, 7). At the center, we can discern two main categories. First, the core foods correspond to our daily habits—the foods that are included in our meals on a regular basis, usually complex carbohydrates (i.e. potatoes, rice, wheat, corn, plantains, or taro). Second, we have complementary foods, which are mostly found among agrarian societies to enhance taste and the core food experience. Elements of this category do not always belong to daily consumption and can occasionally number among secondary foods or even peripheral foods. For instance, vegetables are now integrated within core ingredients and encouraged by health institutions in many cultural groups. For example, tomato sauce is often added to pasta, or citrus to schnitzel and fish.

However, the Inuit paradox demonstrates that the opposite can also be true, as their core food is composed of high protein and fat (i.e. meat and fish), whereas fruits and vegetables are rarely consumed, even though plant-based foods are available in the region (e.g. Damas 1972; Bell, Draper, and Bergan 1973; Draper 1977; Condon and Ogina 1996; Searles 2002; Morin 2007; Mead et al. 2010; Gadsby and Steele 2004). Yet, Inuit inhabiting the Arctic region seem to have adapted to such a diet and have demonstrated a low rate of heart disease and cancer while living a healthy life. However, it is important to note that they are lactose and sucrose intolerant, and the impact of acculturation has destabilized the fragile food habits of these people. Consequently, the rates of obesity, hypercholesterolemia, and hypertension are continuously rising, as processed food becomes ever more a part of their lifestyle (e.g. Draper 1977; Bjerregaard, Young, and Hegele 2003; Kuhnlein, Soueida, and Receveur 1996).

Secondary foods correspond to items that are widely consumed, once or more per week, but not as often as core foods. In our society, staples like chicken, ground beef, apples, or tomatoes are designated as secondary foods since they occupy an important place in our diet but are not considered a daily necessity.

Finally, peripheral foods are sporadically introduced into the diet for special occasions (e.g. holidays or birthdays) or for personal reasons. It is often thought that peripheral foods are greatly affected by personal preferences and do not always represent cultural group habits (Kittler and Sucher 2008, 7). Being less eaten or less integrated within cultural habits, food changes generally tend to first appear in the peripheral zone. To affect core foods, significant sociocultural transformation must occur in any given society to modify the basic notions of what is acceptable or not, what is healthy or not, and what constitutes good habits or not. This temporal classification of meal consumption proves helpful in understanding not only the core selection of food but also in examining variability, individuality, and priorities in a cultural group.

1.2.5.2 Flavor Principles

According to the authors, flavor principles come second in importance after the core selection of ingredients in food habits (Kittler and Sucher 2008, 8). Based on Elizabeth Rozin's work (1973), this principle lies in the preparation and seasoning of food to alter the core ingredients and lend them a more appealing taste. It is consequently considered the passage from feeding to eating and the basis of food variability, as a staple can be consumed worldwide but produced and prepared very differently. For instance, rice can be found in most countries, but its preparation can greatly differ (e.g. risotto, Chinese fried rice, or biryani). The location of production also transforms the texture, taste, and quality, as not every vineyard produces the same wine. However, the two main factors are the techniques applied in the food process and the seasoning, respectively.

Food processes encompass three categories: preparation, cooking, and preserving. Each of these will eventually influence the final results (Kittler and Sucher 2008, 8). Although the authors provide a list of possible methods, it is worthwhile mentioning the work of André Leroi-Gourhan (1949, 1945), who rendered one of the first exhaustive reports on the various human techniques, from transportation modes to food preparation, encountered in prehistoric and ethnographic contexts around the world.

In the process of food preparation, we can find various techniques like washing, shelling, filtering, hulling or peeling, chopping, pounding, rasping, pressing, soaking, leaching, grinding, or marinating. Once the food is prepared, there is a panoply of cooking methods offering a great diversity in flavor, be it baking, roasting, grilling, stewing, toasting, steaming, smoking, boiling, or frying. Another important factor, forgotten by Kittler and Sucher, is the cooking apparatus. The choice between a stainless steel pan and an iron pan is not only a matter of cleaning but also of taste. Finally, what the authors considered as preserving methods are a mix of techniques to extend the edibility of food and/or to transform it into

new staples, such as fermenting, drying, curing, canning, pickling, smoking, and freezing. The types of containers in which the food is stored can also have an effect on the flavor.

The last step in preparation to become cuisine is seasoning, an essential aspect of food habits. Through seasoning, we reinforce the palatability of food, cover the foul taste of spoiled meat, and acquire yet another means of preservation. Herbs and spices also generate emotional responses, from the feeling of risk-taking in consuming chili to addressing the omnivore's paradox by recreating familiarity while exploring the unknown. Among all the seasonings available in the world, salt is one of the most popular, as it exemplifies most of these attributes. Its functions are numerous as it is easily produced; it elevates the blandness of many core ingredients, aids in the preservation of meat, provides essential minerals, and has become a synonym of familiarity since its prehistoric use. As we will see in Chapter 4, seasonings like salt historically often played a vital role within economic strategy, whether as a trade currency or a luxury good.

These flavor principles correspond, therefore, to the process of combining different seasonings and become an interesting tool by which to classify ethnic groups according to their unique combinations and selections. It is often what differentiates two similar core foods from two different cultures. The flavor principles do not, however, limit themselves to herbs and spices but also incorporate vegetables, fat, oil, and all the techniques related to preparation, cooking, and preservation to alter the taste. Examples of such cultural combinations are many and diverse, such as the Chinese with soy sauce, rice wine, and ginger; Brazilian: chili peppers, dried shrimp, ginger; Greek: lemon, garlic, oregano, olive oil; and Italian: tomato, garlic, oregano, olive oil (Kittler and Sucher 2008, 9; Rozin 1973).

