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FARMING, HUNTING, AND FISHING IN THE OLMEC WORLD

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AGRICULTURAL RISK AND INTENSIFICATION ALONG MEXICO’S SOUTHERN GULF COAST: AN INTRODUCTION

Chapter 1

Chiefdoms developed along the southern Mexican Gulf Coast during the Early, Middle, Late, and Terminal Formative periods (1400–1000 BC, 1000–400 BC, 400 BC–AD 100, and AD 100–300). Scholars interested in regional political economy for this area have long relied on archaeological data from three large sites: San Lorenzo, La Venta, and Tres Zapotes. This focus on large centers to the exclusion of smaller, outlying villages and hamlets has limited our understanding of regional political development. Scholars have also relied heavily on assumptions about regional subsistence economy, for example, that agricultural tribute was used to fund labor projects and feed the elite. Such assumptions, however, are based on little actual subsistence data. We can begin to elucidate the nature and development of Formative agriculture by shifting our attention to rural villages and hamlets and to issues of basic subsistence reconstruction.

Here I consider agricultural intensification and risk in the tropical lowlands of the Olmec hinterland during a period of political formation. To address the relationship between the development of agriculture and the emergence of complex political formations (e.g., chiefdoms and states), I consider subsistence data from two sites spanning the Formative period: La Joya and Bezuapan, located in the Sierra de los Tuxtlas approximately 100 km from the lowland Olmec centers.

The Tuxtla region is well suited for exploring this relationship. Settlement data from the region indicate that Early Formative groups were egalitarian and semi-sedentary (Arnold 2000; McCormack 2001; Santley et al. 1997). By the Middle Formative period, people had settled into more permanent villages, maintaining a relatively egalitarian social organization (Arnold 2000; McCormack 2001; Santley et al. 1997). The subsequent Late and Terminal Formative periods were marked by the emergence of a regional site hierarchy and increasing social differentiation, though the manifestation of social inequality in the Tuxtla was not as pronounced as among lowland Olmec groups (Santley et al. 1997; Stark
and Arnold 1997a). Thus, analysis of the available subsistence data makes it possible to consider farming strategies as they developed alongside sedentism and chiefdom formation.

In order to understand an agricultural system, we need to understand the subsistence system as a whole. This requires that we answer basic questions regarding local and regional subsistence practices. What foods were people eating? To what extent did people rely on domesticated versus wild foods and how did this vary through time? Did people narrow or diversify their resource base through time? How varied were subsistence practices through time and across space? How predictable were plant and animal resources throughout the region? How did volcanic eruptions affect the distribution and predictability of these resources? Once these basic questions are answered, we can begin to address more complex questions linking subsistence to regional politics. What is the nature of the Formative subsistence system along the southern Gulf Coast of Mexico? Did Formative villagers intensify their agricultural systems? If so, what was the timing of agricultural intensification relative to political development in the region? What strategies of intensification did they choose and what were the consequences of these strategies for subsistence economy, household organization, and local and regional political development?

How did regional environmental catastrophe in the form of volcanic eruptions and ashfall affect the way Formative people made a living? Addressing these questions requires multiple lines of evidence that are directly relevant to the reconstruction of subsistence economy. I consider archaeobotanical, zooarchaeological, and stable carbon and nitrogen isotopic data from La Joya and Bezuapan. Although these types of subsistence data are rarely considered together in the general literature, they bear directly on the research questions, as they represent the direct residues of past subsistence economies. The integration of these three kinds of subsistence data allows for a fuller understanding of Formative subsistence than would otherwise be possible.

Before I consider these data, it is important to provide the background necessary for understanding and interpreting them. Chapter 2 presents some theoretical background on the origins of agriculture. In covering this monumental topic, I focus on four major issues: the process of early plant domestication, the connection between incipient agriculture and early social complexity, the process of agricultural intensification, and strategies of risk management. Although my case study does not directly address domestication, many of the arguments put forth to explain the process of agricultural intensification have their roots in discussions of the initial process of plant domestication.

Chapter 3 presents an overview of Olmec research as it pertains to farming and political complexity. The history of the Olmec problem is particularly relevant because previous studies have set the stage for the research questions pursued here. Few subsistence studies have been conducted in the region, which has long hampered our understanding of Gulf Formative agricultural systems—this is one reason why the data presented here are so crucial. Chapter 3 also provides the environmental and archaeological background for the Tuxtlas, the region in which the study sites are located. This chapter constructs a foundation for understanding subsistence adaptations in the Tuxtlas, a foundation that is necessary for proper interpretation of the archaeological data.

The second part of the book involves the presentation and analysis of the data. These are the chapters in which I discuss specific archaeological correlates for answering the larger questions posed above. Chapters 4 and 5 consider the archaeobotanical and zooarchaeological assemblages, respectively. Both chapters consider temporal trends in these data, in addition to dealing with preservation and recovery biases, field recovery techniques, field and laboratory sampling, laboratory procedures and identification, and quantification for the subsistence data. Chapter 6 pre-
sents stable carbon and nitrogen isotopes for human, domestic dog, and white-tailed deer skeletal specimens. Indeed, it is only through the analysis of multiple kinds of subsistence data that we can begin to truly understand prehistoric systems of agriculture. Finally, in Chapter 7 I tie the analyses together and relate them to the larger research questions stated above.

The relationship between agricultural intensification and the emergence of complex political formations (e.g., chiefdoms and states) has been an enduring topic in archaeological research. Indeed, this topic continues to be prevalent in the literature, the number of theories exceeded only by the questions that remain. Though not all scholars agree about the timing of agriculture relative to the emergence of chiefdoms and states, we do know that the adoption and intensification of agriculture varied with the emergence of political complexity in different ways, at different times, and in different places. Such a complex topic cannot be adequately explained by a single theoretical framework. This is not to say that any particular case of incipient agriculture in the context of political development is irrelevant to any other. Rather, we are dealing with a set of similar processes that are structured by specific sets of historical events.

Theories linking agriculture to the emergence of chiefdoms and states have been more fully developed for arid regions, for which explanations of environmental and social circumscription are more easily invoked. Presumably, a limited resource base coupled with population increase resulted in an imbalance between people and their food supply, requiring a shift to food production. While notions of environmental and social circumscription have been criticized by some as deterministic (McGuire 1992; Orlove 1980; Paynter 1989; Trigger 1981), they have led archaeologists to collect baseline data on local and regional ecology and have provided concepts that can be measured archaeologically, such as population growth and carrying capacity (Flannery 1986; Sanders et al. 1979; Spencer 1982). Circumscription explanations have been less developed for tropical regions, where resources are more diverse and plentiful—indeed, this abundance of resources in tropical environments makes it difficult to envision an imbalance between people and food. For this reason, the notion of circumscription may be less useful for understanding the range of processes at work in tropical environments.