Foreword

This monograph is based on a PhD dissertation I successfully completed in the Department of Anthropology, Tulane University, in 2015. It currently represents the only synthesis of excavations conducted by the Belize Valley Archaeological Project at the ancient Maya centre Cahal Pech, Belize, between 2004 and 2009, as well as the most complete report of Middle Preclassic artefacts recovered by that project. Research on the Middle Preclassic Maya has accelerated during the intervening years between the defence of my dissertation and the publication of this work – including fieldwork conducted at Cahal Pech itself – and I have endeavoured to update the text to include as many recently published discoveries as possible. Many of these newer findings are indeed exciting, and following the progress of research in this specialized field of Maya archaeology has forced me to critically reconsider my own earlier work. This reflection has not, however, led me to doubt my interpretations or the conclusions I drew from them all those years ago; rather, it has produced an increasing conviction that more thorough reporting of data – such as I hope to achieve here – is necessary to evaluate theories on the origins of complex Maya societies. I remain convinced that the dynamics of interpersonal relationships, partially discoverable by archaeologists through the study of material remains, hold an important key to understanding the rise of Maya civilization, and that continued focus in this area will only reward archaeologists. It is my hope that this monograph will contribute to the field in this regard.

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Introduction

Interpersonal relationships connect household groups and communities into social interaction networks that characterize all human societies. Aspects of these relationships can be reconstructed for ancient communities by examining materials consumption patterns in the archaeological record, which provides a window into the social structure of interactions and their relationship to social organization. This book examines the development of social complexity during the Middle Preclassic period (c. 900 – 350 B.C.) at Cahal Pech, Belize, through an analysis of socioeconomic network participation and exchange relationships in this early lowland Maya community. It presents an analysis of depositional patterns across multiple artefact categories that suggests existing models of Middle Preclassic social organization do not adequately explain the variability observed in the data. I develop an alternate theoretical framework to account for this variability, and I interpret patterns of architectural investment and artefact consumption from the perspective of socioeconomic network participation and its impact on community development.[1]

A Brief Introduction to the Middle Preclassic in the Maya Lowlands

Archaeologists increasingly view the Middle Preclassic as a pivotal period in the development of lowland Maya civilization, although this was not the case throughout much of the twentieth century. Comparisons between modest-sized Middle Preclassic settlements distributed across the Maya Lowlands and the architecturally impressive remains outside the area led researchers to downplay the significance of lowland Maya cultural developments in the broader Mesoamerican milieu (e.g., Lowe 1977:198). Middle Preclassic communities were viewed as pioneering agricultural villages structured around tribal affiliations (Ball 1977b), which were thought to be largely self-sufficient despite the occasional acquisition of materials through long-distance exchange. Hints of more complex ritual behaviour and social organization were occasionally recognized (e.g., Culbert 1977:42; Smith 1982:118), but too little was known about Middle Preclassic occupations to overturn the predominant image of simple farming societies.

Perceptions of Middle Preclassic communities changed after institutionalized rulership, large-scale construction projects, and political integration at the regional scale became associated with Late Preclassic cultural developments (e.g., Freidel and Schele 1988; Hansen 2005; Pendergast 1981). A renewed focus on Middle Preclassic occupations, aimed toward understanding how the aforementioned hallmarks of later Maya civilization emerged, has been rewarded by a mounting body of data that suggests complex social relationships have deep roots in communities across the Maya Lowlands. The large masonry platforms at Nakbe (Hansen 1998; Hansen et al. 2018), early public architecture and ritual caches at Cival and Ceibal (Estrada-Belli 2011; Inomata 2017b; Inomata et al. 2013, 2017), plaster architectural masks at Blackman Eddy (Brown 2003; Garber et al. 2004), and similar remains at many other sites provide evidence for developing complexity in Middle Preclassic communities. This complexity has been interpreted as the emergence of social ranking (e.g., Awe 1992:354; Clark and Cheetham 2002), which is seen as a necessary precursor to the development of hierarchically organized states.

Recent research has also demonstrated longer occupation histories at sites across the Maya Lowlands. Settlements pre-dating the widespread appearance of late Middle Preclassic Mamom-sphere pottery were initially thought to comprise a few, sparsely distributed hamlets along a handful of river valleys linking inland areas to coasts (e.g., Puleston and Puleston 1971). Pre-Mamom pottery has been identified at many sites across the northern and southern lowlands during the past four decades (e.g., Andrews V et al. 2018; Awe 1992; Cheetham 2005; Kosakowsky 1987), and many early communities grew to become large, complex centres when Mamom-sphere pottery appeared. One such community was Cahal Pech, whose long history of occupation presents an ideal laboratory for studying social development in the Middle Preclassic.