Within a broader spectrum, Ahn et al. (2011) found significant differences between North Americans and Western Europeans in pairing flavor compounds when forming a dish. The authors' general hypothesis was that many modern chefs try to combine flavors that have similar properties, such as how chocolate and caviar share trimethylamine and other compounds, as it is believed that such combinations provide a harmonious taste. It was observed, culturally speaking, that North Americans and Western Europeans tend to follow this rule in their cuisine, whereas East Asians seek to avoid it (Ahn et al. 2011). Nevertheless, the flavor principles are an interesting tool by which to appreciate cultural, regional, or individual differences, as well as aspects of tradition, legacy, and education in a given group. This remains, however, limited to a broad generalization with many exceptions, especially today with the globalization of food and the growing interest in integrating exotic foods into our core meals.

1.2.5.3 Meal Patterns and Meal Cycles

By accepting the premise that every culture seeks to consume at least one meal per day, the study of the emic and etic structures of meal patterns and meal cycles is intrinsically tied to sociocultural behavior and our understanding of human culture. This aspect of food study examines the core composition of what constitutes a meal in a given society or for an individual, and the cultural rules that govern such a meal. In Europe, for instance, a meal is often formed around a source of protein (e.g. meat, fish, eggs, tofu, or seitan) and a side dish (e.g. vegetables, salad, or pasta). In some Asian regions, no matter how much is consumed, if rice is not included, it will not be considered a meal (Kittler and Sucher 2008, 9).

Another important element is the serving order during a meal. In Canada and the United States, the general rule implies starting with appetizers, followed by a salad or soup, the entrée, the main dish, and finally dessert. Yet, in France, the situation is slightly different. Historically, at least until the 19th century, the so-called "service à la française" was followed, wherein meals were split into three courses (e.g. Strong 2003; Queneau 2006; Rambourg 2008). First, the soup and the fish were served, followed by the roast, and finishing with the dessert. However, each of these three courses always included appetizers and desserts. This was a form of buffet meant to impress guests gathered for the event with its opulence. During the 19th century, a new form of service called "service à la russe" was adopted and is still in use today. Instead of having three meal buffets, a serving order was established, now modernly adjusted, starting with soup or oysters, followed by fish or entrée, salad, the main course, dessert, and finally the digestif. It is understood that these examples describe a copious meal, and daily food habits do not always include all of these elements, but the order is preserved. In Western Europe or North America, it is rare to see people eating dessert before the main dish or appetizers after dessert. Certain foods also receive special attention regarding the time of day they are consumed. Eggs and bacon are cultural staples of the English breakfast, whereas cheese and olives are a prime choice in the Middle East.

Other analytical variables for studying meal preparation and consumption include the size of a portion, the person preparing and consuming the meal, the time of preparation and consumption, as well as periods of feasting and fasting. The notion of meal cycles attempts to address these variables, as meals vary from culture to culture depending on daily and weekly habits and yearly events. The study of meal compositions and cycles aids in translating different sociocultural markers (e.g. religion, status, or common beliefs) applied in daily life.

1.2.5.4 Developmental Perspective of Food Culture

The last analytical tool proposed by Kittler and Sucher (2008, 11) is the developmental perspective of food culture, which tries to identify and link structural changes within society with changes in cultural food habits. Yet, it is not a study of primary causes and their consequences, where the outcome of societal changes will be reflected in cultural changes, but instead a parallel evaluation of sociocultural transformation. Therefore, by asserting an observed societal change like globalization, we must take into consideration the parallel changes in culture—in this case, consumerization.

Based on Sobal's research on food choices and societal changes (1999), Kittler and Sucher identified four main structural transformations and their cultural parallels. First, we have migration, the passage from a native and familiar sociocultural environment to a new setting, and acculturation, the influence exerted by the contact between different cultures. The movement of populations throughout history demonstrates not only the adaptability of humans to new environments but also the impact they can have on their surroundings (e.g. Thornton et al. 2019; Hancock et al. 2010; Boyd and Silk 2017; Ilardo and Nielsen 2018). The concept of acculturation is the cultural translation of such a notion, and it is often regarded as the changes imposed by a dominating culture over a weaker one (e.g. Titiev 1958; Thompson 1996; Kroeber 1948; Gordon 1964; Winthrop 1991). It can be the result of political, economic, or military conquest but also of migration. While the first generation of migrants continues to have an emotional bond to their homeland and seeks to perpetuate its cultural heritage, subsequent generations begin integrating the values and principles of the majority culture.

Beyond the dominant-dominated relationship, acculturation can take other forms. Biculturalism, for example, happens when the majority culture does not compete with but rather complements one's ethnicity. In this case, both cultures are embraced and kept alive. Assimilation is another example, where one culture is almost or fully absorbed by another (e.g. Thompson 1996; Gordon 1964). In all these cases, food habits will be impacted by the structural changes (Kittler and Sucher 2008).

Secondly, the phenomenon of urbanization,[10] whereby a large percentage of the population decides to leave their rural residence for a suburban or urban location, results in delocalization, where a disconnection occurs between the acquisition of raw products, their transformation, and consumption. As the

10. For more information on the topic, including views from different fields, see Leeds (2017, 1979, 1980), Smith (2016), Tacoli, McGranahan, and Satterthwaite (2015), Elmqvist et al. (2013), Fox (2012); Fox (1977), Andreev (1989), and Lampard (1961).

population moves towards urban centers, a new need for food acquisition and consumption emerges. In a rural setting, strong bonds between the production of food and its transformation are visible. In general, the consumer knows the origin of the products and actively transforms them. With urbanization, a new demand appears for a greater quantity of food and premade meals. Therefore, the bond between the producer and the consumer is often severed, resulting in delocalization. In this case, supermarkets and fast food chains obtain food from anonymous workers in unknown contexts.

Thirdly, we have modernization in relation to commoditization. As we transition from using beasts of burden, human resources, and simple tools to fueled engines, mechanical advancements, and electronic devices, the modernization of our modes of production, transformation, and consumption continuously and permanently affects our way of life. This structural change is reflected in our food culture through commoditization, as we consume more and more manufactured foods instead of homemade meals (Kittler and Sucher 2008). Even with a renewed interest in self-made food, the food processing industry is bigger than ever, offering basic staples such as flour, pasta, or bread alongside finished meals like shepherd's pie, lasagna, or chicken risotto.

