Examining Ancient Maya Resiliency at Xunantunich, Belize

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ABSTRACT

EXAMINING ANCIENT MAYA RESILIENCY AT XUNANTUNICH, BELIZE

TUCKER AUSTIN

Despite more than a century of intensive archaeological research, factors leading to the Classic Maya Collapse continue to be debated by Maya archaeologists. This presentation discusses the Classic Maya Collapse and its effects on the people of Xunantunich, Belize. Investigations from the 2018 field season, carried out by the Belize Valley Archaeological Reconnaissance project and the Xunantunich Archaeology and Conservation project, targeted non-monumental architectural features, such as platforms and walls, to establish a chronology of construction and function for these features. Collected data demonstrate evidence of human response to collapse in the form of non-monumental development and reorganization of public space within Xunantunich's monumental center. This research provides a better understanding of how the ancient Maya restructured their physical environment during a time of substantial change.

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CHAPTER 1: INTRODUCTION

This thesis focuses on understanding the response of the ancient Maya to the societal and political collapse of the Classic Period. The long-term effects of collapse, the cessation of carved monuments, the disintegration of established socio-political systems, and the eventual abandonment of monumental centers, have been well researched by Maya archaeologists (Culbert 1973; Demarest et al. 2004; Iannone 2014; Webster 2002). Still lacking, however, is a clear understanding of Maya responses to the stressors that led to the decline of their Classic period society. By investigating late activity at the site of Xunantunich, this thesis research explores this question, and attempts to provide a better understanding of the resilience of a population and its customs during the period of decline. To accomplish this goal, this research focuses on non-monumental architectural developments at several sites within the Belize River Valley, specifically those at the site of Xunantunich, located in west-central Belize near the Guatemalan border.

The term non-monumental architectural developments and non-monumental architectural features are employed in this research to generally describe two forms of masonry construction within monumental centers. These features include masonry platforms and walls that are small in scale compared to other monumental structures in their immediate vicinity. Monumental features is defined for this research as structures over three meters tall that likely required a labor force of multiple individuals. Non-monumental features are typically no taller than a meter but can vary in length and width, they are predominantly located within the core area of major sites, and they appear to represent the last, Terminal Classic period (800 - 900 AD), structures erected in the site's epicenters. If the latter is accurate, it would suggest that these non-monumental architectural features represent the last construction efforts at sites in the Belize Valley, that they were

associated with the final occupation phases of these major centers, and that they can provide important information on ancient Maya response to societal collapse. In an effort to determine the above, this thesis addresses the following questions:

- Do Terminal Classic period, architectural features at Xunantunich represent evidence for continuity or discontinuity of Maya society during the decline of civilization in the Belize Valley?
- 2) When were the non-monumental features at Xunantunich constructed?
- 3) What function or role did the non-monumental features play in reinforcing or discouraging the use of public space during the Terminal Classic period?
- 4) And lastly, how does this use of space compare to other sites in the Belize Valley subregion and can a regional explanation for this practice be determined?

Through a resiliency approach, I present my findings from the 2018 summer field season which focused on the excavation and analysis of the non-monumental features in the site core at Xunantunich. Specifically, I apply a panarchy model to the different phases of occupation present at Xunantuinch, to better understand the role of resilience at the site. I relate these finding to similar features found at the sites of Actuncan, Cahal Pech, and Lower Dover, sites all located within the Belize River Valley. These sites all have significantly different occupation and developmental histories. Each of these sites, however, exhibits evidence of Terminal Classic activity during the decline of Classic Maya civilization. The addition of these regional comparisons also provides a regional perspective for understanding the use of the non-monumental features observed at Xunantunich.

CHAPTER 2: BACKGROUND

Xunantunich is located in Western Belize along the Mopan branch of the Belize River (Figure 2.1). Although there is evidence for Preclassic occupation at the site, Xunantunich (Figure 2.2) actually began to develop as a major center between AD 600-670 (Samal phase), reaching its apogee during the Late-Terminal Classic (AD 670-780) Hats' Chaak phase, and its final decline between AD 780 – 890 in the Tsak' phase (LeCount et al. 2002). The Classic Maya collapse, which occurred during this later time frame, culminated with the end of dynastic rulership and the abandonment of major political centers (Shaw 2003). Although it is not completely understood, suggested causes for the collapse include ecological degradation, social upheaval, internecine warfare, and drought (Deevey et al. 1979, Demarest 1996, Hoggarth 2017; Webster 2004). Ongoing research by the Belize Valley Archaeological Reconnaissance (BVAR) Project hopes to shed light on this cultural collapse and its effects on Xunantunich and other regional centers (Awe et al. n.d.).

The site core of Xunantunich is composed of three large plazas surrounded by monumental architectural features. Plazas AI and AII represent space where public ritual and spectacle were performed for citizens of Xunantunich (Lecount et al. 2002). These plazas are enclosed by the Eastern Triadic Shrine to the east (Strs. A2, A3, and A4), El Castillo to the south, Strs. A7, A8, and A9 to the west, and Str. A13 and Plaza AIII to the north. Str. A1 divides Plazas AI and AII to the south and north respectively. Plaza AIII is a private plaza that contained elite residences, located north of the other plazas in a linear fashion.



Figure 2.1. Map of the Belize River Valley showing major sites being investigated by the BVAR Project. Map courtesy of the BVAR Project. Mopan River is to the West, with Xunantunich in the Southwest portion of the map.



Figure 2.2. Map of Xunantunich (after LeCount and Yaeger 2010). Excavations will focus around Plaza A-I

The first accounts of Xunantunich come from Thomas Gann, a 1920's archaeological enthusiast and medical doctor who explored and excavated the site, including Plaza A-I and some of its related structures (Gann 1925, 1928). Gann's excavation methods were not exemplary, resulting in the creation of massive pits at the summit of several structures at Xunantunich. Gann's early work brought attention to the site and led to subsequent investigations by professional

archaeologists. One of the latter included Sir J. Eric S. Thompson (1942) who excavated in Group B and provided the first ceramic sequence published for the site. Euan MacKie (1961) of Cambridge University returned to Xunantunich during the 1950's and 1960's renewing the research interests of his previous British colleagues. The Belize Department of Archaeology would continue MacKie's research throughout the 1970s and 1980's (Pendergast and Graham 1981), followed by the Xunantunich Archaeological Project (XAP) which investigated the site in the 1990s (Harrison 1996; Jamison and Wolff 1994; LeCount and Yaeger 2010; Yaeger 1997). To date, several projects continue the investigation of the site. These projects include the Belize Valley Archaeological Reconnaissance (BVAR) Project, the Mopan Valley Archaeological Project (MVPP).

