THE BUILT ENVIRONMENT AT PLAZA H, CAHAL PECH: A STUDY IN RESILIENCY

BY

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The Built Environment at Plaza H, Cahal Pech: A Study in Resiliency

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This thesis seeks to understand the human response to extreme environmental, social, and political change during the Terminal Classic (750-1050 CE) at Cahal Pech. Across the Maya lowlands, this period is distinguished by the end of divine kingships, the cessation of new monumental architecture, rapid changes in prestige goods and trade networks, and population decline at many major centers. Cahal Pech, a medium-sized ceremonial center, experienced great shifts in political power and access to resources during the Terminal Classic. This thesis attempts to understand the last occupation of the site, prior to abandonment. Field data for this study is derived from excavations at Plaza H, located in the northeastern portion of Cahal Pech. Research conducted at the Plaza focuses on the Terminal Classic occupation history, architectural features, and evidence of activities. The interpretation presented in this thesis draws from the frameworks of resilience theory and social memory, approaches that emphasizes agency and the ability for societies to reorganize while creatively drawing on the past. The outcome of this research shows that the residents of Cahal Pech during the Terminal Classic succeeded at both the maintenance of noteworthy cultural practices and undertaking radical changes in social scale, demonstrating significant resiliency.

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CHAPTER ONE: INTRODUCTION

Introduction

Starting from traditional Western assumptions, the phenomenon of the Maya collapse appears mysterious and has long captivated a plethora of antiquarians. Romantic tales by early explorers such as John Lloyd Stephens and Frederick Catherwood during the nineteenth century added to the sensationalism. The Maya are often grouped together with other societies that have also experienced significant societal change, e.g., the inhabitants of Rapa Nui or Chaco Canyon. While the term "collapse" suggests a sudden and drastic change, what occurred in the Maya region was a gradual transition that does not indicate an instantaneous event of cataclysmic destruction, nor was it monocausal. The ancestral Maya represent a diverse, dynamic, and resilient group who endured intense transformations during the denouement of the Classic period.

This period, known as the Terminal Classic (TC), occurred roughly 750-1050 CE (Aimers 2007) throughout the Upper Belize River Valley. It is a time of acute social, political, and environmental changes. While it can be difficult to deduce the distant archaeological past, we can attempt to infer the vicissitudes of the Terminal Classic period in numerous ways, such as, "material culture, settlement patterns, the built environment, and ritual behavior" (Mixter 2016:6). Through the built environment, including various architectural forms, one can infer expressions of power and socio-political stature (Awe 2008).

One method for understanding the past is through the built environment. This includes structures, designated natural spaces, and other infrastructure. This thesis specifically investigates the built environment at Plaza H, Cahal Pech. This is conducted through examining architectural features, construction phases, and activities that took place within their environment during the TC period. I conduct this research through the paradigm of resiliency. Previous

collapse theorists have taken a processual approach, in which they see culture as an adaption to the environment and the artifacts as having a role in the function of the cultural system. Within the framework of resiliency, we view societies not as failures of their circumstances, but rather, exercising their agency to a transformational degree. Paying attention to human agency allows us to understand how dynamic the human condition is and the strength of human groups to organize in meaningful ways. It is imperative to note before further discussion that while the usage of the word "collapse" is common in related literature to refer to what occurred during the Terminal Classic the term is tainted by the traditional values associated with it. I therefore employ the term cautiously, and recognize that other terms might be more appropriate such as: social transformation, decline, transition, crumble, and so forth (Aimers 2007).

This thesis seeks to understand how Maya resiliency is reflected within the built environment, and specifically using Plaza H at Cahal Pech as a case study. My goals are to understand if there is evidence of social and political reorganization of Plaza H during the Terminal Classic. While the field work for this thesis took place in the summer of 2019, this research is on the heels of almost a decade of previous archaeological investigations conducted by Dr. John Douglas and Linda Brown of the University of Montana (UM) in partnership with the Belize Valley Archaeological Reconnaissance Project (BVAR).

This thesis is organized into six chapters. The following chapter is a brief historical background to give context to Plaza H. This includes a short geographic and temporal background, incorporating information on the Upper Belize River Valley and Cahal Pech. In Chapter 3, I present the theoretical paradigm of resilience theory. This chapter gives a general introduction of collapse studies that prompted the emergence of resiliency in archaeology. I attempt to synthesize resiliency theory, and in addition, the related concepts of panarchy theory.

Finally, I discuss the role of memory in relation to resiliency. In the next chapter, Chapter 4, I summarize the field work conducted during the 2019 field season at Plaza H. In chapter 5, I present the evidence from the past field work conducted at the plaza, to show a multigeneration occupation as the architecture suggests multiple phases of construction. In addition, I use the nearby site of Actuncan as evidence of a contrasting trajectory during the Terminal Classic. Finally, in Chapter 6, I present the results, issues, possible further research, and synthesize the thesis.

CHAPTER TWO: HISTORICAL BACKGROUND

Introduction

In this chapter, I give a brief overview of the historical background necessary for contextualizing the research. Information in the chapter includes a brief geographic and temporal background, including key details concerning Cahal Pech and Plaza H.

Historical Background

This thesis examines the cultural heritage of the Maya, a people who are spread across Central America, settled into Mexico, Guatemala, Belize, Honduras and El Salvador. There are many linguistic and cultural differences between Maya groups, but anthropologists have long sundered them into two geographic groups: the lowlands and the highlands. The archetype of Mesoamerican studies and the ancient home of the largest cities, the lowlands are spread across the Mexican states of Tabasco, Yucatan, and Quintana Roo; the Petén department of Guatemala; and Belize. Within the Maya lowlands lies the Upper Belize River Valley, whose rich and fertile lands have allowed for its long standing and continuous occupation (Mixter 2016). As explained by Aimers (2002:97), geographically the Upper Belize River Valley:

> [extends across the] base of the Yucatan Peninsula in western Belize, toward the border with Guatemala. To its west lies the central Petén lakes region and, further west, the Usumacinta River drainage. To the south, the Maya Mountains consist of a hilly karsted zone that extend north and gradually flatten to the kitted karst of the northern lowlands.

Abundant with archeological sites (Figure 1), Garber (2004) describes the valley as continuously occupied from the genesis of the Maya until the present. Matching the intensity of use by the Maya, archaeologists have been drawn to the archaeology of the valley for over a century (Garber 2004). No other place in Belize has been more continuously studied than the Belize River Valley.

Temporally, this thesis focuses on a time of significant social and political transformations within the Belize valley. As previously mentioned in Chapter 1, the Terminal Classic (TC) is the final phase of the Classic Period, and marks the transition between the Classic and Post classic periods of the lowland Maya.

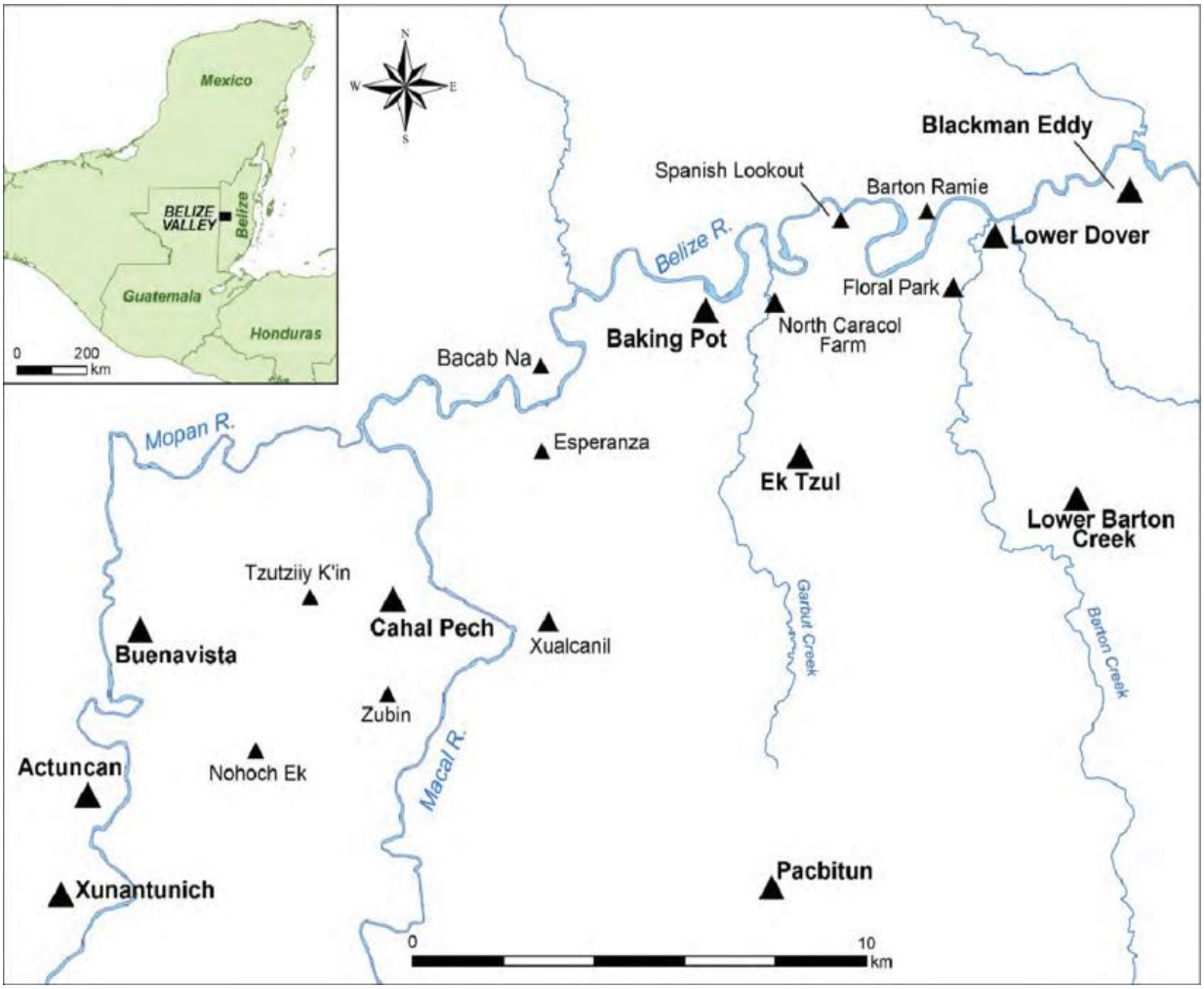

Figure 1: Map of Maya centers in the upper Belize River Valley (after Ebert 2018).

This phase occurred roughly 750-1050 CE (Aimers 2007), with actual dates varying across the Maya region. Investigations of the TC are at a rudimentary stage compared to other time periods within the Maya realm (Aimers 2004:305). Research on the TC period within the

valley suggests a variation of robust activity (Aimers 2004). Although the exact timing differs from site to site, this phase is distinguished by the end of divine kingships, the cessation of the erection of monumental architecture, discontinuance of the trading of many prestige goods, and population decline at certain major centers (Chase et al 2004). Typically, the Classic period political systems were based on *k'uhul ajaw*, or divine kingships. This centralized authority began to change during the TC period as lowland Maya communities began to reinvent themselves, or reorganize into alternate political systems (Demarest et al. 2004). How long these less hierarchical systems survived in the Belize Valley is currently an open question. With previous assumptions of residential and ceramic continuity in the Valley no longer supported by recent radiocarbon dates (Hoggarth et al 2014), regional mobility and abandonment of the Valley in the tenth century is a distinct possibility. This new information is certainly of great significance, particularly as it relates to the long history of the Belize Valley. Because it is quite complex, however, the question will remain outside the scope of the present study.