Fourthly, we experience globalization and consumerization. With technological advancements in communication, transportation, production, and transformation, the concept of globalization introduces a new reality, wherein interactions and spheres of influence are defined on a worldwide scale. This forces changes in the sociocultural dynamic as we redefine, reinforce, or search for our identity, values, and principles, our position in a world economy, and who we become as a society, a company, or an individual. This is reflected in food culture as consumerization—the passage from local production to mass-produced food. It allows the introduction of foreign products and the availability of nonseasonal food on our table, while also opening borders to integrate new specialties from different cultural backgrounds into our daily lives.

1.3 Food Culture in Prehistoric Context

Archaeology, like cultural and social anthropology, has always harbored a profound interest in the study of food and its relation to human societies. Remains of past consumption habits fill most archaeological sites with clues about the practices, strategies, and endeavors undertaken to provide the basic elements for the group, as well as for individual needs. Despite this fascination, archaeologists have traditionally focused on the economic, biological, and environmental aspects of food (Miracle and Milner 2002; Twiss 2012; Hastorf 2016). This is a legacy that took root at the dawn of modern archaeology.

During the 1920s and 1930s, a time when archaeology was otherwise mainly found in the fabrics of chronological charts, one of the driving forces within this research tradition, Vere Gordon Childe, initiated a research program based on the evolutionary nature of human societies by coining the term "revolutions" for major sociocultural shifts (Childe 1935; Flannery 1994, 109–110).

While many of his ideas were influenced by British economic archaeologists like Harold Peake and Herbert J. Fleure (1927b; 1927a), Childe distinguished himself from his contemporaries by integrating socioeconomic and political factors as vehicles for cultural change (Trigger 2006, 325). Starting with the passage from hunter-gatherers to farmers, food production and distribution became a prime element characterizing the "Neolithic Revolution" and an important vector for subsequent periods (Childe 1936, 59). He observed a shift in the human-nature relationship, as humans transitioned from being dependent on their environment to a form of cooperation with nature, ultimately self-producing their own food supply. Despite criticisms, Childe's model of the "Neolithic Revolution" represents a turning point in prehistoric food studies,[11] as he acknowledged, beyond the importance of technological innovations, the economic and political role of food in societal transformations.

During the same period, Grahame J. G. D. Clark, who opposed Childe's interpretative commitment to Marxism, nevertheless reinforced the importance of economy, particularly focusing on food acquisition and distribution, in archaeological study (Clark 1939, 151–188):

> One of the first things an archaeologist wants to establish is the economic basis of the people he is studying, above all the source of their food supply. […] When archaeologists of the future come to study the stratification of London, it may be that the rise of the tea-cup and the relative decline of the beer-bottle will be regarded as marking a decisive stage in the history of the British Empire.
>
> (Clark 1939, 152–153)

Through a materialist and functionalist approach, Clark argued in his seminal work *Archaeology and Society* that the role of archaeology is to enrich our understanding of society, its structure, and its organization, and that "material culture has meaning only in relation to society" (Clark 1939, 188). Acknowledging Childe's contribution to defining temporal and spatial boundaries for Europe's prehistoric cultures, Clark saw the necessity of studying, as a third dimension, "the life of the communities implied by these assemblages" (Clark 1976, 7). Yet, he objectively recognized that the lack of written sources and live witnesses hinders the study of prehistoric religious and social systems, whereas the economic

11. For more information, see Chapter 2.

basis, limited as it might be, remains more visible in the archaeological record and should serve as the starting point of any interpretation. With concrete evidence such as faunal and botanical remains filling most archaeological sites, food supply and subsistence strategies thus became a primary research focus in understanding the foundation of socioeconomic development.

This new dedication to an aspect of "life" behind the archaeological record led Clark to reassess the role of environmental factors in the formation of culture. According to Rowley-Conwy (2002, 1999), Clark became one of the first archaeologists to base his analyses and results on the bond between culture and nature, thereby reinforcing the idea that the environment, like the economy, is a driving force for cultural production and change (e.g. Clark 1953, 1939, 1940). Clark's ecological approach was well summarized in a chart (Figure 6), illustrating the interconnectivity between nature and culture and reinforcing his argument that food and subsistence strategies are vital components within prehistoric studies.

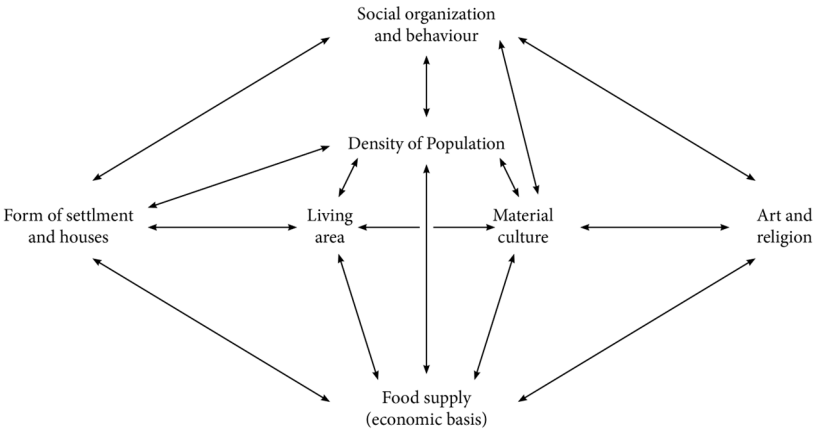

Figure 6. Reproduction of Clark's archaeological evidence that form the structure of a society (Clark 1939, 152).

Among the archaeologists of their time, Childe and Clark became influential figures in the formation of modern archaeology and established research trends favoring economic, ecological, and biological questions regarding the formation of society, the development of cultural groups, and, in our case, food studies. The arrival of processual and environmental archaeology in the 1970s and 1980s strengthened some of these research areas and led to research programs that subordinated such themes in relation to nutritional values, adaptation and subsistence strategies, cost-benefit analyses, behavioral ecology, and revisiting notions like acquisition, distribution, and transformation of food from the perspective of

optimal productivity (e.g. Binford and Binford 1968; Dennell 1976, 1979; Khare 1980; Smith and Winterhalder 1981; Keene 1983, 1985; LaBianca 1991; Hassan 2002; Gremillion 2011; Flannery 1969; Flannery and Benson 1968; Jochim 1976).