Plaza A-I

Plaza A-I is the southernmost of two large public plazas located within the monumental center of Xunantunich. Several structures encompass the plaza. Strs. A2 and A3 comprise the eastern side of the plaza. These structures are the two southernmost structures of the site's Eastern Triadic Shrine (Awe et al. 2017). The western side of the plaza is bordered by Strs. A7 and A8. Str. A1 forms the northern boundary of the plaza, and separates Plaza A-I from Plaza A-II. Str. A6 (El Castillo) dominates the southern boundary of the plaza.

There are four access points into Plaza A-I, each located at one of the corners of the plaza. The northeastern and northwestern entrances provide access to Plaza A-II via an alleyway to the east of Str. A1 and through Ballcourt 2 to the west of Str. A1. The southeastern and southwestern accesses to the plaza are possible from Sacbe 1 and Sacbe 2 respectfully. Plaza A-I's central location, accessibility, and spatial relationship to El Castillo provide evidence that the plaza was an important locale for public ritual (Leventhal et al. 1993). So too does the presence of several carved and plain stelae and altars at the base of the large structures enclosing Plaza A-I (Helmke et al. 2010).

Excavations at Structure A1

During the Xunantunich Archaeological Project's (XAP) first field season, they began excavations in Plaza A-I. XAP continued to investigate Plaza A-I throughout the mid-90s, focusing particular attention on the related structures that encompass the plaza (Etheridge 1995; Jamison 1992, 1996; Jamison and Wolff 1993; Leventhal 1996; Lewis 1996; Robin 1994; Zeleznik 1993). XAP excavated Str. A1 over the course of three years, beginning in 1992. The excavations revealed that Str. A1 was a late addition to the site core, built in the Late Classic 2 (Hats' Chaak) phase (Jamison and Wolf 1994). Str. A1 was constructed in a single phase, using large, square construction cells. It has been suggested that Str. A1 was likely one of the latest additions to the site core and that its construction served to divide what was previously a large, rectangular plaza into two smaller, square plazas, Plazas A-I and A-II (Jamison 1992).

During the excavation of Str. A1, XAP exposed a wall that extended between Str. A1 and Str. A3 (Jamison 1992). It was suggested that this wall may have been built to restrict access into Plaza A-I from the Northeast (Leventhal 1994). The wall clearly abutted both Strs. A1 and A3, indicating that it postdated both pyramids; however, no exact date for the wall could be determined.

During his initial investigation of Str. A1, Jamison (1992) also noted two low platforms, that are the focus of this research, at the southern base of building. Jamison notes that the platforms likely postdated the initial construction of Str. A1. While Jamison described the general dimensions of the platforms, and their position in relation to the southern staircase of Str. A-I, no excavations were undertaken to expose or probe the platforms. XAP archaeologists suggested that the platforms may contain "special deposits," which may refer to peri-abandonment deposits (also referred to as terminal or problematic deposits).

Excavations of the Eastern Triadic Shrine

The eastern triadic shrine is a monumental architectural complex consisting of three adjoining pyramids on the eastern border of Plaza A-I along a north-south axis. The typical layout of an Eastern Triadic Shrine consists of a large central pyramid flanked by two smaller pyramids facing west. Eastern Triadic Shrines are typically associated with ancestor veneration at many sites in the Belize Valley (Awe et al. 2017; Santasilia 2015). These types of shrines are structurally analogous to E-Groups found throughout much of the Petén Region of Guatemala. They lack, however, any sort of astrological function that typical E-Groups demonstrate.

The structures that make up the Eastern Triadic Shrine at Xunantunich, from north to south, are Strs. A2, A3, and A4. All three structures have been excavated. Strs. A2 and A3 were built in a single construction phase, similar to Str. A1(Santasilia and Tilden 2016). In contrast, Str. A4 was constructed in two distinct phases (Audet 2006; Awe 2008), indicating that the triadic arrangement postdated the construction of Str. A4/2nd (Awe 2008; Awe et al. 2017; Santasilia and Tilden 2016).

All three structures comprising the Eastern Triadic Shrine have additional basal construction. Str. A4 has two low platforms that abut the front of the structure (Audet 2006, Leventhal 1994). These platforms were excavated, and each demonstrated three levels of construction, all dating to the Late/Terminal Classic period. One of the platform's floors had been cut into in order to place a burial (Audet 2006). The individual was male and placed with his head

to the north in a semi-flexed position. A single miniature, black vessel was located in association with the burial (Audet 2006).

Str. A3 had similar additions placed on its western base. A line of cut stones were placed on top of A3's staircase, running west c. 65 cm past the lowest step (Jamison and Wolff 1994). XAP believed that the wall was a construction pen for a platform that extended to the south. The fill of the platform contained Late Classic and Terminal Classic ceramics (Jamison and Wolff 1994). The platform extends south past the conjunction of Strs. A3 and A4, linking them (Lewis 1995). The platform is one of several of the platforms excavated by Audet (2006).

Str. A2, the most northerly structure in the Eastern Triadic Shrine, has a basal addition as well. Str. A16, referred to as the Stela House, sits 1.5 m west of Str. A2's staircase (Ethridge 1995). Str. A16 contained a stela and altar. Strs. A2 and A16 were linked by a low platform raised above the plaza floor level.