Cahal Pech

Cahal Pech is a medium sized civic/ceremonial center in the Upper Belize River Valley, located on top of a large hilltop overlooking the present town of San Ignacio. Nestled between large rivers, the Macal and the Mopan, it is placed along an alluvial valley with excellent agricultural capacity and a river corridor that provides access to both the Caribbean Coast and the central Petén region of the Maya lowlands. Archaeological evidence of the earliest occupation of the site suggests 1200/1000 BCE as a beginning date for initial settlement with continuous occupation until roughly 900 CE (Awe 1992; Awe et al. 2020; Ebert and Awe 2020). Early ceramics at the site, Cunil, have been radiocarbon dated to 1100-900 BCE (Ebert and Awe 2020; Sullivan et al. 2013).

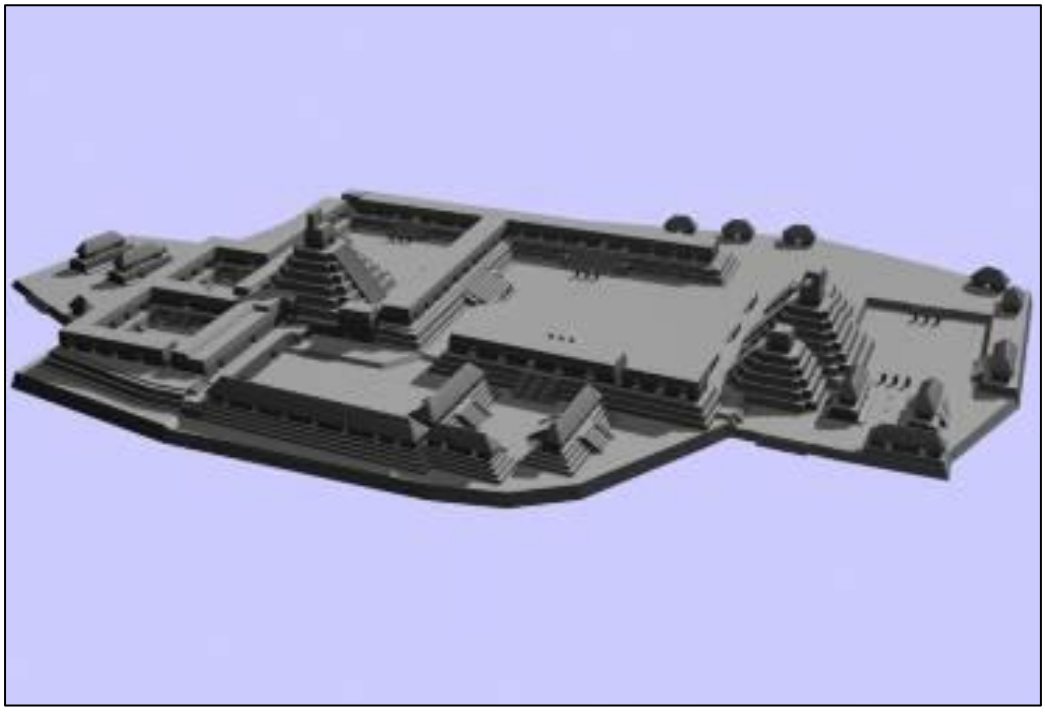

Figure 2: Model of Cahal Pech (Awe).

The site is made up of eight plazas, with multiple structures, temples, and ballcourts (Awe 2008). Most impressive at the site, are its Classic period structures. These include "temple pyramids up to 24 m tall, single and multistoried range structures, large public plazas and small elite courtyards, two ballcourts, reservoirs, and an entrance ramp or causeway" (Healy et al. 2004:103). The site also has eight plain and one carved stelae, and at least one, but possibly two, plain altars (Awe 1992; Awe et al. 2009).

Investigated by the Belize Valley Archaeological Reconnaissance Project (BVAR) since 1988, Cahal Pech is one of the best researched sites in the valley (Awe 1992; Awe et al. 2020). Other notable investigations at the site include research by Linton Satterthwaite (1955); Peter Schmidt (see Awe 1992), and by Joseph Ball and Jennifer Taschek (2001). In addition, there has been an almost decade long partnership between BVAR and the University of Montana (UM) Anthropology Department led by Dr. John Douglas and Linda Brown. This collaboration, which

began in 2011, has focused research attention on Plaza H; I have been a member of the UM/BVAR team since 2018.

Plaza H

In the northeastern corner of the Cahal Pech site core lies Plaza H (Figs. 3-4), one of the last occupied residential courtyards of the site. The plaza consists of four structures: three residential range structures (H-2-3, C-3), and one possible ceremonial structure (H-1). Structure H1, an L-shaped building which is located at the northeast side of the plaza, is the most elevated building in the courtyard. Structure H-2, located south of H-1, is a much smaller building platform that likely supported a perishable building. Structures H-3 and C-3, two other low building platforms lie at the northern and southern perimeters of the plaza respectively.

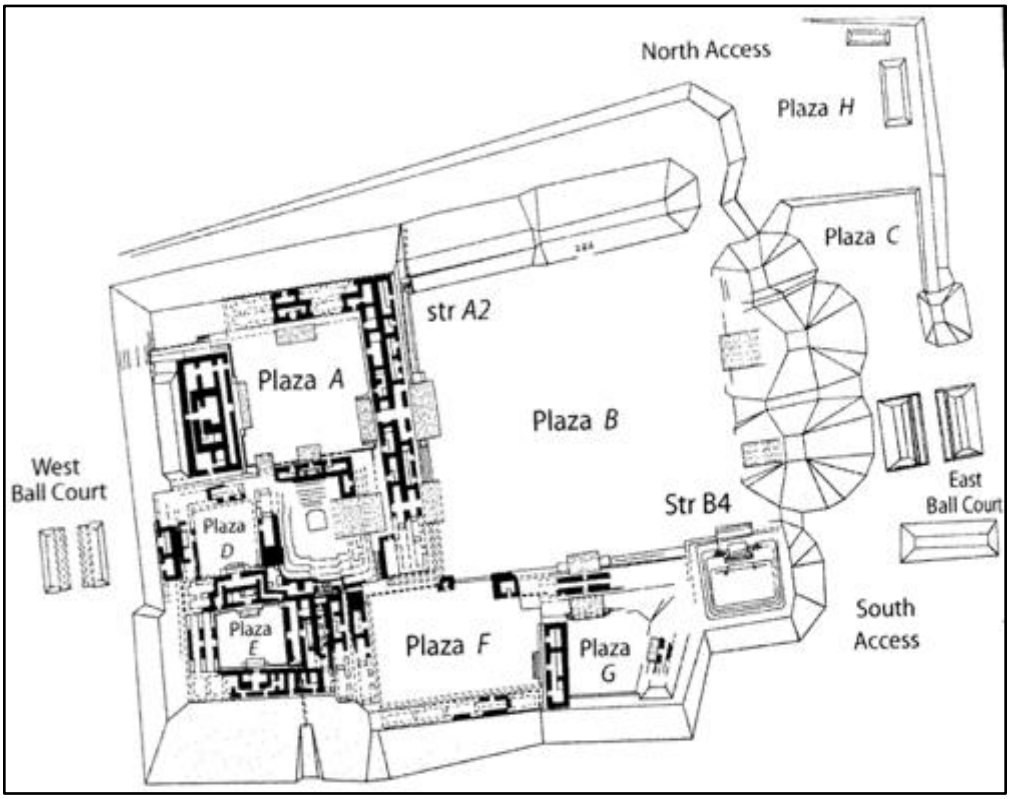

Figure 3: Cahal Pech with Plaza H in the upper right corner. This map does not reflect current knowledge of the Plaza H Terminal Classic structures.

Previously this area of the site was considered to have been occupied only until the Late Classic (LC) and its function within the site core remained unknown. In an effort to determine the latter, the BVAR Project began investigating the plaza in 2006 (Awe 2013). This led to the discovery of large Terminal Classic tomb (Burial H1-1), and to further excavations under the direction of Dr. John Douglas and Linda Brown (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019; also, Pritchard et al. 2011; Santasilia 2012). After the discovery of the tomb, a site that was thought to be virtually abandoned after the LC period, now had evidence of substantial later occupation. The Str. H1 burial represents one of the most high-ranking elite graves at the site (Awe 2013) and is one of eight TC burials that have been discovered at Cahal Pech (Green 2016).

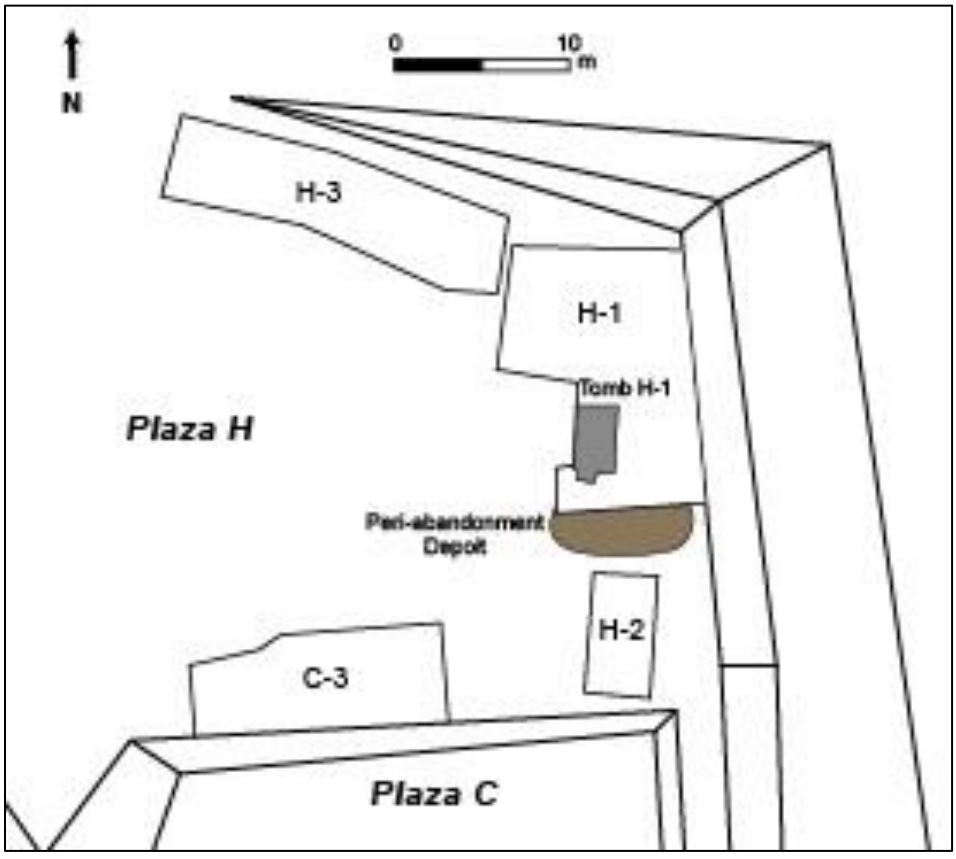

Figure 4: Map of Plaza H, note location of tomb and deposit (By Ebert 2020).