Their contributions to the archaeological discourse remain central to our current knowledge of the past. Research projects influenced by them, such as evolutionary and behavioral ecological analyses, continue to provide valuable insights into food habits during transformative and adaptive periods (e.g. Broughton 2002; Elston and Zeanah 2002; Waguespack and Surovell 2003; Byers and Broughton 2004; Bird and O'Connell 2006; Ethier et al. 2017). While proponents of New Archaeology advocate for investigating sociocultural behaviors, they have, in many respects, failed to integrate other facets of cultural development, such as agency theory, symbolism, kinship relations, emotions, ideological construction, or social practices beyond adaptiveness and optimal production. Such criticism of New Archaeology was well summarized by John Robb and, more recently, Christine A. Hastorf.

> If we understand how a prehistoric rock carvings were made technologically without knowing why it was made culturally, the effort is considered a failure, and symbolic archaeology is pronounced impossible. But if we understand how prehistoric people produced their food technology without knowing the cultural reasons why they produced what and how much they did in the way they did, the effort is considered a successful demonstration of economic archaeology; never mind that we have reduced a complex, value-laden set of social relations to a simple faunal inference.
>
> (Robb 1998, 331)

> It is ironic that archaeologists, who spend time every day thinking about procuring their own food through breakfast, hot drinks in the morning, lunches on the run or with friends, as well as having enough food in the house for dinner, often shift away from the rhythm and meaning of these core parts of the every day to focus on distant words, concepts, and especially long-term trends and expensive forces when they turn to their material concerning the past.
>
> (Hastorf 2016, xiii)

It is only in the last 30 years that a shift has occurred within archaeological research, whereby food's sociocultural factors have gained importance within the scientific narrative. At the end of the 1980s and the beginning of the 1990s, post-processualists and processualists-plus began integrating more and more new elements into their research questions, such as gender studies and sociocultural factors, insisting upon a better understanding of the meaning behind food choice and consumption. Without discarding the nutritional and economic aspects of

food, it became clear that archaeologists could no longer reduce the implications of food to these variables and must instead redefine their research avenues to accommodate societal, cultural, and individual notions associated with food, such as activities, meaning, choices, and its reintegration into its historical context (Gumerman 1997; Hamilakis 1999; Twiss 2012).

Additionally, the scale of research underwent changes, with a new focus on small-scale studies at the level of individuals, households, or sites. Without abandoning multi-regional and inter-site research, this change in scope enables a better understanding of sociocultural development beyond answers in terms of macroeconomics and survivability. It also allows dissociation from the cultural history program[12] that has dominated research agendas for too long, such as deriving cultural food identity from the simple equation of different diets or the sum of food activities among different social groups (Twiss 2012). Since then, archaeological work on food has continuously evolved, integrating an increasing number of different aspects of food studies.

12. Cultural History has exerted a profound influence not only on the development of archaeology, but also on the North American Boasian school of anthropology. Within this intellectual milieu, food studies played a significant role, both in shaping theoretical frameworks and in guiding methodological innovation. One key figure in this process was Clark Wissler, whose early work was instrumental in articulating the concept of cultural history within anthropology. Wissler's initial efforts focused on constructing a geographical classification of cultural groups based on their dietary patterns. His foundational principle rested on the observation that "the almost universal tendency among the several groups of mankind to specialize in some one kind of food which thereby becomes staple, or main support, to be supplemented by secondary foods when opportunity permits" (Wissler 1917, 7). Using this premise, Wissler proposed a classificatory system in which each cultural group was understood as having selected a primary food resource to which its subsistence strategy and, by extension, broader cultural practices were oriented. However, the model eventually encountered significant limitations. The attempt to delineate vast cultural areas based on staple food types led to overly broad generalizations that encompassed groups with otherwise disparate traditions. As a result, Wissler ultimately abandoned the strict application of this food-based geographical scheme. Nevertheless, food remained a central component in Wissler's methodological approach. It played a pivotal role in shaping his broader theoretical contributions, including the concepts of "trait complex," "culture type," and "cultural area." These ideas became foundational to cultural anthropology and helped lay the groundwork for subsequent regional and comparative analyses. Despite his contributions, Wissler's role in the history and epistemology of anthropological theory is often overlooked. Standard textbooks tend to foreground figures such as Franz Boas, Alfred Kroeber, Ruth Benedict, and Robert Lowie, while Wissler remains in the margins. Efforts to reintegrate him into the intellectual genealogy of anthropology—such as those by Freed and Freed (e.g. 1983)—have highlighted his lasting influence, particularly in the intersections between anthropology and archaeology. Indeed, Wissler's emphasis on the cultural significance of food and his commitment to systematic classification continue to resonate in contemporary scholarship.

The new focus on the *chaîne opératoire* of food, including the methods and techniques of gathering raw materials, food preparation, and consumption beyond economic interest (e.g. Ingold 2000; Jones 2001; Miracle and Milner 2002; Twiss 2012; Salque et al. 2012; Hastorf 2016), or the choices behind cultural food patterns (e.g. Bogaard 2004; Fairbairn and Weiss 2009; Gebauer and Price 1992; Harris 1996), has opened new avenues for understanding cultural development, societal changes, and identity. Symbolism has also experienced renewed interest and has become an important element in our knowledge of past food choices (e.g. Campbell 2000; Hastorf 2003b, a; Jones 1999, 2001; Politis and Saunders 2002). As discussed in Chapter 2.1, the symbolism and meaning carried by food are vital components of food culture and identity, and it took some time for archaeologists to acknowledge their importance in interpretation.

While archaeological food studies have embraced a greater variety of paths related to sociocultural questions over the past three decades, it is only recently that greater attention has been given to neighboring research fields, such as anthropology, to consolidate archaeological investigations (e.g. Gerritsen 2000; Gosden and Hather 2004; Hagen 1992, 1995; Hamilakis 1999, 1996; Martin 2007; Miracle and Milner 2002; Pearson 2003; Sterckx 2005; Van der Veen 2008, 2003; Wright 2004; Ivanová et al. 2018; Hastorf 2016). This realization was followed by efforts to establish methodologically interdisciplinary food studies.