The presence of Terminal Classic period additions to the Eastern Triadic Shrine at the plaza level demonstrate a reorganization or redefinition of space by the ancient Maya. The construction of these features demonstrate construction that would have closed off the access to the stairs of Strs. A3 and A4. The construction of these features provides evidence that Strs. A3 and A4 were no longer in use at the time that the platforms in front of the structures were built. The extensive work done on these structures allow for a comparative baseline for excavation of the platforms abutting Str. A1.

Terminal Classic Examples Non-monumental Features in the Belize Valley

Actuncan

The site of Actuncan, located along the Mopan River approximately two kilometers north of Xunantunich, also contains evidence of non-monumental construction during the Terminal Classic period (Mixter 2017). The site core has been spatially divided into a northern civic center and a southern, ceremonial center (Figure 2.3). Actuncan was initially occupied during the Middle Preclassic period (1000 to 300 BC) and developed as a significant regional power between the Terminal Preclassic and Early Classic Periods (LeCount 2012). The site exhibits a significant decline during the Late Classic period in which much of the monumental structures and significant public architecture fall out of use. The decline of Actuncan coincides with the development of larger spheres of control by sites within and outside the Mopan River Valley (Ball and Taschek 2004). Despite the decline of the site, recent evidence suggests continued occupation of a significant population at the site (Mixter 2017).

During the Terminal Classic period, as the larger polities holding sway over Actuncan began to decline, a resurgence in local identity and memory developed (Mixter 2017). The Maya constructed several non-monumental features represented by four platforms located within Plaza A of Actuncan's ceremonial center (Mixter and Langlie 2014). The platforms, identified as Strs. 7, 8, 9, and 93, are arranged within the plaza along the west and north of the courtyard (Figure 2.3). Three of the platforms are free standing. The easternmost platform abuts Structure 5 extending north from its northwest corner. Strs. 7 and 8, the westernmost and northernmost platforms respectively, were each constructed in three phases. All phases date to the Terminal Classic period. The easternmost platform, Structure 9, was crudely constructed in a single phase. It was determined that the platforms within Plaza A at Actuncan functioned as a way to reorient the layout of the plaza by deemphasizing Strs. 4 and 6 and towards Structure 5. The reorganization

of space was accomplished by blocking the central stair of Str. 4 and moving the center of the plaza away from Str. 6 and towards Str. 5.



Figure 2.3. Map of Plaza A at Actuncan with low-lying platforms and the associated excavation units.

The reorganization of space at Actuncan provides a potential explanation for the similar non-monumental features present at Xunantunich. Despite the similarities, there are several important distinctions to note about the platforms at each site. The most prominent of these is that unlike Actuncan, the platforms at Xunantunich do not extend into the plaza a significant amount causing a reorientation of the plaza's center. Additionally, the construction sequences of the platforms are markedly different. The construction sequences of Xunantunich's platforms are discussed in following chapters.

Cahal Pech

Cahal Pech (1200BC – 850/900AD) is located just south of the modern town of San Ignacio, approximately 9.5 kilometers northeast of Xunantunich. Cahal Pech represents one of the longest occupied Maya settlements in the Belize Valley. The initial occupation of the site began around 1200 BC during the end of the Early Formative period (Awe 1992, Ebert and Awe 2018), and continued until the ceremonial center was abandoned in the Terminal Classic period (Awe et al. 2017; Hogarth 2012). Despite the latter decline, evidence of Terminal Classic occupation and restructuring has been recorded in the site core and is described below.

At Cahal Pech, Awe and his colleagues (2017, n.d.; Douglas and Brown 2017) uncovered considerable evidence for Terminal Classic activity and the construction of non-monumental features in Plaza H (Figure 2.4). The plaza, which is located in the northeast corner of the epicenter, is bordered by Str. H1 to the north, Strs. H2 and H3 to the east, and Str. C3 to the south. All of these structures are long, low platforms that conform to the definition of non-monumental features used throughout this research. The western side of the plaza is open providing access to Plaza B. The structures that comprise Plaza H all date to the Terminal Classic and were constructed in, at most, two phases. Str. H-1 is the only structure in the plaza that has evidence of an earlier construction phase in the Late Classic period. Additionally, a Terminal Classic royal tomb was located within Str. H-1 (Awe 2013).



Figure 2.4. Cahal Pech Site Core. Note Plaza H to the northeast of the site, and the L-shaped wall (highlighted in red) in Plaza C discussed later in this section.

Plaza C, located to the southeast of the site core, directly south of Plaza H, also contains evidence of Terminal Classic activity. Along the southwest corner of Plaza C, a low, L-shaped wall was constructed from scavenged facing stones (Awe and Morton n.d.) (Figure 2.5). Str. C6, located directly adjacent to the wall, exhibits extensive looting of facing stones and is the likely source of much of the construction materials used for the L-shaped wall (Pritchard et al. 2011). The L-shape wall is similar to the wall located at Xunantunich's Plaza A-I in that it may have functioned as a delineation of space or as a restriction of access for Plaza C.



Figure 2.5. 3D model of Cahal Pech's site core. The L-Shaped wall in plaza C is highlighted in red. Image provide by Dr. Awe.

Plaza H and the L-shaped wall present in Plaza C represent Terminal Classic use and reorganization of Cahal Pech's site core. The Plaza H platforms demonstrate a remembering dynamic exhibited by the Maya as built on top of a Late Classic building. This behavior is typical of Maya construction and can be seen at practically every structure within Cahal Pech's site core. The L-shaped wall and its construction from stones scavenged from earlier buildings are markedly different. The act of scavenging stones may indicate a disassociation between the builders of Str. C-6 and those of the L-shaped wall. Both of these examples exhibit behaviors that may correlate with the non-monumental features at Xunantunich.

Lower Dover

Lower Dover (Figure 2.6) is located along the Belize River Valley to the west of the modern-day town of Unitedville, Cayo District. Lower Dover is approximately 25km to the northeast of Xunantunich on a limestone ridge overlooking the Belize River. The development of

Lower Dover is similar to that of Xunantunich. Lower Dover was initially occupied during the Late Classic period and abandoned during the Terminal Classic period (Guerra and Collins 2016). Potential Post Classic occupation of the site is represented by a single ceramic surface find.