The burial discovered in H-1 was within an elaborate, large tomb constructed of cut limestone blocks that most likely were taken from LC buildings nearby (Awe 2013). Inside the tomb were the articulated remains of an extended older adult male (Green 2016), whose head had a south orientation (Awe et al. 2020) (Figure 5). Awe elaborates further on the burial:

> Associated with the burial were a variety of grave goods, including 13 ceramic vessels, approximately 24 complete and fragmented deer bone tubes, a dog tooth necklace made with the teeth of at least 52 juvenile dogs, five obsidian blades, a Maize God effigy jadeite pendant, two jadeite ear flares, two jadeite beads, one modified conch shell, and one shell bead. At the northern end of the chamber were the remains of a small feline, possibly those of an ocelot (Awe et al. 2020:183).

A deer bone tube from the tomb was dated to 770-875 CE (Awe et al. 2020a; Douglas et al

Figure 5: Burial discovered in H-1, Plaza H (Photograph by Awe).

2021). Douglas et al. (2021) also obtained an AMS 14C date of cal 770-950 CE on a deer antler that was found in a peri-abandonment deposit just south of the H1 tomb. Awe et al. (2020a-b) note that other peri-abandonment deposits at Cahal Pech align with the AMS ^{14}C dates of Plaza H. This includes Plazas A, B, C, and G at the site. It is likely that this burial "represents the last ruler in Cahal Pech's incredibly long history of occupation" (Awe 2013:47). With limited amounts of resources and labor available during this time at Cahal Pech, it is evident that a great deal of effort went into the final resting place of their last ruler.

As I noted above, the discovery of the H-1 tomb in 2006 led to more extensive excavations of the plaza, particularly research focusing on the last phase of occupation of the courtyard. Certainly, this has been the focus of the joint research from the University of Montana and the Belize Valley Archaeological Reconnaissance (BVAR) project whose collaborations at the plaza have been ongoing for eight consecutive field seasons (Steffen and Douglas 2020). Douglas and his team inquired into the construction history, architecture, and activities during the Terminal Classic at the plaza (Douglas and Brown 2015). Results of these investigations indicate that the plaza includes a semi-restricted elite residential space. While the plaza is elevated, it lies just south of the north, and primary, access point for the center. An indicator of status in Maya culture was living in more elevated plazas with limited access, as well as residence within the site core. The higher the elevation and more restricted the plaza was, the higher the status of the residents (Awe 2008). While Plaza H is lower than the LC elite residences found in Plazas D and E, which appear to have been abandoned by the TC, the courtyard is located within the boundaries of Cahal Pech's elevated site core. It is unclear, therefore, whether Plaza H's less elevated and less restricted space represents a clear signal of the lower status of its residents in comparison to those of the LC elite living in the western courtyards; whether it represents a

signal that leadership was becoming different and more accessible than the past; or whether it simply represents a break in the center's occupation during which time Plazas D and E were rendered uninhabitable because of architectural collapse due to a lack of maintenance.

In addition to spatial distinctions, the quality of the construction (i.e., crude stone) in Plaza H, and the size of the buildings in the plaza indicate a possible difference in elite social rank as well. Plaza H is clearly linked to the imposing temples and elite residential structures of the site core site. However, it lies outside of the central acropolis where the Late Classic palaces are located, and it was clearly built on a much lesser monumental scale (Figure 6, Douglas el al.

Figure 6. Photograph of H-1, showing the L-shaped construction of the structure (farthest stone walls). Evidence of late classic building in the upper left and Terminal Classic sub-plaza fill stones in the foreground

2014). Given these parameters, it is possible that Plaza H had a different function from the earlier western palaces in Plazas D and E at the site. Alternatively, it is likely that Plaza H became the primary residence of the site's final ruling family that was trying to maintain power during a

period of environmental degradation and societal change. I will return to this idea in the chapters that follow.

The architecture of Plaza H is representative of Terminal Classic construction techniques. Structure C-3, a residential range structure, was built on top of Late Classic architecture. Running east to west, the structure has a low platform wall constructed with a mix of crude stones, and some cut stones pillaged from Late Classic structures. Douglas et al. (2015:218) characterizes the Terminal Classic in Plaza H architectures as having:

> moderately high rate of disturbance, because of its lack of capping constructions and deposits, a fairly low level of obtrusiveness, due to the use of unshaped stones in platform constructions, and a lack of predictability, stemming from a more vernacular approach to construction.

In addition to Plaza H, Plaza C also has TC period architecture indicating that they were using the eastern section of the site quite heavily (Awe personal comm., 2020; Prichard et al. 2011).

Although the now-eroded north wall of structure H-3 stood a fairly impressive 2 m to adapt to the slope of the hill (Douglas and Brown 2016: 65), these were structures that could have been constructed by a broad segment of Maya society. Cahal Pech no longer had the specialized workforce required to construct quality engineered buildings of finely cut stone.

CHAPTER THREE: THEORETICAL FRAMEWORK

Introduction

This chapter discusses the theoretical paradigm that this research is grounded in: resilience theory. The chapter introduces the basic concepts of resiliency theory, as well as briefly reviewing the secondary aspect of the framework, panarchy.

Resilience

There are various approaches to studying the Maya collapse; two of the prominent theories are monocausal and multi-causal. Monocausal interpretations have focused on resource depletion, climate change, and ecocide narratives (Aimers 2007). Traditional monocausal Mayanists advocated for a "failure to adapt" model (Tainter 1988:59) in response to the changing environment and sociopolitical functions. This model is based on a judgment response, i.e., "that complex societies are preferable to simpler ones, so that their disappearance must indicate an insufficient response" (Tainter 1988:206). This narrative ignores the possibility that a change in a society's sociopolitical levels of complexity involves both winning and losing among classes and other social subgroups, and that collapse need not be seen as social failure.

Some researchers "invoke extraneous causes beyond human control, thus exculpating the Maya from any complicity in their own fate, while others see the Maya as active agents in their own demise" (Webster 2002:219). Multi-causal approaches still emphasize aspects of resource depletion and climate change; however, they have broadened their research to include social systems and human agency. Although the causes that engendered the collapse are similar to earlier research, contemporary studies have developed significantly in our ability to interpret the human response to change. Demarest et al. (2004: 571) argue that:

> descriptions and organic models ignore the fact that a civilization is a complex configuration of institutions built upon a foundation of shared religious, political, and

> economic ideas and concepts. Even after major catastrophes, traumas, and declines, these elements continue to be transformed into subsequent new configurations.

Therefore, each community has the ability to exercise their own complex response to change.

As a reaction to oversimplified narratives of collapse, resiliency theorists argue that resiliency is the rule to human response, and not the exception (McAnany and Yoffee 2010). Rarely do societies end in sudden and drastic calamitous events; rather, change occurs at varying degrees of rapidity. This paradigm was adapted from ecologists who were using it to understand the relationship between humans and ecological systems. It seeks to not just understand the change and its impact upon society but to look at changes that are adaptive to the conditions that are forcing the transformation of the society. Resilience theory endeavors to offer "a framework for understanding that transformations, even the most socially and environmentally dislocating changes, are not chaotic and idiosyncratic, but rather, are governed by particular dynamics, conditions, and opportunities" (Redman 2005:72). Simply put, resilience in a society is the amount of change a society can endure while having the capacity to keep aspects of itself functioning.

This paradigm avows that resiliency is the norm of a population and that some aspects of a culture usually continue even when others are rejected. It allows for a greater emphasis on the role of agency in societal and/or individual responses. They do not deny that certain states end, however, they point out the extreme rarity for a true collapse to occur. Johnson notes that the "term collapse implies a rapid and complete fall from a better state to a worse one. It suggests great upheaval and the catastrophic ending of a once great and complex civilization. In fact, the change was none of these things" (Johnson 2017:58). The two basic principles of resiliency are that: 1) Change is inexorable and recurrent and 2) Cycles occur across scales, but are not constant (Redman 2005).

The core of resiliency is the adaptive cycle, shown in a figure eight (Figure 6). This can be viewed as a life-cycle model; where a society goes through the cycle of birth, senescence, death, and ultimately, rebirth (Redman 2003). Similar in the way that ecologists would apply resiliency to the natural environment, societies have both stability and transformation. Redman notes that "Neither stability nor transformation is assumed to be the norm; rather, systems are seen as moving between the two in what has been termed an adaptive cycle" (Redman 2005:72).

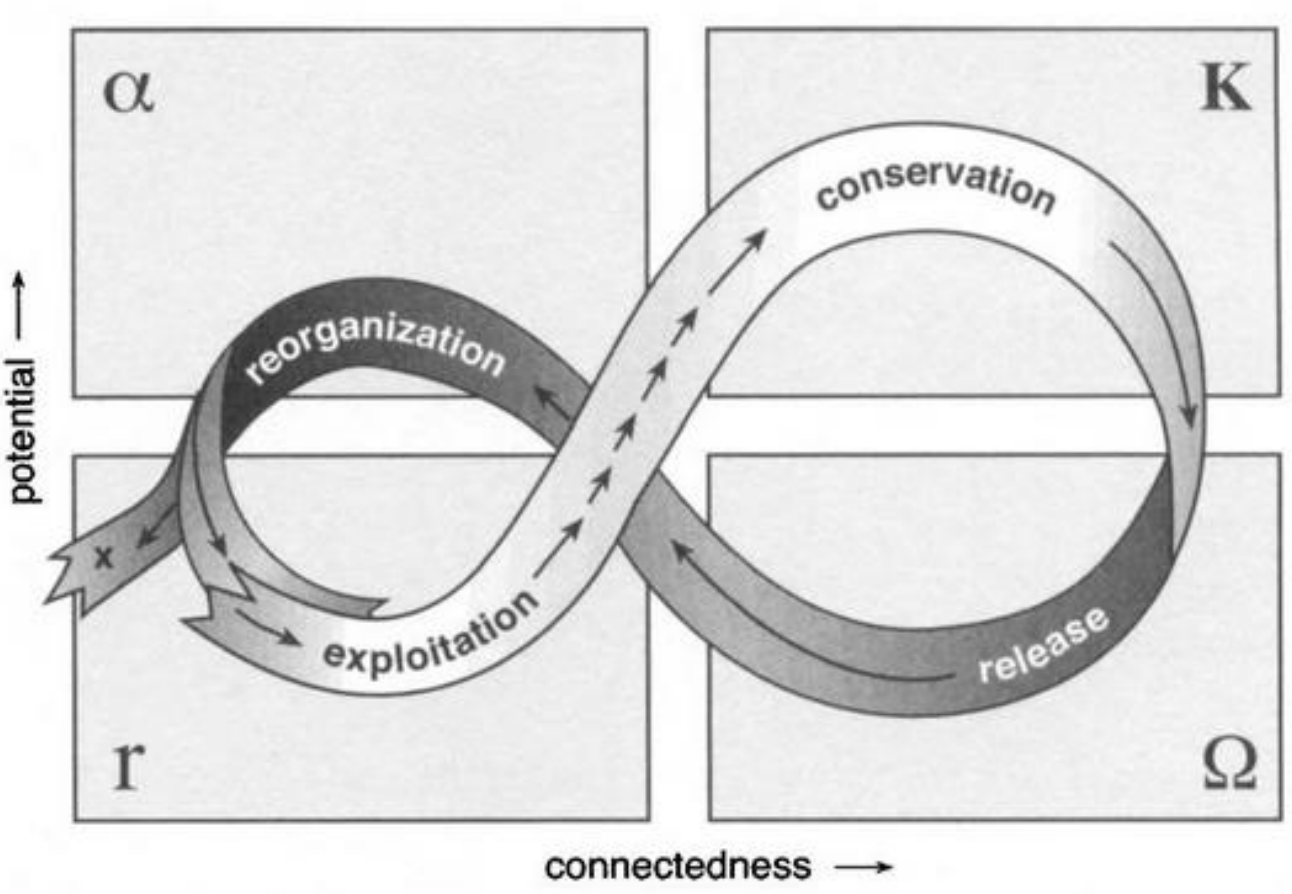

Figure 7: The adaptive cycle of resilience theory (Redmond 2005).