Notably, one can refer to the article by Katheryn Twiss (2012), *The Archaeology of Food and Social Diversity*, wherein she provides an accurate account of research history and the diverse methodological issues facing archaeologists. She acknowledges that the lack of well-developed tools may hinder or limit research connected to materially poor eras, such as the Palaeolithic, or under-researched areas. This does not, however, excuse other branches of archaeology, and with the ever-growing advancement of technology, we may soon reach a greater understanding. Finally, she argued that we must refocus archaeological food studies toward the *chaîne opératoire*, clearly defining and reinforcing the link between material and social structures[13] while disentangling cultural patterns.

> As gender, ethnicity, ideology, economics, and politics all shape the ways in which individuals in any group produce, prepare, consume, and discard their food, so the food practises of any culture are essentially a palimpsest of influences. On the one hand, this confronts archaeologists with a challenge, as eliciting the impact of, for example, religion on diet requires disentangling these myriad influences. On

13. In this case, Twiss emphasized the role of social structure, given the well-documented link between communal organization and practices of cooking and feasting.

> the other hand, it offers researchers an opportunity to explore multiple facets of social identity through a single data set and to explore how different facets interact.
>
> (Twiss 2012, 380)

Two years prior to Twiss's article, Sven Isaksson (2010) argued similarly, proposing a methodology based on Clive Orton's (2000, 42) taphonomic transformation sequence in archaeological sampling and the concept of *chaîne opératoire*, which should be integrated into every archaeological excavation to acquire and preserve as much information as possible, thereby enabling future integration into interpretation (Figure 7).

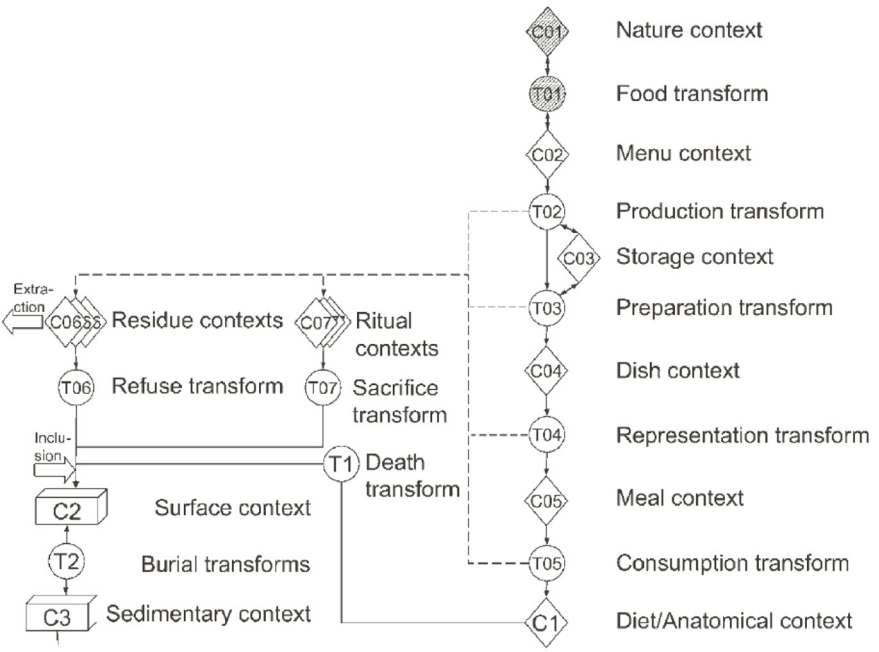

Figure 7. A model for the flow of food culture signals into deposition in an archaeological context (Isaksson 2010, 5).

From top to bottom, Isaksson begins with the principle that not all edible products available in a region are consumed—a choice made by the group, which is here defined in C02 as the menu. The author identifies these choices as a cognitive transformation (T01), and the role of the archaeologist is to identify the physical results of such a transformation. From T02 to T05, Isaksson describes the various stages of food preparation before consumption and integration into the overall dietary plan in C1. The left part of the chart addresses the various deposition contexts according to their stage in the *chaîne opératoire*. For example, C06 may correspond to lipid residue found in potsherds (see Chapter 4.1), while T2

may relate to isotopic analysis of one's diet. All in all, Isaksson's model presents a strong attempt at conceptualizing the dynamics of food culture within fieldwork. It represents a first step in raising awareness but also displays some flaws. The author himself acknowledged that the context of the deposition is vital and that random sampling can be problematic (Isaksson 2010, 8). Therefore, if we want samples from every context related to food, as shown in the left part of his chart, then secure and well-documented archaeological contexts should be prioritized.

This brings us to the applicability for previous excavations and the availability of such data. Since every excavation has its own methodology and research questions, missing information or a lack of samples often becomes a hindrance to future analyses and interpretations.[14] Isaksson has also admitted that his model is mainly based on residues found in differing contexts, hence the use of different analytical techniques with various degrees of detectability and accuracy. Thus, problems may arise in comparing and interpreting data.

Last but not least, the degree of comparability of such a model may encounter obstacles within intra-site, regional, or larger-scale studies. To be fully functional, all archaeological sites should adopt the model and act with consideration to ensure data compatibility. This will aid in avoiding interpretations of certain cultural behaviors being skewed due to the omission of certain samples or the discarding of what was presumed unnecessary (e.g. neglecting sampling burials in relation to food consumption, or partially—and in some cases completely—avoiding sieving). Despite its flaws, the present model offers a strong approach to archaeological excavations and should be integrated into fieldwork planning, or at least similar models should be considered. However, while the model has a more practical tone, it still follows a traditional approach and lacks deeper integration of cultural factors into archaeological food studies.