Figure 2.6. Lower Dover site Map. Note structure B16 and B17 abutting Plaza B and extending towards Plaza A.

There are two examples of non-monumental additions to the site. Str. B16 and B17 are two low range structures that extend from Plaza B towards the northeast. The structures were noted as being in an unusual alignment to the rest of the site, suggesting that the structures were later additions (Guerra and Collins 2016). A single test unit was placed into the southernmost of the two structures. This excavation indicated that Str. B16 was a single course platform constructed in a single phase. Further excavation of the structures could provide a clearer understanding of the role of Str. B16 and B17 in relation to larger site.

CHAPTER 3: RESILIENCE

A recent study (Kintigh et al. 2014) by 181 archaeologists determined that the issue of identifying and measuring cultural collapse within a population is one of the most significant challenges archaeologists face today. The survey identified twenty-five general challenges under five predominant themes. One of the themes addressed the topic of "resilience, persistence, transformation, and collapse." Kintigh and colleagues (2014) remarked that it is necessary to distinguish between total "societal collapse" and general declines within cultural continuities. They also note that a resilience framework offers an approach to examine the effects of decline and the response by a community employing functional reorganization as well as historical continuity.

Resilience Theory

In the most basic of terms, resilience theory examines transformational changes in adaptive systems. Resilience theory assumes that change is inevitable and that no system exists within a single scale. In other words, all systems function within multiple scales of space and time. Key components of resilience theory include the ideas of panarchy, adaptive systems, and adaptive cycles. Panarchy, a term re-coined by Holling (2002), is a framework that examines the dynamics between processes and structures that maintain relationships, and create potential relationships. Panarchies differ from hierarchies in that the systems in a panarchy feed into one another but there is no top-down authoritative control. Within a panarchy there are adaptive systems that exist within a nested hierarchy. Adaptive systems undergo adaptive cycles which oscillate between times of gradual change and times of rapid change. The spatiotemporal scales at which adaptive cycles

work can either be small-and-fast or large-and-slow (Redman 2005). In general, longer cycles allow for the accumulation of potential resources and faster cycles allow for creativity and opportunity. Systems can undergo revolt and remember dynamics. "Revolt" dynamics occur in a system from small to large scales and "remember" dynamics, that allow for a culture to retain aspects of itself through change, occur from large to small scales (Redman and Kinzig 2003).

In Resilience Theory, the adaptive cycle goes through four phases and is depicted as an interconnected infinity sign in which all cycles feed into each other (Figure 3.1). Holling (2002) originally discussed the phases in terms of birth, growth/maturation, death/destruction and renewal, however, the cycles are now more commonly discussed using the terms release (Ω _phase), exploitation (r phase), conservation (k phase), and reorganization (α _phase) (Redman 2005). Resilience theorists argue that societies commonly try to remain in the k phase, however the refusal to reorganize or adapt to the external factors that pressure a culture can lead to collapse.



Figure 3.1. Resilience theory panarchy model demonstrating an adaptive system (top) and the same panarchy model in terms of a "life" cycle (bottom).

When applying this model to the site of Xunantunich, in the most basic of terms, it is possible to glean an understanding of the life cycle of the site. The initial occupation of the site signifies birth in the resilience model. The construction of monumental structures and procurement

of labor by the ruling class during the site's apogee represent the growth or conservation phase. The external factors such as environmental change and overexploitation of resources, common explanations for the Classic Maya collapse, eventually place too much stress onto the population of Xunantunich causing the site to begin its decline. This decline represents the death or release phase. Finally, the population of Xunantunich completely abandons the site, moving elsewhere to engage in the renewal or reorganization phase.

The focus of this research specifically targets the periods between and during the death and renewal phases of this model. The decline of the site is evident during the Terminal Classic period as the population begins to diminish. This research examines how the ancient Maya attempt to reorganize themselves and the site based on the external factors contributing to decline. The excavations of Plaza A-I are an attempt to examine the physical layout of the site as a manifestation of reorganization.

CHAPTER 4: METHODS

The methods employed for this research are consistent with the procedures laid out by the Belize Valley Archaeological Reconnaissance (BVAR) project. This chapter details these methods and how they were applied and modified to accomplish this research.

Excavation

We targeted Plaza A-I as the focus of our excavations. The excavations were placed primarily within the plaza, with the exception of a single operation located along the alley that provided access to the plaza from the Northeast. Within the plaza, excavations investigated three platforms located at the base of the monumental architecture bordering the plaza. On the north side of the courtyard, two of the platforms are located along the southern base of Str. A1. The third platform is located on the south side of the Plaza, along the northern base of Str. A6. Two additional excavation units were placed along the western bases of Structures A3 and A4. Unless otherwise noted, all excavations terminated after exposing bedrock. Measurements for all excavation unit dimensions, depths, and illustrations were produced using a metric scale. Unit sizes and depths will be discussed on an individual basis in a later chapter.

For all excavation units, we employed a lot and level system. Levels were defined as cultural or natural. Cultural levels were typically defined by the exposure of a formal plaster floor. Natural levels were defined by a change in soil composition or color. No arbitrary levels were used. Lots were used to group collections of artifacts for later analysis. Lots could change between levels but were always changed if a new level was begun.

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During excavation, matrix and materials recovered were screened through a 1/4th inch screen. No features or special finds were located necessitating the use of finer screens. All artifacts were collected except for ceramic sherds smaller than a US quarter. All artifacts recovered were bagged by artifact types and labeled according to the lot and level they came from and the date they were recovered.

Cleaning and Processing Artifacts

Laboratory processing and analysis was conducted in the field at an onsite facility. The facility serves as storage for artifacts and excavation equipment as well as shelter from the elements. After artifacts were recovered during excavation, bags of uncleaned artifacts were brought back to the lab. Each bag was cleaned, counted, and, depending on artifact type, separated into diagnostic and non-diagnostic categories. Artifacts were hand washed according to BVAR standards. Ceramics, flaked stone, obsidian, and slate were washed using water and brushes. Fauna and ground stone were cleaned with a dry brush.