This adaptive cycle is broken up into four separate stages; exploitation (r), conservation (K), release (Ω), and finally reorganization (α) (Redman 2005). The first stage, exploitation (r) represents the "establishment and growth of a new social or ecological system" (Mixter

2016:65). At this point in the process, social rules are still malleable, more readily changing and evolving with the possibility of taking on more adaptive forms. During this period, societies may increase their sociopolitical complexity, as a means of problem-solving during times of stress. Mixter (2016) references the formation of a new state as an example of exploitation.

During the second phase, the K-phase or conservation, systems become relatively locked into established norms and power structures; the form of the state become more strictly upheld and thereby less able to adapt to changing conditions. The next phase, release (Ω), occurs when the K-phase starts to deteriorate due to its rigidness and lack of adaptability. Tainter (1988:93) notes that during this time the investments in sociopolitical complexity as a response to the changing conditions reach a point of declining marginal returns. Previous investment in monumental architecture and communal activities as a method of building and maintaining power no longer produced increased returns, and fail to function as a means of increasing and/or maintaining sociopolitical complexity.

The release phase is quickly followed by the α-phase, or reorganization. During this time systems begin to rearrange themselves, at this point the society can choose or not choose to engage in previous cultural practices, hence exercising their own agency (Mixter 2016). New systems during this phase have the ability to mimic their predecessors and/or have different functions altogether (Redman 2005). If elite communities did not have the capability to rearrange themselves during this period, e.g., rebuild the basic rules of their societies, it is possible that the sites associated with them would be quickly abandoned. With a loss of central power "former political center undergoes a significant loss of prominence and power. It is often ransacked and may ultimately be abandoned. Small, petty states emerge in the formerly unified territory" (Tainter 1988:19).

Panarchy

Within the adaptive cycle of resiliency are multiple other adaptive cycles that make up panarchy theory as used in this thesis. Allen et al. (2014:578) define panarchy as a "framework that characterizes complex systems of people and nature as dynamically organized and structured within and across scales of space and time". As an extension of resiliency, panarchy focuses on how adaptive cycles work at multiple scales. Thinking of panarchy as a set of nesting dolls, with multiple cycles working at once, together, and at different scales.

Within the realm of the Maya, panarchy in action could be individual polities at a single site, or larger political systems (Mixter 2016:67). Applied to Cahal Pech, a smaller scale adaptive cycle would be the lifetime of a single ruler, while at the larger scale the overall TC period in the Upper Belize River Valley. Redman describes Figure 7 as "small-and-fast adaptive circles may go through frequent periods of creative destruction; in many cases, the "memory" imposed by large-and-slow adaptive cycles means the small-and-fast levels would reenter the same or similar adaptive cycles" (Redman 2005:73).

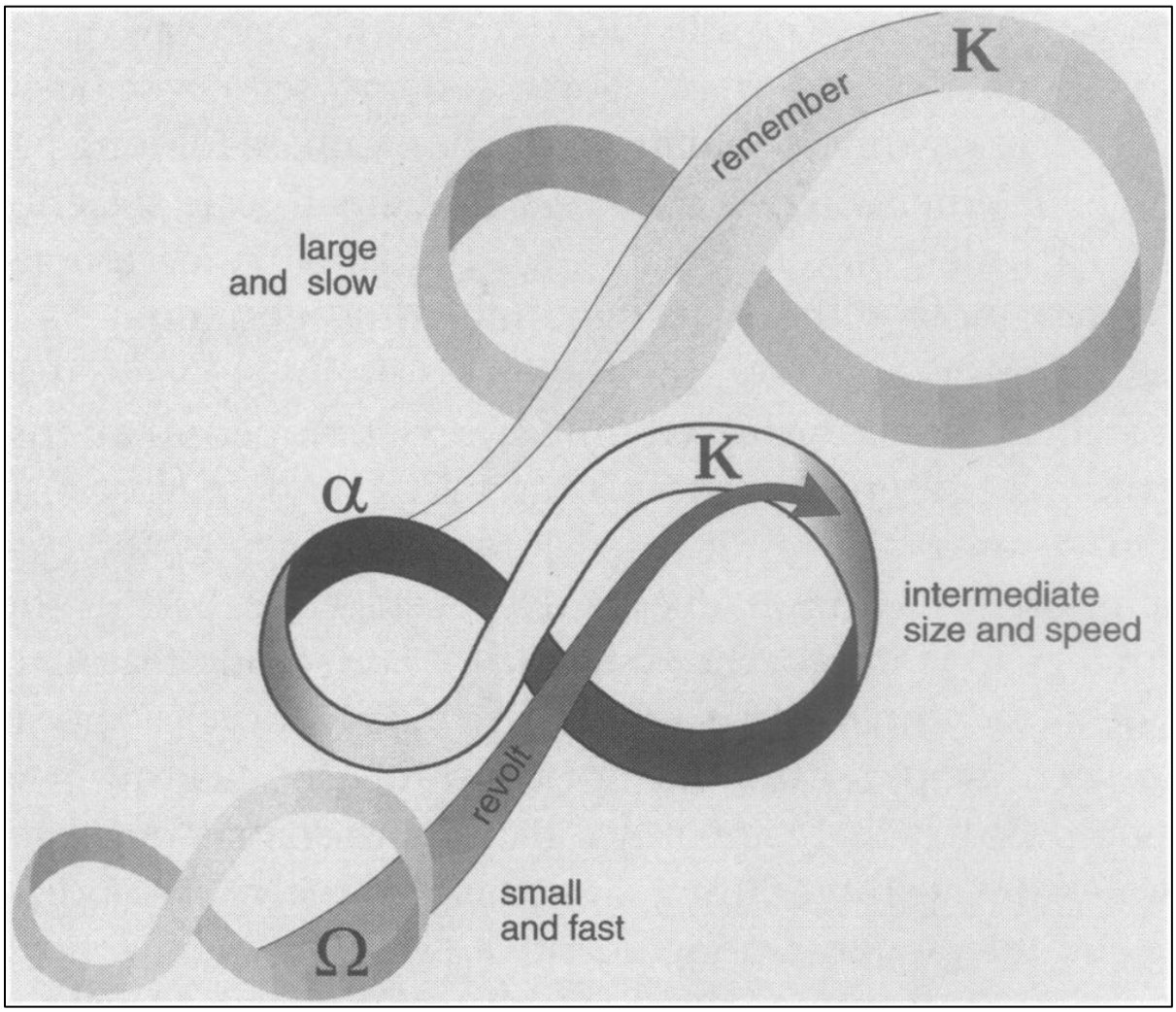

Figure 8: The nested adaptive cycles of Panarchy (Redman 2005).

Redman (2005) discusses that the multiple cycles have a stabilizing effect because of the role of past memory landscapes. An important part of panarchy is the role that memory plays during the adaptive cycles. This is especially pertinent during the final phase of the diagram (Figure 6), reorganization (α). According to Van Dyke (2019) social memory is always associated with a physical space; this is particularly obvious in regard to mortuary memories, which are important for "the establishment and maintenance of the lineage or house, anchored to a place, across time" (Van Dyke 2019:213). Social memory plays a role in which communities and/or individuals determine what aspects of their culture and functions to keep during periods of

change. The memory of the past provides a foundation for the new society. Collective social memory engaged in the past as a means of creating, holding, or legitimatizing authority. This is an important concept that will be further addressed in chapters 5 and 6 in the context of Plaza H.

This thesis applies resiliency as a means of interpreting the final occupation of Plaza H. In the past, collapse studies have been overplayed by traditional Mayanists. Resiliency allows archaeologists to have the ability to use the concepts of reorganization and adaptation to move beyond systems to agency. Instead of viewing change as a failure by societies, resiliency allows us to see change as a natural aspect of social life. A facet of resiliency, panarchy, allows us to engage in how societies can change at different scales, and the role of memory in these changes. This theory views many past collapse studies as downplaying "past people's agency and societies environmental and agricultural competence as well as biological and cultural resilience" (Middleton 2017:81). Resiliency illustrates the endurance of past cultures in the face of adversity.

CHAPTER FOUR: 2019 FIELD AND LABORATORY RESEACH

Introduction

This chapter reviews the methods used in conducting both field and laboratory work that took place from May 26 to June 26, 2019 at Plaza H, Cahal Pech. It builds upon the previous seven seasons of field work at the site conducted by the partnership between the University of Montana (UM) and the Belize Valley Archaeological Reconnaissance Project (BVAR), and, more broadly, on decades on research by BVAR and others (Pritchard et al. 2011; Santasilia 2012). The work conducted in 2019 was planned as the last year of joint UM and BVAR excavations in Plaza H. Research was completed with assistance from Belizean excavators, field school students, and was overseen by Dr. John Douglas of UM.

Excavation Overview

The primary research goal of the 2019 season was to define the architectural features of structure C-3, on the southernmost portion of Plaza H. The previous field season at the plaza by BVAR-UM, in January of 2018, uncovered a small portion of structure C-3 with Units 57, 58, 59, 60, 62, 63 (Figure 8). These partial exposures provided some information on structure C3, but also provoked other questions (Douglas and Brown 2019). Thus, excavations in summer of 2019 were organized to answer ongoing questions regarding construction phases of the structure and how far west the structure extended. This is where the majority of the units were opened in 2019, and which allowed us to uncover most of the structure's walls on the west, east, and northern portions of the platform. The southern wall of the structure is nearly nonexistent and highly disturbed due to erosion, a product of the Terminal Classic structures tendency to be close to the surface level, the topography of the site, and the erosional slope created by the excavation of sunken Plaza C directly south of the wall.