Recently, in *The Social Archaeology of Food: Thinking about Eating from Prehistory to the Present*, Hastorf (2016) provided a vital contribution to food and social archaeology, offering a rare attempt at deeply integrating anthropological, sociological, and psychological theories into archaeological food studies. Her main objective is to reintegrate archaeology within the broader narrative of food history and social theory, seeking "the materialities of meals, food tradition, and cuisine" (Hastorf 2016, 5). Without prescribing a specific theory or method of food archaeology, she aims to reconnect archaeological research with fundamental questions and to link materiality to the social world through one of our basic needs: food. To this end, she identifies five themes integral to archaeological inquiry: materiality, social agency, the senses, economy, and taste.

14. For zooarchaeological biases, see Chapter 3.2

First, the materiality of food represents the extension of society and social behaviors through artifacts. Food, being at the core of these notions, mirrors society and its transformations. It actively participates in the affirmation, choices, and will of being that characterize society and reflexively moves along social decisions. Such bonds can be seen in the production, use, and rejection of material culture and the value carried by it. For the archaeologist, it is the value of habits, becoming a vector to identity or tradition, that provides the first clue to group affiliation.

Following the same line of thought, the second aspect, social agency, involves food as a political and social agent, contextualized in the act of eating and its different iterations and outcomes. From a family evening meal to political or religious feasts, these actions become cultural as they are performed in a certain manner, implicate or reject certain elements, and create emotions that may ascend to reach collective memory. As social agents, political, economic, religious, or social powers resonate through food. If the individual is often invisible in the archaeological context, then demonstrations of power, tradition, or cultural manifestations are nonetheless within our grasp.

Third is the senses, defined by Hastorf (2016, 9) as the "sensory and physical engagement with food." This comprises the biological, sensorial, and emotional attachment to food. As we produce, transform, and eat certain foods, there is a clear response to identity and health. This aligns with Rozin's core flavor principle as discussed in Chapter 2.2.5.2. Some archaeologists have courageously ventured into such studies, like Andrew Sherratt (1995; 1991) who extensively examined alcohol and drugs within their cultural context. A need to explore such avenues remains and should not be underappreciated.

Fourth is cultural economics and how it constrains choices through costs, availability, or feasibility. This is also intrinsically linked to power and control, distribution, and acquisition. It returns to the choices of what is considered good and bad food, for whom food is deemed good, and for whom it is not. Among Hastorf's five themes, cultural economics has been the most applied by archaeologists. As we observed, this was often limited to caloric counts and optimal productivity, and should better acknowledge the cultural and social factors attached to economic interests.

Finally, the fifth theme is taste. Culturally influenced and part of the learning process, taste can often create borders, reaffirming individual and collective identity while also providing a window to others. There is a 'me,' an 'us,' and a 'them' in taste. What is desirable for one group may be disdained by another. Some will seek exoticism, an adventure into foreign palates, while others will reject such experiences to preserve or separate the self from the other. However, taste is more than just a matter of appreciation. As Hastorf (2016, 11) pointed

out, it is structured, historically developed, and passed down through generations. People attempt to recreate recipes from their grandmothers, and events are often bound to specific tastes (e.g. sugar during Halloween). Yet, like culture, taste is not fixed. It evolves as we evolve. Archaeologically, assessing the role of taste can be challenging, but not impossible. By studying the origin of produce, the extent of its use, the costs and benefits of its acquisition, its value, and its distribution, it is possible to provide preliminary answers regarding the preferences of a given group and the role taste plays in the construction of memory, tradition, social hierarchy, health, or cultural emancipation.

From these five themes, Hastorf ultimately advocates for food as a conduit to personal and group identity. We have already seen aspects from these themes, such as the construction of cultural memory and the significance of choices that reinforce her arguments, but she extends her discussion by integrating Bourdieu's concept of habitus.

> Material remains of past actions allow us to see group values and style preferences in production and consumption. The cultural embodied practices of habitus are key to getting closer to the past.
>
> (Hastorf 2016, 223)

The use of Bourdieu's habitus brings an interesting perspective on the formation of identity, as it implies that the various accumulated past experiences of an individual, often shared by people from similar backgrounds, shape their habitus. It is a social construct that influences, beyond simple habits, mental responses to new situations and guides one's general social attitude, morality, tastes, and preferences. It also shapes routines, feelings, categorizations, and intuitions. It is through the habitus that humans become social beings and find their place in society.

In his book, *La distinction*, Bourdieu (1979) observed that taste—i.e. appreciation of art, food, and clothing—is influenced by the habitus of individuals and, in this case, primarily by their positions within the social class hierarchy. When discussing food, Bourdieu again regards social class as a major factor. Depending on one's position in society, one will have different perceptions and understandings of food. Food encompasses a vast array of notions ranging from health, beauty, and hedonism to fuel for the body, survival, or mere necessity. Lower classes, therefore, favor affordable and filling staples, whereas upper classes seek quality, health benefits, flavors, and diversity. This does not mean that people with lower incomes do not seek healthy products, but rather that their choices are limited by their economic constraints. Beyond financial limitations, other factors such as education and social networks contribute to one's habitus regarding food. By analyzing these combined factors, we can better understand the social

behavior of an individual or a group. This is so deeply embedded in each individual that habitus is often mistaken as something natural rather than a culturally created phenomenon.

For Hastorf, past habitus can be observed through the materialization of traditions, memory cultures, symbolism, and cultural contacts. By investigating the "*chaîne opératoire* of daily practice" at three different social scales—i.e. nation, community, and family—archaeologists will have a better opportunity to examine shared practices and the formation of group identities (Hastorf 2017, 224).

> Food traditions are materialized through habitual bodily techniques and remembered sensory clues that reengage us in our identities. These bodily practices encode habit-memory that can become subtlety specific, honing cultural boundaries through materialized differences, even between neighbors. […] It our job to identity these differences between good and bad "stuff" in the archaeological record. Recognizing and differentiating cuisines constructed of prescribed material expressions is an archaeological "portkey" to past memories and membership.
>
> (Hastorf 2016, 225)

In her search for an individual's identity, it is less about focusing on a single person and their personal journey in food preferences and choices, and more about the general aspects of individuals—the personal boundaries we establish, the body that consumes, and differences based on gender, age, and family ties. According to Hastorf, archaeologists must acknowledge the differences in food habits across various age groups, genders, and family structures. Only then can we hope to understand the individual food habitus. For example, as stable isotope analysis becomes increasingly accurate, we can explore these questions in greater detail, particularly regarding changes in an individual's diet over time. More traditional archaeological methods may also be employed, with contextualization, iconography, and ethnoarchaeology further aiding this endeavor.