Cahal Pech, Where We Lay Our Scene

The ruins of Classic-period Cahal Pech occupy a small limestone hilltop overlooking the modern town of San Ignacio, Cayo District, Belize. This hill is located near the head of navigation for the Belize River – the confluence of the Mopan and Macal Rivers – which drain areas of eastern Petén, Guatemala, and Maya Mountains, respectively. Classic-period Cahal Pech was a medium-sized centre (Figure 1.1) that included elite residences and administrative buildings, temple pyramids containing elite tombs, two ballcourts, and a number of variously open

[1] I use the term 'consumption' to mean practices of acquisition, use, and discard or deliberate deposition of materials in the archaeological record. Consumption is therefore shorthand for a series of linked practices with the same ultimate result: materials entering the archaeological contexts where they are later discovered. I prefer this term to 'deposition' or 'discard' because of its connotations of acquisition and use, which are both important practices linked to exchange relationships.

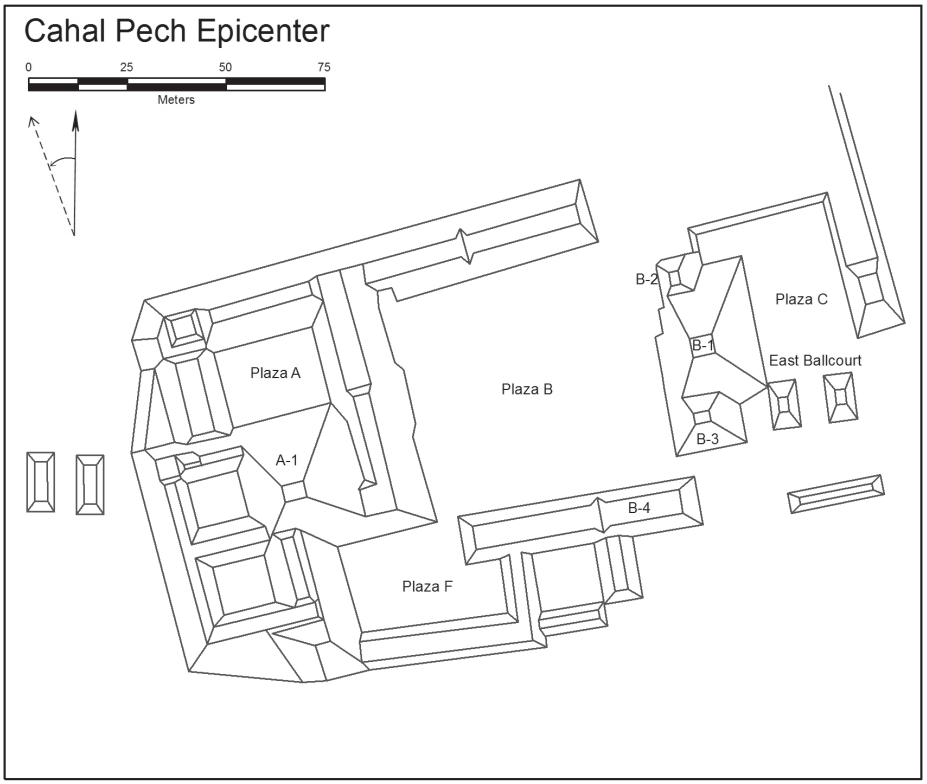

Figure 1.1: Rectified plan of the architectural epicentre of Cahal Pech, showing major plazas and structures mentioned in the text. The solid north arrow represents magnetic north, and the dashed arrow grid north; this convention is used throughout for site maps.

or restricted plazas and courtyards (Awe 1992). It was neither the largest nor the most ornate centre in the Belize Valley during Classic times, but substantial investment in architecture and several free-standing monuments indicate it occupied a position of some importance in the regional settlement system.