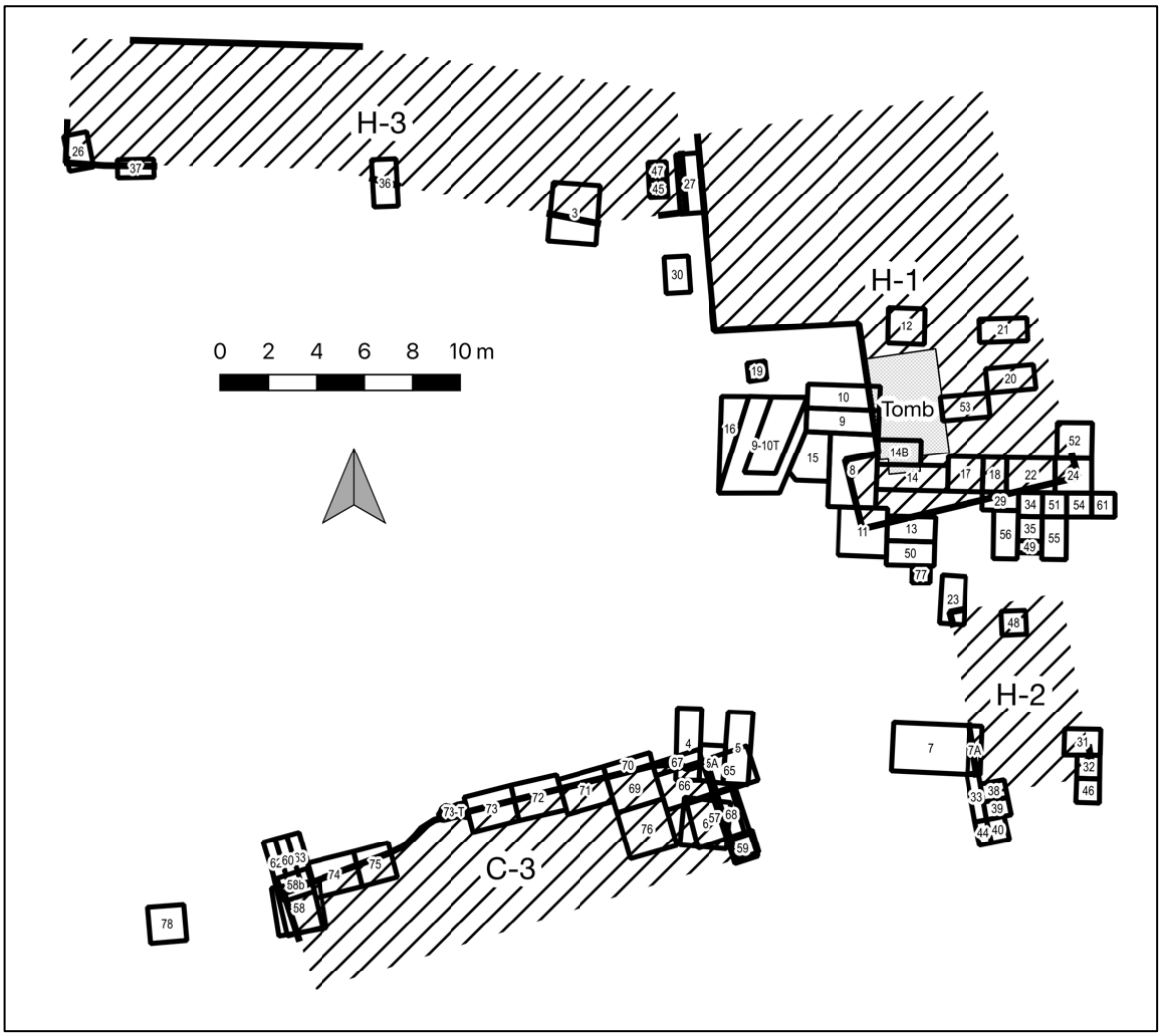

Figure 9: Location of UM/BVAR excavations in Plaza H, 2011-2019.

In addition to tracing the walls of C-3 from its known locations from past UM/BVAR seasons, two additional units answering final questions about the Plaza were excavated. One was an exploratory unit that was placed west of C-3 and one in H-1. The unit west of C-3 allowed us to check previous points from the American Foreign Academic Research (AFAR) excavations (Prichard et al. 2011). A data file of labelled instrument points that AFAR provided—apparently, never used to create a map—for these excavations were difficult to correlate with later work.

Plotting their points suggested that C-3 extended to that area, but in 2018 we found the western corner of C-3 farther east, so we re-labeled what we believed was their reported structure as C-3b in the field report (Douglas and Brown 2019). It was thought that perhaps they had found a small stand-alone Terminal Classic structure that was misinterpreted as the western end of C-3. In this area we placed a 1.5m by 1.5m unit designated as unit 78.

In addition, a small test unit (75 by 75 cm), unit 77, was placed on the south side of H-1. This unit was placed directly south of previously excavated units that contained peri-abandonment deposits. This allowed for continued exploration for possible special deposits as well as other architectural materials such as plaster floors and ballast. We also wanted to explore the likelihood that a possible rock alignment discovered during the previous excavations continued farther.

One of the intentions of the 2019 research was to further future conservation and public interpretation of Plaza H. This goal was encouraged by Awe, who feels that providing more information on the occupation of Plaza H would enable the inclusion of the Terminal Classic phase in site tours, especially those led by expert tour guides. This is one of the reasons we focused on exposing the entirety of structure C-3, including areas that had been previously excavated; one goal was to prepare it for possible stabilization as likely the best structure in Plaza H for this treatment.

Excavations

Excavations were overseen by both Dr. Douglas and I, while Belizean excavators and students primarily excavated and screened. During excavations we used vertical and horizonal controls, in addition to a focus on natural stratigraphy and context. At the beginning of each new level, a level form was started. This included vital unit information, including the depths of each

unit's corners, measured with a line level and plum bob from an arbitrary elevation point that was later placed on the grid by EDM survey. Natural levels were stopped when a significant change occurred; this includes architectural features such as structure fill, walls, or floors. Arbitrary levels were primarily used near the surface during the excavations, where changes in stratigraphy are minimal. Arbitrary levels were typically maintained at 10 cm. Once a level ended, closing elevations were noted on the level forms, artifact bags for the level closed, final photographs were taken, and summary notes made on the level form. When levels needed to be kept separate, because of features or matrix differences, units were subdivided using letter designations.

Dr. Claire Ebert used a total station at the end of the field season to locate units and local datums relative to established site datum points, which connected excavation units, elevation datums, and excavated structural features into the site coordinate system. A master map has been developed from the eight years of work at the plaza and kept in the geographical information system QGIS 3 by Dr. Douglas.

All deposits, except large rocks and ballast stones, were screened through a ¼" screen. After screening, all cultural materials were collected, excluding undiagnostic ceramic body sherds smaller than 2.5 cm. Other items collected include ecofacts, such as faunal remains, including freshwater and marine shell. All collected materials were bagged appropriately by unit, level, and material type; washed (when appropriate), dried, and then repackaged for later analysis.

Throughout the field season digital photography was paramount to document the excavations and cultural materials. Photos were taken with a Pentax Optio WG-3 16-megapixel camera and an iPad Pro. A mug board and north arrow were placed in the photographs to provide

contextual information including the unit number, level, date, scale, and cardinal direction. The names of the photo jpeg files taken on the Pentax were recorded on level forms to provide the full context of each photograph.

Throughout excavations, floors and sediments were observed and tagged for the final profiles of the units. Profiles and plan view maps were completed when necessary. Finally, due to our research interests in the Terminal Classic, excavations were terminated when they reached Late Classic materials. Late Classic deposits were identifiable by changes in the ceramic types as well as deposits falling below the structures.

Excavation Units and Features

Eighteen units, numbered 58-b through 78, were excavated in 2019 (Figure 9); unit summaries are in Appendix 1. The discussion below categorizes these units into three groups: C-3, west of C-3, and the southern end of H-1.

Units in Structure C-3

Structure C-3 is one of two likely residential structures that border Plaza H, with only a limited number of units placed into the platform during previous seasons. Excavations conducted for structure C-3 by UM/BVAR in 2019 comes to a total of 16 units. The primary purpose of our additional units was to better define the wall feature of the structure and determine how far west the structure extended. We also excavated an exploratory unit in the interior of the structure to determine if wall features continued in the interior. This structure was most recently excavated in the 2018 UM/BVAR excavations (Douglas and Brown 2019), with earlier work by UM/BVAR in 2011 and 2012 (Douglas and Brown 2012, 2013).

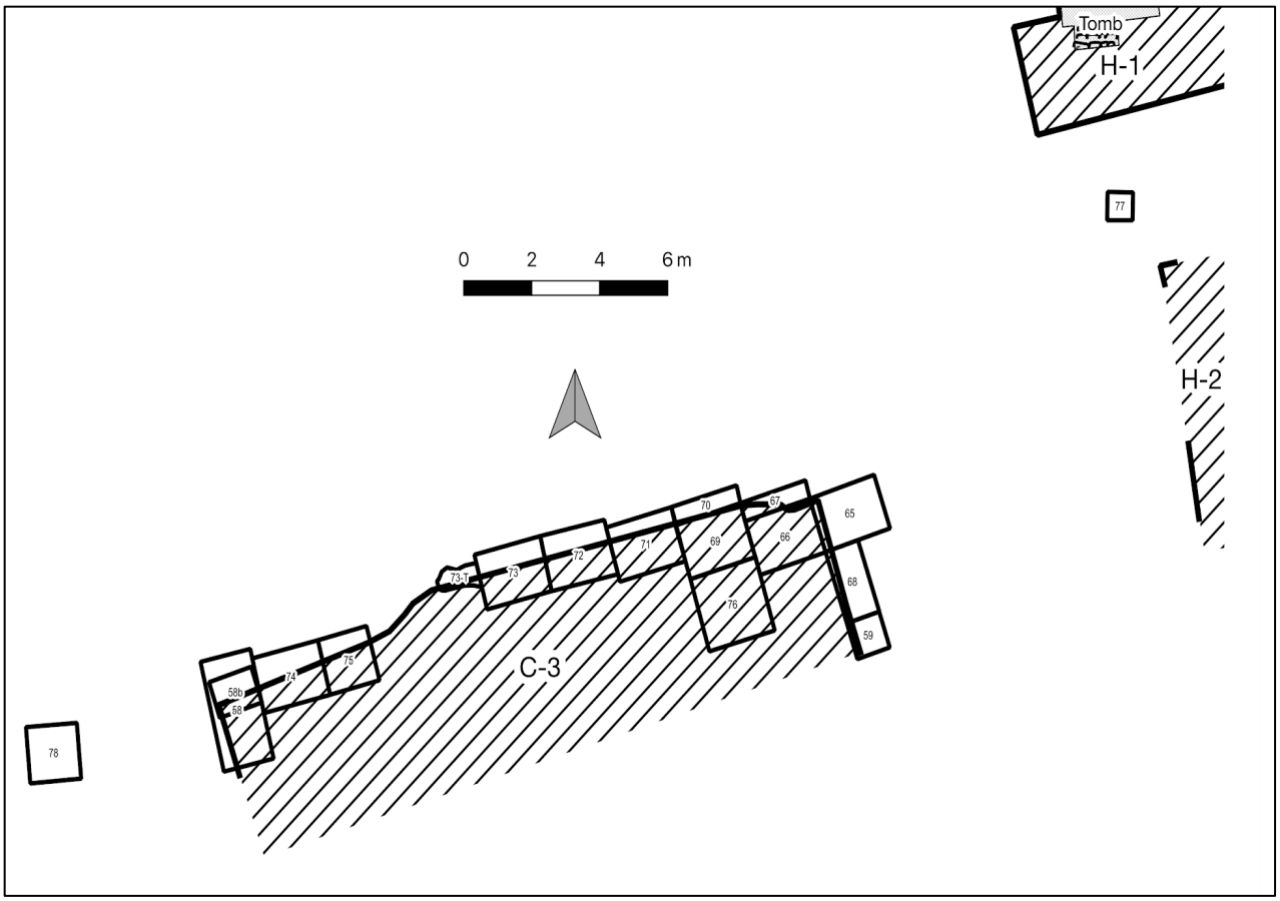

Figure 10: Location of 2019 Excavations.