Food studies in archaeology have a long history, stemming from the discipline's very roots, and attempting to retrace its entire history and epistemological development is a monumental task that cannot be fully covered in this work. However, the present effort to outline certain tendencies within research history and the new directions proposed by various scholars serves as the foundation guiding this inquiry. With a renewed interest in anthropological and sociological food theories, archaeology is increasingly incorporating the sociocultural relevance of food into its research, thereby contributing to the broader narrative of food studies.

1.4 Between Anthropology and Archaeology: In Search of a Model

After reviewing anthropological and archaeological approaches to food studies, the present work is confronted by two main questions: a) how and to what extent can we integrate an anthropological approach into prehistorical research, and b) which model should we follow? Hastorf (2016, 309) wrote that the goal of her book was neither to push a clear path toward food theory in archaeology nor to impose the best methodologies, arguing that such matters should be left open to engage researchers in growing the field of food studies. The present work will follow such a philosophy and will neither seek a definitive way of studying food culture within an Early Neolithic context—since such a thing does not exist—nor create a new theoretical framework that should be universally applied to archaeological contexts.

In this case, Douglas offers additional insights to consider. First, in evaluating small-scale or microscale studies—an approach increasingly applied within food archaeology—this methodology strengthens our comprehension of group formation and cultural development while also enriching intra-site, regional, and interregional studies. Despite the influence of yearly cycles and seasonal changes, archaeological research addressing various cycles (i.e. daily, weekly, yearly, life cycle) and the significance of meals remains relatively rare. Assigning meaning and symbolism to meals requires moving beyond simple ritualistic or religious responses to explore cultural behavior, identity markers, and a sense of belonging within a group or society. However, contrary to Lévi-Strauss and Douglas, the search for universalism is not the objective of this work. Rather, it aims to reintegrate these elements into their historical context. Since archaeology is inherently a materialist discipline—not only in theory but also in the tangible evidence upon which it is based—idealist studies can be difficult to implement and accept. It is crucial to remember that while we work with material evidence, our true subject of study is human development, interaction, and history—a domain rich with emotions, desires, dreams, and unique perspectives on the surrounding world.

This may explain why a stronger connection between Harris' cultural materialism and archaeology can be observed compared to anthropological structuralism. Harris himself extensively utilized archaeological evidence. Translating Harris' notions into an archaeological methodology is relatively straightforward, and one could argue that traces of such an approach can be found in the works of Childe, Clark, and the processualists of the 1960s and 1970s. Two key aspects of his methodology will be considered here. First, the distinction between etic and emic perspectives. Initially, Harris viewed them as equally important; however, he later prioritized the etic approach, considering it a more materialist and, in his view, a more scientific means of resolving cultural complexities. There is

validity to this perspective, as individuals are not always consciously aware of their own behaviors and the underlying structures of their culture. Conversely, the observer may also be influenced or corrupted by their own habitus, as Bourdieu would suggest.

The challenge with archaeology is that the observee has no direct voice. They cannot communicate with the archaeologist to explain their worldview or the motivations behind their actions. Nevertheless, they do leave behind an indirect voice—a material residue of past choices and behaviors. If archaeologists, like Harris, favor an etic approach, this preference largely stems from the nature of the available evidence. The critical question, then, is how to establish a balance between etic and emic interpretations.

The second aspect is the relationship between infrastructure, structure, and superstructure (see Figure 3). This concept may be particularly appealing to archaeologists as it provides a clear framework for interpreting societies. However, the primary issue lies in its foundational premise, wherein Harris asserts that infrastructure exerts the greatest influence on structure, while superstructure is often considered only as a last resort, belonging more to the realm of idealism. While this perspective has its merits, it also contains inherent pitfalls and may lead to a form of techno-ecological determinism—an impasse that has long been recognized in the field of food archaeology.

Without disregarding the importance of technological and environmental contexts, it is crucial to acknowledge that structure and superstructure can also play a significant role in decision-making, reverberating through cultural and societal constructs. This influence becomes even more pronounced during periods of major transformation. The advent of farming provides a compelling example, wherein existing infrastructures were, in some instances, profoundly disrupted by the emergence of new structures and superstructures. These shifts influenced domestic arrangements, economic systems, religious frameworks, and sociocultural organizations, ultimately redefining both the mode of production and the mode of reproduction.[15]

There are, however, additional orientations to consider. For instance, from an idealist perspective, cultural materialists are often criticized for their failure to fully integrate agency theories, historicity, and contextualization beyond economic and political aspects. More significantly, while Harris aims to synthesize idealism and materialism, his approach partially dismisses idealist reasoning.

15. By 'mode of reproduction,' population control is implied. Archaeologists have since provided ample evidence of a demographic boom following the advent of farming. In this case, it is not the demographic increase that drives the shift in food acquisition, but rather the shift in subsistence strategies that leads to demographic growth.

This raises an important question: Can the infrastructure-structure-superstructure model effectively explore culture, and, more specifically, food culture? On this topic, the philosopher, sociologist, and former research director at the CNRS, Edgar Morin, identified a fundamental contradiction in studying culture through the framework of superstructure and infrastructure.

> Ainsi la culture n'est ni « superstructure » ni « infrastructure », ces termes étant impropres dans une organisation récursive où ce qui est produit et généré devient producteur et générateur de ce qui le produit ou le génère. Culture et société sont en relation génératrice mutuelle, et dans cette relation n'oublions pas les interactions entre individus qui sont eux-même porteurs/transmetteurs de culture; ces interactions régénèrent la société, laquelle regénère la culture.
>
> (Morin 1991, 17)

In this case, Morin sided with the idealists and explained that culture is organized through the human mind and language and is generated and transmitted by human interactions. However, rejecting Harris' model in such a way inevitably reduces cultural phenomena to simple human interactions and disregards the implications of superstructure and infrastructure in the transformative aspects of culture.