All ceramics were separated by diagnostic and non-diagnostic characteristics. Diagnostic features include form attributes, presence of a rim, and decoration. All ceramics were counted, but only diagnostic sherds were used in later analysis. Non-ceramic artifacts were all considered diagnostic, counted, and analyzed. After processing and counting, artifacts were placed in new bags, cataloged, and stored in five-gallon plastic, food grade buckets.

Artifact Analysis

Ceramic analysis is one of the major data collection techniques used for this research. Ceramic analysis provides temporal data in the form of a relative dating process. Additionally, vessel form can suggest function of a particular space or structure. For these reasons, vessel type and form were recorded whenever possible. Ceramic analysis was conducted using James Gifford's 1976 seriation of ceramics from Barton Ramie. Gifford's type-variety-mode method of analysis remains the standard for ceramic analysis in the Belize Valley, and allows researchers to conduct inter-site comparisons of ceramic assemblages.

Lithic analysis provides a typology for functional and/or production analysis. Lithic analysis was conducted on all flaked stone recovered from all excavations. Each flake was categorized as primary, secondary, tertiary, core, shatter, biface, tool, or utilized flake. Primary flakes possess more than 50% cortex on the dorsal surface. Secondary flakes possess less than 50% cortex on the dorsal surface. Tertiary flakes possess no cortex. Shatter was defined as angular pieces of flaked stone with no definable features of a typical flake. Utilized flakes consist of any flake with use wear present on an edge.

Faunal analysis was conducted by BVAR zooarchaeologist, Dr. Chrissina Burke, and student assistants and staff. Few faunal remains were recovered, resulting in a lack of significant data useful for statistical analysis.

The ceramic, lithic, and faunal analysis will be detailed by the individual units and lots that they were found in a later chapter. These data will also be synthesized into a holistic analysis and corresponding results in a later chapter as well.

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CHAPTER 5: EXCAVATION AND ANALYSIS

Three operations were undertaken during the 2018 field season. All excavation units (EU) were assigned to one of these operations (Figure 5.1). Although the majority of excavations targeted the plaza level, each operation was defined by the monumental structure associated with the excavation. We targeted non-monumental features and access points to Plaza A-I as the focus of our excavations. The excavations were placed primarily within the plaza, with the exception of a single operation located along the alley that provided access to the plaza from the Northeast. Within the plaza, excavations penetrated three platforms located around the plaza. Two of the platforms are located along the Southern face of Str. A1, at the North of the plaza. One of the platforms is located along the Northern face of Strs. A3 and A4. These two units penetrated the plaza floor. Unless otherwise noted, all excavations terminated after exposing bedrock. Measurements for all excavation unit dimensions, depths, and illustrations were produced using a metric scale. Unit sizes and depths will be discussed on an individual basis later in this report.

For all excavation units, a lot and level system was employed. Levels were defined as cultural or stratigraphic. Cultural levels are typically defined by the presence of a formal floor of plaster or packed earth. Stratigraphic levels were defined by a change in soil composition or color. No arbitrary levels were used. Lots were used to group collections of artifacts for later analysis. Lots could change depending on the contents of an excavation. Changes in lots can result from the presence of concentrations of artifacts, soil stains, presence of archaeological features, etc. Lots could change independently of levels but were always changed if a new level was opened.



Figure 5.1. Map of Plaza A1 showing excavation unit locations, color coded by operation. Map by Jaime Awe, modified by author.

Operation A1-2018

Operation A1-2018 focused on two objectives: penetrate the platforms abutting the southern face of Str. A1 and clear the eastern face of Str. A1. Excavation of the two platforms provides information on construction sequences, chronology, and potential function. The purpose of excavating the collapse on the eastern face of Str. A1 was to provide information on the potential restriction of access between Plaza A-I and A-II as a result of the wall extending from Str. A1 and A3. Additionally, the excavation of the eastern face of Str. A1 opened access for modern tourists moving around the site. Operation A1-2018 will be discussed by unit. Artifact types will be mentioned, but detailed counts and analysis will be discussed in a following section.

EUA1-1 through A1-6

Excavation units A1-1 through A1-6 were located along the eastern face of Str. A1. The entire face was excavated as a single action (Figure 5.2). EU A1-1 through A1-6 were situated as to delineate any artifact concentrations or features that were discovered. EU A1-1 is 6m x 3m along a north/south axis. A1-1 was extended by one meter to the south to include the wall extending from the southeast corner of Str. A1. EU A1-2 through A1-5 are all 5m x 3 along a north/south axis. All units were excavated with a single lot and level. The units terminated after exposing the plaza floor. Artifact types recovered from these units include ceramics, chert, marine shell, slate, and ground stone. Special finds from these units include a Miseria Appliqued censer, two chert bifaces, an anthropomorphic figurine arm, an olivella shell tinkler, and a slate eccentric (Figures 5.3 and 5.4). The excavations exposed the intact basal facing stones along the east face of Str. A1. The intact facing stone were consolidated after the excavations were complete.



Figure 5.2. EU A1-1 (a) at the southern end of Str. A1's eastern face and EU A1-6 (b) at the northern end. Note the wall extending from the southwest corner of Str. A1 (a).



Figure 5.3. Miseria Applique sherds recovered from multiple units along the east face of Str. A1.



Figure 5.4. Images of a ceramic, anthropomorphic figurine arm (left) and a slate eccentric (right). *EUA1-7*

EU A1-7 was a 1x1m unit placed at the centerline of Str. A1's eastern face. The eastern edge of the unit abutted the structure. The purpose of the unit was to provide chronological and spatial information about Str. A1 in relation to the plaza floor. The unit penetrated down approximately 30cm before exposing bedrock. Two additional floors were located below Floor 1. Few artifacts were recovered from each level. Non-diagnostic ceramics were the only artifacts recovered below Floor 1 and Floor 2. Below Floor 3 several non-diagnostic ceramics and a single chert flake were recovered. This test unit provided little additional data for the greater understanding of Str. A1.