Units on the east portion of C-3

The east portion of C-3 was subject to UM/BVAR excavations in 2011 and 2012: these units defined the northeast corner of the structure as well as part of the east wall. In the 2018 season Unit 59 aided in defining the eastern wall and southeast corner of the structure. In that excavation, a well-defined Terminal Classic two course stone wall made of rough boulders was unearthed in Level 1. The wall was fully visible at the end of Level 2, running nearly the length of the west side of the unit. The southeast corner of the structure was located in the southwest corner of the unit.

The eastern half of the structure comprised most of the units excavated in 2019, and included: Units 59, 65, 66, 67, 68, 69, 70, 71, 72, 73, 73-Trench, and 76. The goal of these units was to expose the architectural features, primarily the outer wall of the structure. The exception was Unit 76, which was placed to explore a possible stone structure that was visible on the surface, the structure interior was not excavated once the alignment was securely identified as surficial, not an architectural feature of the structure. Some of the units on the eastern portion of the structure overlapped with the AFAR excavations of 2010 and the UM/BVAR excavations conducted in 2011 and 2012, detectable primarily by low artifact counts, homogenized deposits, and modern excavation detritus, mainly nails and string. Detailed unit excavation maps of the UM/BVAR excavations on the far eastern side were available; however, these were not for the AFAR units farther west.

Figure 11: Unit 76, End of Level 1, showing interior of C-3.

Unit 65 was the most northeastern unit excavated during the season; most of the unit contained backfill, with a low-density of small artifacts throughout. This unit re-exposed the northeast corner of the structure, previously excavated by the UM/BVAR project, with no obvious floor or soil change in the backfill. Unit 66, located west of unit 65 following the north wall of the structure to the west, with the matrix in front of the structure containing a low-density of artifacts and most of the unit comprised of structure fill that was left unexcavated. Continuing to trace the wall feature, Unit 67 revealed the two-course, crude, north-facing rock wall. Unit 67 proved to be too far south to capture the face of the structure wall, so a 50 cm extension, Unit 70, was added on. Units 67-70 revealed a weakly-preserved plaza plaster floor at the foot of the

structure. Similar to other units along this section of C-3, the east end of the unit excavation consisted of backfill.

Continuing our exposure of the feature moving west, in Unit 71 AFAR level strings were uncovered 76 cm west of the eastern boundary of the unit. For this portion of the unit, backfill was removed and not screened for cultural materials. This unit had three cultural levels; Level 2 ended when we broke through a plaster floor, with Level 3 ending at a second plaster floor at the same depth as the one found in Unit 70. This plaster floor extended to Unit 72, the next unit west, where a total of three levels were exposed. Unexpectedly, a fourth course of rock was exposed.

Unit 73 exposed interesting use of cut stone blocks for the courses of the wall, the only place in Plaza H where this has been found (Figure 11). These stones appear to be reused Late Classic blocks. Oddly, rough stones were placed on top of the cut ones. Further placement of regular units to the west was blocked by the root system of a large tree; this tree effectively split the excavation of C-3 into the western and eastern operations. However, a western extension of Unit 73 was dug, 73-trench. Working around the larger roots to create a rough pit about 130 cm e-w by 60 cm n-s, it allowed us to expose the structure wall further. Overall, a large portion of the excavated units on this side of the structure consisted of backfill. However, much of the north wall, and all of the eastern wall, were exposed, allowing the overall construction and form to be assessed and recorded for the first time.

Figure 12: Unit 73, End of Level 1, showing the north structure wall with modified rocks.

Units on the West portion of C-3

The west end of C-3 was previously partially excavated by UM/BVAR in 2018 as Unit 58. Units excavated in the 2019 field season included: 58, 58b, 60, 62, 63, 74, 75. These units were placed on the western portion of the structure, which is west of the large tree and its extensive root system extending over the structure.

Unit 74 is located directly east of Unit 58b, and west of Unit 75; together, these three units comprise the western excavations of C-3 in 2019. This excavation block allowed us to further uncover the C-3 structure wall east from Unit 58b. We continued to extend east with Unit 75, which is located just on the other side of the obstructing tree from Unit 73-Trench. The stone wall continued in Unit 75, with two levels of fill. There was a continuous plaster floor north of

the structure wall. East of that unit had too many roots to continue the excavation, creating a gap in the excavation of the north wall of 180 cm between Unit 75 and Unit 73-Trench.

The 2018 excavations exposed portions of the structure in Unit 58, 60, 62, and 63, primarily exposing the western wall and the top of a north wall stone at the structure's northwest corner. The 2018 Unit 58 had followed the west wall of C-3 down to its base and beyond, but had left the north wall unexposed. This strategy exposed the thick plaster that was found to the north of the structure; instead of exposing the front of the structure, the 2018 work followed the plastered surface northward in units 60, 62, and 63 before running out of time for further exploration. After re-excavating Unit 58 without screening, we started new excavations with Unit 58b, a unit within the northern portion of Unit 58. Unit 58b primarily incorporates the northwest corner of the structure and the area in front of it. Counting from the previous excavated levels in 2018, Unit 58b started at Level 5, where the plaster floor started 40 cm below the original ground level, and extended out into the plaza some meters, based on Units 60, 62, and 63 excavated in 2018.

This work exposed a lower stone alignment beneath the wall feature. At first, it was unclear if this was plaza fill or an earlier part of the Terminal Classic construction. In 2018, the team was confused by a floor that appeared at the same level as the top of the structure. Our work suggests that the archaeological "top" of the C-3 structure here is an eroded surface, and at

least one course of stones is missing, making it appear that this floor adjoined the top of the structure. This accounts for this floor adjoining the apparent “top” of the structure.

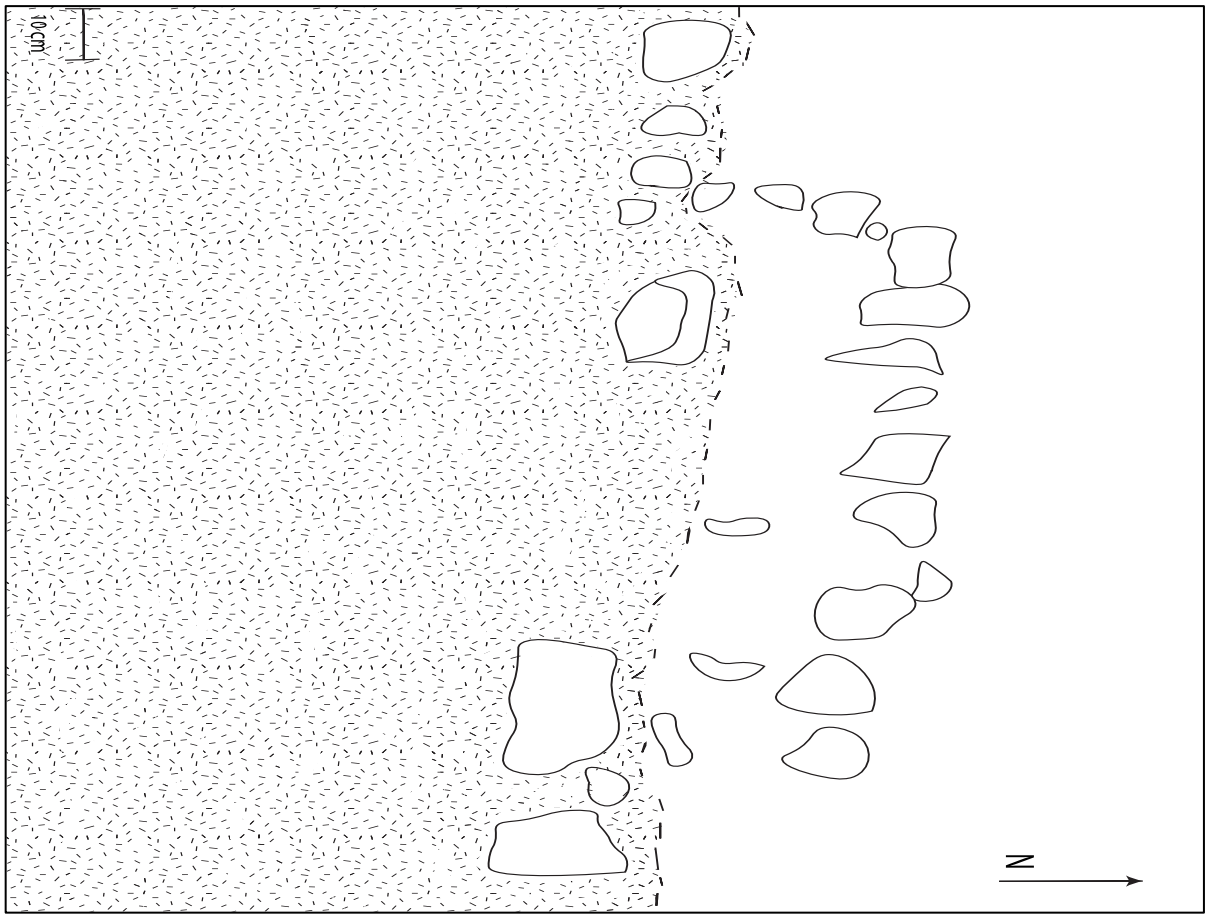

Figure 13: Plan map of Unit 74 and 75, featuring the two distinct walls. The stippled area is the top of the platform outlined by the illustrated facing stones; the wall to the north is 30 cm lower and appears to extend beneath the C-3 platform.

The excavation also encountered a lower, single row of stones placed in a similar direction at the C-3 structure walls, within Units 74 and 75. It was not clear at first if this row is an earlier structure that C-3 was built over or possibly part of the fill and ballast for the plaza floor. Figure 13 provides a view of the main structure (C-3) and this possibly earlier construction, Figure 14 shows a second section of this lower wall at the northwest corner of

structure C-3, and Figure 15 is an image highlighting the substantial plaster floor at the base of C-3.

Figure 14: Unit 58-b, Level 8 End. Shows the NW corner of C-3 and a segment of the lower wall at the base.

It is a possibility that the West side of structure C-3 has two construction phases. There appears to be an earlier smaller platform beneath the plaza fill. Traces of an earlier C-3 structure have been suggested based on earlier excavations on the east end (Douglas et al. 2015). However, the larger exposure of this low structure found in 2019, including under the west wall of the structure in Figures 14 and 15, is the best evidence from excavations in Plaza H that supports the hypothesis of two phases of construction during the TC. The implications of this interpretation are addressed in chapters 5 and 6 of this thesis.

Figure 15: Unit 58b, End of Level 7, showing the thick plaster floor.

Although research questions primarily focused on the architectural aspects of the feature and the phases of construction, we decided to place an exploratory single unit within the interior. Unit 76 was placed to ascertain if there was a continuing rock alignment within the interior, based on a short alignment on the surface, with two levels excavated. The stones proved to be unconnected to any feature or interior division. However, Unit 76 allowed us to gain further insights into the household activities that were taking place during the TC period, with a surprisingly large number of rough chert bifaces and cores recovered (Cores = 9; Bifaces = 3; Utilized flakes = 1; Other chipped stone, mostly large flakes = 13).

Unit West of C-3

One unit was placed west of Structure C-3, Unit 78 (1.5 by 1.5 m). This unit was located roughly 3.5 m west of Unit 58 in C-3. The purpose of this unit was to confirm or deny previous AFAR excavation findings that concluded the presence of a platform and stairs, which Douglas and Brown (2019) tentatively identified as C-3b. Two levels were removed in the unit and yielded a moderate density of artifacts. The artifacts included significant special finds such as chert drills, obsidian, a marine shell bead (Figure 16), and a chert projectile point.