While ecological determinism must be carefully considered, we cannot deny, for example, the influence of the environment on the mode of production or the creation of sociocultural traits and institutions such as sports or arts (e.g. ice hockey for Canadians). In the case of the Canadian obsession with ice hockey, it is partly an environmental influence on the superstructure, which, in turn, has shaped cultural behavior and human interactions. Archaeologically, Harris' model can serve as an entry point for understanding cultural changes, but the idealist perspective must also be integrated. To examine the transition from hunter-gatherers to farmers and the cultural transformations that occurred during this period, one must provide answers from both perspectives; adhering strictly to one or the other risks leading to an unwanted determinism. Ultimately, both idealism and materialism have become central to food studies. Their implications for prehistorical research, however, remain unbalanced, which has partly fueled criticism from scholars like Hastorf and Katheryn C. Twiss.

Besides combining both idealist and materialist approaches, this book will focus primarily on the omnivore's paradox, the food choice model, and Kittler and Sucher's four models of food studies.

First, the omnivore's paradox, while originally developed to explain the tension between conservatism and the search for novelty in food consumption, resonates strongly with the core issues surrounding the transition to a farming

economy. As we will see in Chapter 4, Fischler's concept provides as many answers as it does new questions. For example, why did people start drinking milk, or why did some groups resist transitioning to farming? These are key questions at the heart of the omnivore's paradox and will be discussed in detail later. Beyond this, the omnivore's paradox naturally integrates with the conceptualization of food choices. When Hastorf (2016, 24–25) presents the omnivore's paradox, she briefly mentions Fischler and focuses primarily on food choices and flavor principles. The connection between these concepts is undeniable and will help to elucidate the sociocultural dynamism of the Early Neolithic in Southeast Europe.

Second, regarding the food choice model introduced in Chapter 1.2.4, it is important to note that this model was originally designed to analyze choices made by individuals rather than groups. In prehistorical archaeology, studying individuals in isolation is too restrictive and, moreover, is not the primary focus of this study. Therefore, how can we adapt such a framework to our research objectives? In fact, this model already incorporates key aspects, including Douglas's cycles and Harris' social structures, that are essential for understanding why certain foods were chosen over others. The individual-centric approach can be readily extended to the group level. What is categorized as a personal factor still includes critical elements such as psychological and physiological influences that contribute to sociocultural decisions. For instance, Chapter 4.2 will examine such a dynamic in the context of the increasing interest in milk consumption in the northern Balkans and the Carpathian Basin.

Third, Kittler and Sucher's four models of food studies offer, to varying degrees, useful tools for examining food culture in a prehistoric context. The core and complementary foods model provides a framework for evaluating preferred foods and menu choices. Archaeologically, recurrent food behaviors can indicate such choices to a certain extent. While peripheral and secondary foods may be difficult to identify, core and complementary foods could potentially be discerned. Regarding flavor principles, these reach archaeologists in multiple ways; aside from the rare evidence of spices, this model acknowledges food processing (i.e. preparation, cooking, serving, and preservation) as a method of enhancing flavor. From this perspective, it is possible to analyze different techniques and tools used in food preparation and infer certain preferences. This approach aligns, to some extent, with what Twiss and Isaksson describe as the *chaîne opératoire*. Meal patterns and cycles, on the other hand, may encounter the limits of archaeological evidence. The most viable approach is to follow Douglas' cycles by examining seasonal food exploitation or identifying special events such as feasting; attempting to pinpoint daily meal patterns in a prehistoric context may prove impossible. Lastly, the developmental perspective of food culture effectively integrates research on transformative periods.

With the emergence of a farming economy, this model offers a way to examine societal and cultural transformations in parallel. As previously discussed, the objective is not to establish a hierarchy of causal relationships between societal and cultural changes but rather to analyze both equally and identify simultaneous transformations. However, Kittler and Sucher's example primarily targets globalization—a radical transformation in communication and technological advancements that facilitates economic, political, sociocultural, and scientific interactions on a global scale—a phenomenon unknown to prehistoric populations.

Therefore, the developmental perspective of food culture must be adapted to a smaller scale within the archaeological record by investigating clusters of sites, regions, or interregional interactions to a certain extent. Beyond this scope, the risks of overinterpretation and overgeneralization become significant concerns. In Chapter 3, such challenges arise in defining what constitutes the Neolithic or the neolithization process and whether these concepts can be universally applied or must be redefined regionally.

1.5 Research Aims and Questions

In the title of his article *Romans, Barbarians, Christians: The Dawn of European Food Culture*, the celebrated food historian Massimo Montanari (2000, 165–167) established the roots of modern European food habits in the Roman period. This work aims to go beyond these assumptions and explore whether the dawn of European food culture can actually be found during the earliest phase of the Neolithic, a period of great transformations that resulted in biological, societal, economic, political, and cultural impacts that continue to shape societies today. From the perspective of food production and technological advancements in processing, the passage from a hunting and gathering economy to one centered on farming constitutes a sociocultural conundrum that continues to puzzle researchers. It also reconfigured the rhythms of daily life—seasonality, storage, and commensality—and generated new symbolic boundaries articulated through cuisine.

As previously mentioned, the archaeological perspective on this question has traditionally focused on economic and ecological aspects, whereas key elements of food culture during this transformative period have only recently garnered significant attention. Building on recent advancements in prehistoric food studies—and synthesizing zooarchaeological evidence, lipid residue and isotope analyses, as well as comparative social theory to distinguish technological constraints from cultural preference—this book brings these strands together to answer three fundamental questions:

1. Considering the anthropological perspectives discussed, to what degree did the arrival of a farming economy, and, more specifically, the consumption of animal products, shape the food culture landscape in Southeast Europe as exemplified by the Starčevo-Körös culture?
2. To what extent did food culture influence the economic and technological development of food production among these populations?
3. In what ways should food culture be integrated as a fundamental component of archaeological research