EUA1-8

EU A1-8 was a 1.5x4m unit along an east/west axis. The unit extended westward from Str. A1's central stair. The purpose of this unit was to expose the southern face and corners of the platform (referred to as Platform 1) to the southwest of Str. A1. The excavation was conducted as a single lot and level, ending after exposing the platform and plaza floor. Unfortunately the

southwestern corner of the platform was not found. The facing stones ended after approximately three meters (Figure 5.5). Another unit, A1-9, was opened to test for the southwest corner of the platform. The exposed platform extended 50cm past Str. A1's stair, into the plaza. Ceramics were the only artifact type found during the excavation.



Figure 5.5. Plan map of Platform 1 exposed by unit A1-8. Note how the facing stones cease towards the western end of the unit.

EUA1-9

EU A1-9 was a 1x2m unit opened to locate the southwestern corner of Platform 1. The purpose of finding the corner was to establish the center line of the platform for later testing. The excavation consisted of a single lot and level that terminated after exposing an alignment of cobbles and a heavily deteriorated plaza floor. No facing stones, nor corner was found. The alignment of cobbles may have been fill for Platform 1, but further excavations found no similar alignment present within Platform 1. Ceramics and chert flakes were recovered from the excavation.

EUA1-10

EU A1-10 was a 1x2.5m along a north/south axis located at the inset corner of Str. A1's stair and southern face (Figure 5.6). The purpose of the unit was to expose the eastern face of Platform 1. The unit consist of a single lot and level. The eastern face of the platform was well preserved and demonstrated a slight slope to the south from the abutment of Platform 1 and Str. A1 to the plaza level. The eastern face of Platform 1 was offset from Str. A1's stair by approximately 60cm. The space between Platform 1 and the stair was excavated revealing a complete chert biface, an obsidian blade, and several chert flakes.



Figure 5.6. Plan showing the extent of EU A1-10. The chert biface was located to the north of the unit near the inset corner of Str. A1's stair.

EUA1-11

EU A1-11 was a meter wide trench placed at an arbitrary point on Platform 1. The trench was placed at an arbitrary point because no centerline of the platform could be determined without the presence of the southwest corner. The excavation consisted of six lots and six levels. Level 1 of EU A1-11 consisted of the humic layer and accumulated deposition on the top of the platform. Artifacts types included ceramic, chert, and obsidian. The level was terminated after exposing the floor of Platform 1. The floor may have once been plastered, but the floor was so deteriorated that no preserved floor remained.

Level 2 of EU A1-11 continued the trench until reaching what was initially believed to be a second floor to the structure. Lots and levels were changed. Upon further excavation and examination, what was believed to have been a floor was just a change in soil composition. Artifact types recovered from this level include ceramic and chert. Level 3 continued the trench and terminated after exposing a layer of cobble fill. Ceramics and chert were recovered from this phase of excavation. Level 4 continued until reaching the plaza floor below the structure (Figure 5.7). The plaza floor is well preserved throughout the entire excavation unit. Artifact types from level 4 include ceramic and chert.



Figure 5.7. Photo of EU A1-11's exposure of the plaza floor continuing underneath the platform construction.

Level 5 continued below Plaza Floor1 and quickly exposed another floor directly below the first. The presence of the floor directly below the first suggests that Plaza Floor 1 was a replastering of the floor below. Several ceramics were recovered from below Plaza Floor 1. Level 6 continued to bedrock revealing ceramic, chert, and freshwater shell artifacts (Figure 5.8).

EU A1-11 provided the spatial relationships that were the goal of the unit. The relationship of Platform 1 with the plaza floor and Str. A1 revealed that the platform was a late addition to the plaza. Unfortunately, no carbon samples were recovered from the platform fill allowing for a more precise dating. The platform also appears to maintain the slope noted during EU A1-10 excavations.



Figure 5.8. Profile of EU A1-11. Note the slope of the platform from Str. A1 towards the plaza level.

EUA1-12

EU A1-12 was a one meter wide trench placed at an arbitrary point on Platform 2. The purpose of the unit was to determine the construction sequence of the platform and to recover

dateable materials in the form of diagnostic ceramics and carbon samples. Platform 3 was constructed in a single construction phase with no formally prepared floor. Platform 3 was constructed directly on top of the plaza floor abutting Str. A1's terrace (Figure 5.9). The platform had been previously disturbed by conservation efforts to the east of the unit. EU A1-12 continued below the platform to bedrock, revealing a two plaza floors. Plaza Floor 1 is a replastering of Floor 2 directly below (Figure 5.10). Artifacts recovered from EU A1-12 include ceramic, chert, and freshwater shell. No special finds or carbon samples were recovered from the excavation.



Figure 5.9. Photo of EU A1-12's exposure of the plaza floor continuing underneath the platform construction.



Figure 5.10. Profile of EU A1-12. Note the slope of the platform from Str. A1 towards the plaza level.

EUA1-13

EU A1-13 was placed at the centerline of the southern staircase of Str. A1. The goal of this unit was to locate any dedicatory cache associated with the construction of the structure. The unit was a 1x2m unit along a north/south axis abutting the stair. The unit was excavated as a single lot and level as no floors or stratigraphic changes necessitated a change in lot or level. No artifacts were recovered from the excavation. It is likely that an early excavation was placed here by XAP.

EUA1-14

EU A1-14 was placed at the centerline of the northern staircase of Str. A1. The goal of this unit was to locate any dedicatory caches associated with the construction of the structure. The unit was a 1x2m unit along a north/south axis abutting the stair. The unit was excavated as a single lot and level as no floors or stratigraphic changes necessitated a change in lot or level. No artifacts were recovered from the excavation. A modern boot heel was found directly above bedrock indicating that previous excavation had taken place at this location.

Operation A4-2018

Operation A4-2018 focused on excavating two areas near Str. A4. The purpose of the operation was to investigate below the later platform additions to Str. A3 and A4 in an attempt to look for earlier evidence of the joint relationship suggested by the later addition of the platforms (Lewis 1995). Excavations began at plaza level and terminated after reaching bedrock. Aside from the primary goal, the units would provide a construction sequence for the plaza itself, which, based on the excavations below the platforms around the plaza, varied significantly.