Cahal Pech was settled during the terminal Early Preclassic (c. 1100/1000 B.C.) and appears to have been abandoned sometime during the Terminal Classic (c. A.D. 900/1000), although some evidence for reoccupation has been sporadically encountered in the site epicentre. This approximately 2000-year period represents one of the longest documented histories of continuous occupation in the Belize Valley, and it attests to the important position Cahal Pech maintained on the physical and social landscape through generations. Extensive testing in the epicentre and peripheral groups by Jaime Awe (1992) revealed the deep roots of the Cahal Pech community in the Cunil phase, when inhabitants used a previously unknown pre-Mamom ceramic complex (Cunil) and traded in exotic items such as obsidian and marine shell. Awe's (1992:133-143) excavations also revealed a continuous construction sequence within Str. B-4 that spanned the initial occupation of the epicentre through the Late Classic, with construction episodes through the duration of the Middle Preclassic. Awe (1992) and others (Powis and Cheetham 2007) have interpreted this sequence as the development of an early elite residence into a non-domestic structure or shrine during the Middle Preclassic, and eventually into a temple during later periods.

The discovery of substantial Preclassic occupation and construction at Cahal Pech initiated almost thirty years of near-continuous fieldwork, which included several projects focused on the earliest phases of settlement (see chapter two for summary descriptions). Research at Cahal Pech by the Belize Valley Archaeological Project (BVAP) – co-directed by James Garber and Jaime Awe from 2004 to 2009 – produced the data presented and synthesized here. BVAP excavations focused on architecture and associated deposits beneath Plaza B, where earlier projects discovered extensive Middle Preclassic occupation remains (Cheetham 1996). We employed trenches, test pits, and horizontal exposures to examine a cross section of the early settlement and intensively investigate selected structures, uncovering about 135 m^2 of Middle Preclassic deposits and generating a large architectural and artefactual dataset.

Methodological Framework

I employed several methods to achieve this synthesis and provide a detailed report of the analysed materials. Descriptions of structural remains and hypothetical reconstructions of the built environment permitted the examination of architectural development and expansion sequences. Architectural analyses included descriptions of building materials and stratigraphy, estimates of platform size and shape, and site layout reconstruction. These analyses also defined the contexts for comparing artefact consumption patterns associated with different architectural groups.

I provide detailed descriptions of artefacts to expand the comparative database of Middle Preclassic material culture. Discussions of potential resource areas for different materials derive from an extensive search of the geological literature, and I analyse these materials to identify variability among functionally and stylistically similar goods. My analyses focused on objects of stone, bone and shell, fired clay, and pottery; when possible, I identified materials and attributed them to geographic source zones. Macroscopic analysis of ceramic fabrics revealed variability in the pottery assemblage that may be attributable to differences in technology and/or provenance, although the cause of this variability awaits discovery through microscopic analysis (e.g., Angelini 1998; Day et al. 2006; Howie 2012; Shepard 1956).

I combined spatial and contextual analyses to examine the distributions of multiple material categories and determine artefact consumption patterns associated with different social groups. Materials linked to specific resource zones demonstrate connections between groups that obtained them and people living outside the local community, and I compared these connections across different groups. When materials could not be linked to specific areas – for example, with macroscopically identified ceramic fabrics – the diversity present in different assemblages provided a relative measure of different connections. I viewed artefact consumption patterns as proxies for broader social relationships that included the exchange of materials, and I compared differences in consumption to conceptualize the network connections that channelled different materials to groups at Cahal Pech. Connections to people outside the community supplied sources of new information to certain groups that may not have been widely shared, and the position of groups within the network created the potential for increased access to social and material capital.

Structure of this Monograph

The study begins by reviewing early Mesoamerican culture history, starting with the first settlement of the area and concluding with a brief summary of Late Preclassic cultural florescence. I examine reconstructions of social organization and interactions during the Early Formative/ Preclassic and describe Middle Preclassic developments across the Maya Lowlands in detail. This background information contextualizes the Cahal Pech study in the broader body of Preclassic research and introduces a discussion of interregional interactions developed in later chapters. The second half of chapter two is devoted to a summary of previous research at Cahal Pech and the findings relevant to this study.

The beginning of chapter three reviews current theoretical models for the origins of social complexity in the Maya Lowlands and discusses their strengths and weaknesses. I then develop a new model of network structure and participation to account for variability in the material record that is not well-explained by current theory. This model explicitly links small-world network structure, which derives from graph theory, to anthropological concepts of identity, social personae, and exchange relationships. I propose several ways that participation in small-world exchange networks could affect social relationships and lead to increasingly complex interconnections between social groups and communities. I further suggest that advantageously positioned 'brokers' in network clusters could use their diverse connections to acquire increasingly unequal shares of social capital and material goods.

Chapter four details the analytical methods briefly described above. It includes descriptions of BVAP excavations and the analytical procedures employed by the project, as well as the independent mapping, spatial, contextual, and artefact analyses I completed. Chapter four also lays out the bridging arguments used to link variability in artefact consumption patterns to differences in network connections.