Figure 16: Marine shell bead from Unit 78. Level. Scale in cm.

A plaster floor was uncovered that appeared about the same elevation as the floor located in Unit 58 in front of structure C-3. We concluded that we had located the Plaza H floor and that there was no TC structure in this area. This indicates that there is only structure C-3, and the

2018 excavations had located the western wall of that platform, not separate C-3a and C-3b structures as suggested as a possibility in Douglas and Brown 2018.

Unit near H-1

We revisited an area south of structure H-1 during the 2019 field season to better understand a wall feature that was located between the northwest corner of Structure H2 and just south of the H1 tomb. In doing so, we opened up Unit 77, a 75 cm by 75 cm excavation adjacent to the southern wall of Unit 50 (excavated in 2016) and 50 cm west of the northern end of Unit 22 (excavated in 2014). This unit was placed to test if there were peri-abandonment deposits similar to the ones found in nearby units 13, 50, and 56. A second goal was to determine if there were any architectural features that were underneath the deposit. The upper levels of the unit are in a peri-abandonment deposit; however, overall artifact concentrations were rather low compared to units closer to the south wall of structure H-1. A total of seven levels within the unit were conducted, each excavated by 10 cm intervals or smaller if a cultural level was discovered.

Level 7 yielded a peri-abandonment or special deposit located above a plaster floor, followed by fill, and then a continuation of plaster floor. This consisted of a series of large thick pieces of plaster throughout the entire level. No architectural features were discovered within the unit; however, there were significant artifact finds, as described below. Most of these finds were on the same level as the bottom of Unit 50, where other special finds had been located.

Artifacts and Ecofacts Recovered in 2019

Recovered artifacts and ecofacts were washed (when appropriate). Artifacts recovered by the individual projects at Cahal Pech were washed in a communal system for all projects at Cahal Pech designed to maintain efficient use of personnel and screens. These were sorted and counted

after the excavations, and were organized and stored in a basic framework of provenience and material type (Table 1).

Table 1: Artifact categories, frequency, and percentage.

Material	***N***	***Percent***
Carbon	*24*	*1.0%*
Ceramic	*1,295*	*55.8%*
Chert	*776*	*33.4%*
Daub	*5*	*0.2%*
Faunal remains	*14*	*0.6%*
Freshwater shell	*136*	*5.9%*
Marine shell	*12*	*0.5%*
Obsidian	*32*	*1.4%*
Special finds	*22*	*0.9%*
Slate	*5*	*0.2%*
Grand Total	***2,321***	***99.9%***

Most of the artifacts came from C-3, where most of the 2019 excavations took place. The unit placed in the interior of the structure (Unit 76) produced an unusual amount of chert cores within the unit, yielding a total of eight cores with a number of large flakes as well, and four tools—three bifaces, one with battering, and a flake with retouch. The cores were found close to

the surface layer of the unit. This also yielded weathered ceramics and a few freshwater shells. While this material could be part of the structure fill, lithic reduction tools and objects used elsewhere, the proximity to the surface and distinctiveness of the assemblage suggests perhaps they are an indication of activities that took place on the structure. A similar sort of crude chert biface found on the structure comes from the west side of the structure, uncovered in Unit 74, Level 1 (Figure 17).

Figure 17: Chert biface, possibly broken, was excavated in Unit 74, Level 1, within C-3.

A total of 22 special finds were recovered during excavations. This included crude bifaces, chert drills, chert projectile point tip, chert drill and scraper, marine shell drilled beads, and an anthropomorphic jar fragment. While structure H-1 only had a single small unit placed on it, the excavation yielded four special finds.

As stated in the excavation section, this structure featured a peri-abandonment deposit along its south wall and extending around 2.5 meters southward. The most notable find from Unit 77 was a small anthropomorphic calcite tempered jar figurine featuring a hand and arm (41 by 26 by 10 mm) (Level 2) (Figure 17).

Figure 18: Figurine fragment with a hand & arm, Calcite temper.

Other special finds discovered in this deposit include a crude biface (Level 4), crude biface tip (Level 7), and a chert flake that had some retouching along the edge (Level 4). A chert projectile point was also discovered in Unit 77, Level 4 as part of the south of the peri- abandonment deposit.

CHAPTER FIVE: ANALYSIS

Introduction

This chapter examines the outcomes of previous excavations at Plaza H, including the work outlined in Chapter 4 and earlier excavations, to understand the later phase of Cahal Pech occupation. These data are viewed through the theoretical paradigm of resiliency. The role of memory for the plaza, specifically how the role of memory interacts with the multi-generational use of the site, is given special consideration. To further explore the agency and variation in TC responses in the Belize Valley, this chapter ends by considering a previous study of a center in the region that suggests a significantly different TC trajectory.

Analysis

Examining the architectural history of Plaza H allows us to glean insights into the last habitation of Cahal Pech. The built environment reflects different expressions of power and social-political stature (Awe 2008). Archaeologists can use architecture as well as the uncovered cultural materials to further make inferences about the past (Awe 2008). To accomplish this, I examine previous excavations that took place at Plaza H. UM-BVAR collaborative excavations started in 2011, with excavations taking place in structures H-3 and C-3. That year led to the discovery of C-3 as a feature in the plaza, after uncovering a platform wall in Unit 4 running east to west (Douglas and Brown 2017).

The following year excavations returned to structure C-3. Units were placed in the northeast corner of the site (Douglas and Brown 2017), as well as opening additional units in H-1 and H-2. Unit 5 yielded a lower building foundation, which according to Douglas and Brown had been "remodeled by replacing it with near-surface platform located in Unit 4, producing a taller platform with a slightly smaller footprint; simultaneously, the plaza was raised and plastered, covering the earlier, lower Terminal Classic platform corner" (2017:83).

Structure H-1, last excavated in 2006 with the discovery of the tomb, was revisited in 2013. Unit 8 was placed directly southwest of the tomb, overlapping with the structure and the central plaza area (Douglas and Brown 2017). Unit 8 results yielded two separate plaza floors, as well as large upright stones blocking the stairway entrance into the tomb. These blocking stones were not initially identified, largely because of a tree growing over the entrance, but ultimately this excavation led to the discovery of the staircase leading to the tomb, which was not previously known (Douglas and Brown 2014). The tomb was cut through the bottom plaza floor; therefore, the tomb and much of H-1 was constructed later, following a reconstruction of the plaza (Figure 18) (Douglas and Brown 2017).

Figure 19: H-1 featuring the sidewall and two plaza floors in Unit 8 (Douglas and Brown 2017)

Fast-forwarding to 2016, units in H-1 also produced evidence for multiple phases of construction. During the 2016 field season, Douglas and team continued opening units nearby the tomb that was discovered in 2006 (See Chapter 2). While excavating Units 51 and 54, a portion of a north facing platform wall was unearthed. This newly discovered wall was at distinctly different levels than both the H-1 wall to the north, and the H-2 wall to the south (Douglas and Brown 2017).

Most recently, in 2018 and 2019, excavations returned to C-3. As detailed in Chapter 4, the UM/BVAR team in 2018 decided to investigate the northwest corner in order to better define the limits of the structure. To achieve this goal, four units (58, 60, 62 and 63) were placed in the southwestern portion of the structure; and two other units were placed on the southeastern section of the structure (57 and 59) (Douglas & Brown 2019). These units were reopened during the 2019 season to more fully answer basic questions of construction and to determine the morphology of the building; this field season truly defined the position of the northwest corners and facing walls. As mentioned in Chapter 4, the West side of C-3 has an earlier stone alignment beneath the wall feature. The results from the 2019 field season, alongside previous evidence from earlier years, gives probable confirmation that Plaza H experienced two phases of construction during its span of occupation.

Examining construction phases of the plaza is one method for understanding the Terminal Classic phase of occupation at the site, another is exploring the activities that took place in the courtyard. This includes analyzing artifacts that were collected during the excavations. I will briefly go over some of the significant findings from the plaza. While it is likely that the plaza served as a venue for pilgrimage related activities in the Cahal Pech site core, it is also possible that cultural remains recovered in the excavations were associated with residential and quotidian

activities that took place in the plaza. During the 2016 season the UM/BVAR team had the opportunity to analyze an extremely dense chert debitage deposit that was discovered at the plaza. Located along the western wall of H-1 and the eastern end of H-3 (Douglas et al 2016, Santasilia 2012), this deposit contained vast quantities of small chert debitage.

Douglas et al (2016) estimates that Unit 30 yielded approximately 12,000 flakes. Further analysis on the flakes showed that they were likely detritus from the final stages of biface production (Douglas et al 2016). Evidence for flintknapping, on a larger scale, indicate aspects of workshop production at the site. Douglas mentions that "by indicating that economically significant activities took place on a larger scale than the household at plaza H during Terminal Classic, this work helps define the nature of the plaza" (Douglas et al 2016: 105). Additionally, the debitage deposit was discovered to be used for plaza fill during the remodeling of the plaza.

As previously discussed in Chapter 4, we placed an exploratory interior unit in C-3 during the 2019 field season. This unit, Unit 76, was placed to investigate a possible stone alignment; however, while that was surficial, notable lithic materials were discovered. As mentioned, a total of eight cores and a number of flakes were unearthed. Although this could certainly be a part of structure fill, the chert objects are likely associated with stone tool production activities that were taking place in the plaza. The findings of lithic production and other activities is significant as there is no evidence of daily life in other plazas of Cahal Pech. Considering that lithic production is associated as a commoner activity, and not an elite one, this could represent the leveling of social systems.

Resiliency

The data presented above suggests that life continued at Plaza H for some time during the Terminal Classic period. Not only that, but multiple locations within the plaza experienced

periods of reorganization and regrowth. Recalling that during this time period Cahal Pech would have been going through significant political and social change. Many aspects of political life during the Late Classic period would have been something remembered, e.g., ceremonies, great well-kept temple mounds, and elite removed from the eyes of most and served by retainers. Although the lack of power and resources clearly had an effect, those events and the built environment retained their pull, and key activities, such as honoring a leader with a royal tomb, were retained.

Within resiliency, Cahal Pech would be experiencing the adaptive cycle as conditions began to become more intense. Consequently, divine kingship began to disintegrate, thus the rise of the release (Ω) phase at Cahal Pech. Elites would be experiencing a decline in political and social control, as class stratification was becoming increasingly narrow. Elite investments in sociopolitical complexity were no longer reaching a return margin; therefore, previous social and/or political systems could no longer withstand the pressures. This created a significant opportunity to advance social mobility for those of a lower class, specifically those very local to the site.

In an attempt to mimic previous social and political constructions, lower elites at Cahal Pech endeavored to recreate Classic political systems as close as possible. Ergo, Plaza H during this period would have quickly been constructed and/or utilized during the reorganization (a) phase of the site. It is likely that the plaza was modified during this period, and control taken over by lower elites such as the ruler in H-1 (Awe et al 2017)—although continuity of the royal family, in reduced situation, cannot be disproven. As stated earlier, evidence shows an earlier plaza floor that was constructed before the tomb. This indicates a period of habitation at the plaza before the construction of the tomb, and then another phase of construction after the tomb

was built. Noteworthy, peri-abandonment deposits associated with H-1 reflects continued ancestral veneration. McAnany (1995) notes that by interring their dead "under the floors of their houses, in residential shrines, and within large funerary pyramids right in the center of their cities and villages" the Maya maintained close ties with their deceased ancestors (McAnany 1995:1). The use of ancestor veneration at the site "drew power from the past, legitimized the current state of affairs, and charted a course for the future" (McAnany 1995:1). Elites at Cahal Pech would have continued to hold on to power until it was no longer possible, even after the burial of the last ruler.