EU A4-1

EU A4-1 was a 1.5x1.5m unit placed at the northern inset corner of Str. A4's stair. The unit consisted of six lots and six levels. The excavation revealed a total of five plaza floors and a dense layer of limestone cobbles and boulders. The lowest floor, Floor 5 was approximately 50cm below the current plaza level. Limestone boulders were placed directly above Floor 5, potentially as expedient fill, but the uniform layer of boulders may indicate another possibility (Figure 5.11). Above the boulder layer, Floor 3 and Floor 4 were joined with no fill between, suggesting a replastering event. 10cm above Floor 3 is Floor 2 and Floor 1. The floors have no fill between them suggesting another replastering event. Floor 1 is located directly below a thin humic layer (Figure 5.12). Artifact types recovered from this excavation include ceramic, chert, freshwater shell, and marine shell.



Figure 5.11. Photos of EU A4-1 showing the continuous cobble fill that covered Floor 5.



Figure 5.12. West facing profile of EU A4-1.

EU A4-2

EU A4-2 was a 2x2m unit placed at the plaza level at the junction of Str. A3 and A4. The unit was excavated in five levels. The excavation revealed a total of three plaza floors with no features present. Bedrock was 140cm below the surface. The lowest floor, Floor 3, was approximately 40cm below the surface. Floor 3 was placed above a layer of cobble ballasts. It was noted at this level that Strs. A3 and A4's terraces had basal molding that was covered by later floors (Figure 5.13). Floor 2 was place directly above Floor 3 likely indicating a replastering event.

At Floor 2 the unit was reduced to a 1x2m unit. Floor 1 was approximately 5cm below the surface. As the unit was being cleared of grass for excavation, Floor 1 was revealed. The unit's first level and lot began at Floor 1. EU A4-2 revealed that Str. A3 and A4 both rested on Floor 2 and both had a basal molding that was later covered by Floor 1 (Figure 5.14). Artifact types recovered from the unit include ceramics and chert.



Figure 5.13. Photos showing the basal molding resting on Floor 3 that was subsequently covered by later floors. Also, note the restriction of the unit at this level.



Figure 5.14. West facing profile of EU A4-2.

Operation A6-2018

Operation A6-2018 focused on three main objectives: expose the western side of El Castillo's northern face, test the platforms that flank either side of the central stair, and test for a similar wall that may restrict access to Plaza A-I from the southwest. Testing the platforms would continue the analysis of the non-monumental features. Exposing El Castillo's northern face and northwestern corner would test previously unexcavated areas for similar non-monumental features to those found in the northern and eastern portions of Plaza A-I.

EUA6-1 through A6-5

EU A6-1 through A6-5 exposed the previously unexcavated portion of El Castillo's northern face west of the central stair. The units were 4 meters wide and were intended to delineate any features present and to provide an idea of the distribution of artifacts. Each unit was excavated as a single level that terminated after exposing intact architecture of El Castillo's terraces and the plaza floor. These units exposed portions of the terminal phase architecture of the lowest two terraces. The bottom terrace was well preserved near the base on the plaza floor. The second terrace had a maximum of four courses preserved and a section of plaster floor. The remaining terraces of terminal architecture were poorly preserved and not evident during excavation (Figure 5.15). The penultimate phase of architecture was in much better shape than the terminal architecture. All units ended after exposing the penultimate phase of architecture. Artifact types recovered from these excavations include ceramic, chert, freshwater shell, marine shell, obsidian, limestone, and ground stone.



Figure 5.15. Photo showing the exposure of the lowest terrace of El Castillo and the poor condition of preservation of higher terraces. Photo is facing SW along El Castillo's northern face.

EU A6-6

EU A6-6, a 4x4m unit, was opened to expose the northwest corner of El Castillo. The purpose of the unit was to find evidence of a similar wall that might restrict access to the plaza from Sacbe II. The unit was excavated as a single lot and level to bedrock. Bedrock, in this unit was higher than in other units encountered. Bedrock was at the level of the plaza floor. No plaster floor could be noted, likely a result of degradation and similar characteristics between the plaster floor and limestone bedrock. The northwest corner of El Castillo was located, but no adjoining wall was noted.

EU A6-7

EU A6-7, a 1x4m unit along a north/south axis, was placed along an arbitrary point of the platform (Platform 3) to the east of El Castillo's northern stair. The unit trenched Platform 3 to determine construction phases and its relationship with the El Castillo and Plaza A-I. After trenching the entire platform, the unit was reduced in size to 1x2m to expedite the excavation.

The platform consisted of a single construction phase with an informal packed earth floor. Platform 3 differed from Platforms 1 and 2 in that it was offset from El Castillo's northern face. The platform had cut facing stones on its north and south face. Platform 3 sits directly ontop of the plaza floor (Figure 5.16). Spatial relationships point towards Platform 3 being a late addition to Plaza A-I. Ceramic and chert artifacts were recovered from the platform fill.

Below the platform, four plaza floors were encountered. Plaza Floor 1 was set beneath Platform 3. Plaza Floor 2 was set directly beneath Floor 1, indicating that Floor 1 was a replastering event. A layer of cobble ballast supported Floor 2. Plaza Floors 3 and 4 were placed below the ballast layer, with Floor 3 being a replastering of Floor 4. Bedrock was approximately one meter below Floor 4 (Figure 5.17). Ceramic, chert, and freshwater shell artifacts were found in the levels below platform 3.



Figure 5.16. Photos showing the footprint of Platform 3 being offset from El Castillo's terrace and the plaza floor extending beneath the platform's construction.



Figure 5.17. West facing profile of EU A6-7.

Analysis

Ceramic Analysis

Ceramic analysis was conducted Ceramic sherds recovered from within the fill of Platforms 1, 2, and 3 were minimal, with only 90 sherds being recovered from the platforms. The majority of these came from Platforms 1 and 2. Platform 1 had a total of 47 ceramics, of which seven were diagnostic. The diagnostics from Platform 1 consist of at least one Cayo Unslipped jar and two Mount Maloney Black bowls. Platform 2 contained a total of 36 ceramic sherds, of which two were diagnostic. The diagnostic ceramics represent one Mount Maloney Black bowl and one Belize Red dish. Platform 3 contained a total of seven ceramic sherds, none of which were diagnostic.