Descriptions of the natural environment are the subject of chapter five. These include a wide-ranging discussion of geological resources in Belize and the greater Maya area as well as a description of the environs around Cahal Pech. This chapter provides a reference for later discussions of materials procurement and resource zones, and it defines the baseline of local resources available to the Middle Preclassic inhabitants of Cahal Pech. The geological descriptions also provide a basis for future microscopic studies of pottery provenance (i.e., origin of manufacture).

Chapter six provides a detailed description of the architectural sequences uncovered beneath Plaza B. It provides details on platform size, shape, location, and orientation, and it describes the building materials used in different structures. Relative dates for platforms are determined through ceramic association and stratigraphic position, and I use these data to create architectural phases linking construction sequences in different areas of Plaza B.

Chapters seven and eight describe the stone, bone, and shell artefacts recovered from Plaza B deposits. Artefacts are classified by functional, stylistic, and material attributes, and are linked to resource zones when possible. Contextual analyses examine patterns of artefact consumption and deposition, and comparisons with contemporaneous assemblages relate these patterns to shared practices outside the community. I pay particular attention to marine shell ornament production and its relationship to interregional exchange networks.

The first half of chapter nine resembles the preceding two chapters and describes artefacts made from fired clay. I place considerable emphasis on a discussion of anthropomorphic figurine fragments and their possible relationships to household and community ritual in this section. The second half of the chapter presents the pottery assemblages and is divided into stylistic and macroscopic fabric analysis sections. I provide functional and stylistic descriptions by architectural phase from a minimum number of identifiable vessels framework, and ceramic

fabric descriptions follow a similar format. I document variability among ceramic fabrics discernible at the macroscopic and low-magnification levels in the latter section.

Chapter ten presents a spatial analysis of artefact distributions across all analysed materials. I begin this chapter by defining different social groups ('consumer groups') thought to be represented by architectural remains and associated refuse deposits. I quantitatively describe artefact distributions and use these to assess the functions of different architectural groups and the consumption patterns associated with each group. I relate artefact distribution patterns to differences in architectural investment associated with each group and suggest a linkage between these two realms of practice.

I discuss and interpret the aforementioned patterns using the small-world network model in chapter eleven. I link archaeological evidence to aspects of network structure and suggest that small-world networks characterized exchange relationships at Cahal Pech from the earliest days of settlement. I identify different groups that potentially acted as brokers for new information and materials entering the system, and I forward this model as an appropriate alternative to explain the development of social complexity in light of variability in the dataset. The network analysis is expanded to the regional and interregional scales, where I present evidence that the Cahal Pech community potentially acted as a broker in the regional cluster of Belize Valley sites. I conclude that participation in a well-developed, interregional small-world network structured the development of social complexity in the Belize Valley and possibly elsewhere in the Maya Lowlands.

The concluding chapter contains a brief summary of the network model and its implications, an outline of the contributions this study makes to our understanding of Middle Preclassic society, and directions for future research. I conclude with an analogy between the Middle Preclassic Maya Lowlands and Ubaid-period Mesopotamia that suggests increased participation in established interregional exchange networks was critical to state formation in many areas of the world.

Objectives of this Research

The primary objective of this study is the documentation and presentation of variability in the Middle Preclassic material record at Cahal Pech from a scientific perspective. I recognize that all archaeological interpretations are based on incomplete samples and that interpretations may be modified or discarded as more data becomes available for analysis. The presentation and publication of the dataset for comparative purposes, and a recognition of the variability it contains, is therefore of primary importance.

That said, the development of a theoretical model to interpret this dataset was also a significant objective of the project. Archaeological data must be interpreted through theoretical frameworks to identify social practice and process in the static material remains of the record (e.g., Binford 1965; Schiffer 1976), and this study provides a model for understanding variability in the Middle Preclassic record. A corollary of this theoretical objective is the development of methods to recognize and interpret differences in materials consumption patterns, which are outlined above and detailed in chapter four.

A final objective of this study is to demonstrate that Middle Preclassic social organization was more complex than previously thought. This appears to be just as true of sites lacking massive construction projects as those held up as exemplars of early complexity. Middle Preclassic social relationships may have been structured along lines of social rank and nascent ascribed status characteristic of chiefdoms, but variability in the record of exchange relationships and architectural investment suggests that other relationships were possible and should be explored. Critical study of Middle Preclassic remains can only be achieved through an intense interrogation of available datasets, and we must be willing to recognize and account for variability whenever it is encountered.