As discussed in Chapter 3, the memory of the past lays the foundations for the future. Collective social memory creates a method for creating, legitimatizing, and holding authority at the site. One aspect of memory is linking the past to the present. Mixter notes that:

> Through collective ceremony and spectacle, old monuments, including monumental architecture, can be resignified to meet the needs of the present. The manipulation of monuments in the process of legitimization can be seen archaeologically through the material remains of social practices that create and modify memories (2016:7).

This is shown at Cahal Pech by the continued occupation of Plaza H, the new seat of authority, in close proximity to the historic center of political and religious authority.

As suggested, Plaza H represents the reorganization (α) phase of the adaptive cycle. To understand resiliency in the greater framework of Cahal Pech this can be outlined by the other three phases of the adaptive cycle. The exploitation (r) stage can be viewed as the establishment of the Early to Middle Preclassic (1200 BCE -300 CE) occupation of Cahal Pech, as well as its gradual rise to complexity. Following this, the conservation (K) phase occurs during the Late Preclassic (300 BCE -300 CE) to Late Classic (600-750 CE) periods. This period is characterized by the increase of population

and settlements in the valley. As well as the establishment of hereditary rulership, and the rise of Cahal Pech as a regional center.

The release (Ω) phase can be associated with the end of the Late Classic. This is a time at the site where high populations led to an increase demand on resources. These stressors begin to affect the community both economically and politically; eventually leading to the gradual decline of their sociopolitical complexity. This leads to some cases of migration and depopulation, as well as abandonment at other sites in the valley. Finally, the reorganization (α) phase occurs. As previously stated, this phase can be associated with the events that unfolded during the Terminal Classic. Evidence of resiliency is reflected by the fact that some populations remained at the sites in the valley, and attempted to perpetuate previous cultural traditions, institutions, and lifestyles. The continued occupation and use of Plaza H provides tangible evidence of resilience.

Comparison with Actuncan

Similar to Cahal Pech, nearby Actuncan, a site located 2 km north of Xunantunich and 8 km from Cahal Pech (Figure 1), experienced changing conditions during the Terminal Classic. Actuncan is a low-density urban center (Fulton 2015) that was influenced by political powers from Xunantunich. Shifting political ideologies and population decline during the Terminal Classic at Xunantunich allowed Actuncan to develop new social and political organization. In contrast to other sites experiencing population decline during this period, Actuncan experienced stability (Mixter 2016). Broken up into two district zones (Figure 19), North and South, the site is believed by the excavators to be continuously occupied into the Postclassic (900-1500 CE) (Fulton 2015).

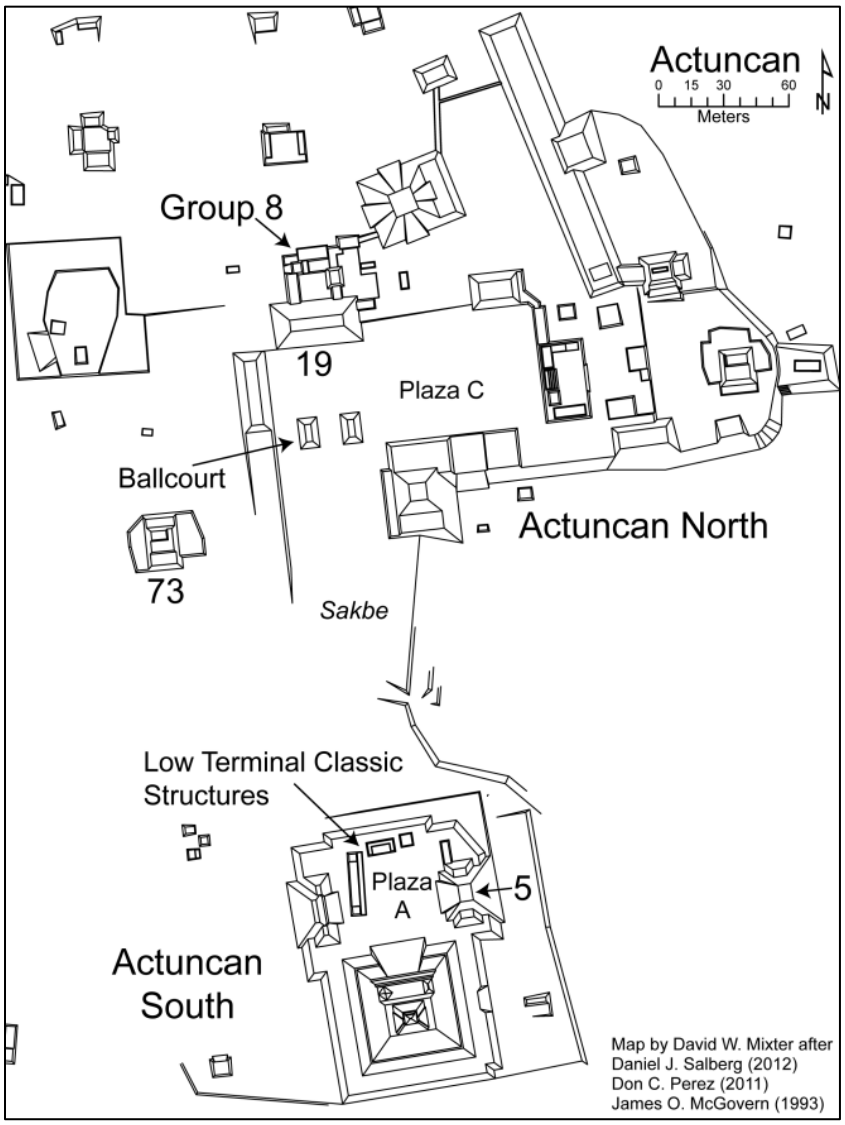

Figure 19: Map of Actuncan (Mixter 2016)

The site has been continuously researched by the Actuncan Archaeological Project (AAP) since 2004 (Fulton 2015). The subject of his 2016 dissertation, Mixter approached the Terminal Classic period of the site by use of resiliency and the role of memory. Mixter analyzed the non-monumental architectural features at the site, in particular focusing on the political reorganization that the site implemented during the Terminal Classic. Mixter (2016) outlines four hypotheses for the possible methods of political reorganization. These hypotheses are as follows: continued ruling by a single elite ruler; council-based authority; theocratic authority; merchant

oligarchy.

Mixter concludes that Actuncan was likely ruled by a council house based authority system, or *popol nah.* According to Mixter, constructions of Group 4 and Structures 7, 8, and 9 at the site indicates councilor rule. This led to an entire generation of independent rule and success at the site, an outcome which he notes was a resilient strategy. Although there are significant differences between the social and environmental settings of Cahal Pech and Actuncan, Mixter's study on social reorganization at Actuncan presents an interesting, yet contrasting outcome to Cahal Pech. Yet, in both sites the role of human resiliency continued to display strength in the response to change.

Conclusion

As presented above, excavations of Plaza H since 2006 has led us to completely reexamine our understandings of Cahal Pech before abandonment. Despite facing adversity during the Terminal Classic, the Maya had the ability to reorganize themselves. This is evident from the multiple phases of structural reorganization that was discussed above, indicating that Plaza H went through not one phase of reorganization but two. Additionally, it is important to note the role in which collective social memory plays in the act of reorganization; especially in relation to ancestor veneration. Finally, contrasting another nearby site with a different response to a comparable situation, shows that human response mechanism to change is not a failure, but an intrinsic and flexible reaction to changing circumstances.

CHAPTER SIX: DISCUSSION AND FINAL REMARKS

Introduction

This final chapter begins with my concluding remarks on Plaza H analysis, including further reflections on resiliency and its application to the site. It continues with a summation of this thesis, including issues related to the research. Furthermore, it finishes with a consideration of possible future research.

Discussion

Investigations in Plaza H of Cahal Pech provide evidence of the dynamic nature of the Terminal Classic period at this site. The intention of this thesis was to address resiliency through architecture at the plaza. I sought to understand the final occupation of the site, by investigating the phases of construction and the cultural activities that took place in the courtyard. As mentioned in Chapter 3, this was inspired by previous work accomplished by McAnany and Yoffee (2010), who adapted the framework of resiliency into archaeology. In a generalized sense, resiliency is the adaptation to changing conditions, a framework that values agency. The past archeological research at the plaza has been instrumental in understanding the final occupation of the site. Specifically, I draw on field work that was accomplished in 2019, primarily at structure C-3, which allowed further confirmation that Plaza H had two phases of construction. In Chapter 5, I discussed previous excavations that suggest phases of reorganization at the plaza. Additionally, I compare data from Cahal Pech with that recovered from the nearby site of Actuncan that experienced similar conditions. However, evidence suggests that the political and social reorganization between the two sites varied greatly.

Issues

The obvious issue with this research is the lack of dates. In particular, Plaza H is severely lacking in dates (Douglas et al. 2020, Awe 2020). I would love to have dating completed on materials from C-3, however due to the proximity to the surface level, erosion, bioturbation, and other disturbances, collecting materials can prove to be more difficult than other periods. While this approach is based on inferences made from the archaeological materials, it is lacking and would benefit from more dating.

Future Research

The last fourteen years of research at Plaza H has been remarkable. We have interpreted and told the story of the past through the archaeological record in a way that I believe honors the lasting habitation at the site. In terms of resiliency and the Terminal Classic, a future larger regional study of the Upper Belize Valley would be ideal. Additionally, although not directly related to the research presented here, allowing Plaza H to become a more important part of the public interpretation of Cahal Pech in the future is an important goal. That would allow final conservation of the four structures for lasting public archaeological use. I would also like to see interpretive signage that includes information on the resiliency of the occupants of the site, and helping visitors to understand that resilience is not just unique to the Maya but for all societies who have endured change.

Final Thoughts

There is no failed society, only a society subject to change. As stated, the resilience of a population is the norm and not the exception. Although faced with many changing social and political pressures, those lasting populations at Cahal Pech adapted to new conditions, all the while continuing to honor their past. Utilizing resiliency theory allows us to know that Cahal

Pech and its hinterlands was not suddenly bereft of inhabitants, people continued to use the land and engaged in their cultural and religious practices. Even if the Valley was largely abandoned for a period in the Postclassic, those migrations were about choices and extending social continuity in the face of adversity. If populations decided to abandon their sites or peripheries, migration is still exercising agency and resilience. Furthermore, in the event that aspects of a society "fail", for example, their political and economic system disintegrates, this does not mean that all parts of their culture cease to exist. This is clearly apparent at Plaza H, as outlined throughout this thesis.

While the mysteries of collapse will likely continue to puzzle archaeologists and the public alike, research in recent years has yielded a great deal of possibilities, especially within Cahal Pech. With the evidence presented, we can determine that there was a continued use of Plaza H after their last divine king departed, and that significant cultural practices were continued. With their sociopolitical system unraveling, residents still continued their cultural heritage practices despite what older collapse theories have suggested. In spite of what occurred, the story of the Maya during the TC reflects one of resilience and cultural continuity. This is true, certainly, for those who dwelled in the small plaza on the hilltop, Plaza H.

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