All levels of plaza floors contained Spanish Lookout phase ceramics. The ceramic types present beneath the most recent plaza floor included Mount Maloney Black, Belize Red McRae Impressed, Cayo Unslipped, Alexanders Unslipped, Dolphin Head Red, Garbutt Creek Red, and Yaha Creek Cream. Below the lowest plaza floors of Plaza A-I, examples of Middle Preclassic (Jenney Creek phase) ceramic types were present in a mixed context with Spanish Lookout ceramics. Jenney Creek ceramic types represented in the artifact assemblages below the lowest plaza floors are represented by Savana Orange, Reforma Incised, and Jocote Orange-Brown.

The presence of Middle Preclassic Jenney Creek pottery in the site core supports a previous observation made by XAP archaeologists that there was likely a small Preclassic settlement in the area of the site core (LeCount et al. 2002).

CHAPTER 6: RESULTS AND CONCLUSION

The excavation of the non-monumental features at Xunantunich's Plaza A-I investigated a good sample of some of the last construction efforts at the site. The platforms and wall present in Plaza A-I can clearly be dated to the Terminal Classic, but these results are limited to a relative date based on the spatial and architectural relationships between the platforms and wall with the monumental architecture in Plaza A1, as well as the diagnostic ceramic types present in the construction fill of the platforms and plaza floors.

Results

Our excavations revealed that the three platforms were likely all building platforms that were constructed in a single phase. While the function(s) of the platforms is/are difficult to determine based only on their construction style and related artifact assemblage, their overall form suggests that they could be building platforms that may have supported perishable pole and thatch buildings. This is further supported by the fact that Audet (2006) previously discovered a burial beneath one of the platforms in front of Str. A4. The placement of burials beneath the floors of house platforms was a common practice in the Belize Valley and the burial in front of Str. A4 conforms with this tradition (Awe et al. 2017).

As noted above, the platforms within Plaza A-I date firmly to the Terminal Classic period (800 - 900 AD). This is confirmed by the ceramics recovered below the floors of the platforms, as well as those below the final Plaza A floor. The spatial and architectural relationships of the platforms with the monumental structures behind them also indicate that the platforms were among

the last buildings constructed in Plaza A-I. Although it cannot be definitively stated that the platforms were constructed during or just prior to the abandonment of the site without some more absolute dates, the data recovered by our investigations strongly suggest that this was the case. Hopefully, further excavation of the platforms may yield carbon samples for 14C dating to confirm or negate this hypothesis. In spite of the latter, the information gathered on the platforms during the 2018 field season still represents an important contribution to the regional analysis of similar features within western Belize.

Our excavation on the southwestern entrance to Plaza A1 revealed that there was no wall restricting access into the courtyard from this entry point. Previous excavations by the TDP also failed to uncover walls at the northwestern and southeastern points of entry to Plaza A-I (Awe personal communication 2019). The wall at the northeastern access point to the plaza is therefore the only architectural feature that restricted access into the courtyard. Given the latter, and the fact that our relative dates place construction of the wall during the Terminal Classic period, suggests that the wall is coeval in date with the platforms in Plaza A1. It is therefore possible that the wall may have served as an "albarada" or boundary wall, or that its purpose was to block access into the northeastern section of the courtyard where several Terminal Classic platforms had been erected (Awe and Morton n.d.). The latter situation would have provided more privacy for the occupants of the house platforms. It is also worth noting that the low walls identified at both Cahal Pech and Lower Dover are also single walls that blocked access from only one access points into their respective plazas (Awe and Morton n.d.). In both the latter cases, there are also low platforms and evidence for Terminal Classic occupation within the courtyards that the walls bordered. It is, therefore, quite possible that the wall and platforms at Xunantunich reflect a similar pattern to that recorded at Cahal Pech and Lower Dover.

A notable byproduct of the excavations focusing on the platforms provided new details on the construction of Plaza A-I. The northern portion of the plaza, near Str. A1, consisted of a single floor layer with a later replastering. The eastern portion, near Str. A3 and A4 appear to have at least two, possibly three, different floor constructions with two replastering events. The southeastern portion of the plaza, near El Castillo's northern face consisted of two major floor constructions, each with replastering. Plaza A-I did not undergo a uniform growth. All plaza floor levels, containing diagnostic ceramics, date to the Late and Terminal Classic periods. The discrete portions of the plaza excavated for this research demonstrate a need for further testing of the plaza levels to clarify the construction phases of the plaza.

Future Research

Several problems arose during the results of this research. The most glaring difficulty was the lack of a good charcoal sample for radiocarbon dating. This would have provided an opportunity to acquire absolute dates for the construction of the platforms. The lack of carbon samples is likely a result of sampling strategy. To remedy this, future research into this topic should focus on expanding these excavations in an attempt to recover carbon samples. The benefit of expanding this research would allow for a clearer picture of the development of the site. Depending on the accuracy of the date range, radiocarbon dating could corroborate the observations made based on the ceramic assemblages.

The platform to the southwest of the plaza, west of El Castillo's central stairway, remains unexcavated. The reason for not excavating this platform was due to time constraints at the end of the field season, and the ongoing conservation work on El Castillo's northern flank. Investigating this platform in the future would bolster this research and provide additional data for determining the final occupation at the site.

Conclusion

The abandonment of Maya ceremonial centers in the Lowlands marks a significant change and decline in what had been long lasting tradition throughout the Classic Period. The response of the populations that remained or returned to these centers is represented by the reorganization and reuse of space. The data recovered by this research thus suggest that this type of reorganization and reuse of space is represented by the non-monumental features present at Xunantunich's Plaza A-I.

At the site of Cahal Pech, Plaza H and C were locales for Terminal Classic activity and for the final occupation of this site (Awe et al. 2017; Awe et al. n.d.). Both Plaza H and Plaza C are within the ceremonial core of Cahal Pech, and the data recovered at this site suggests that a small group of people attempted to continue occupying the site during the time of its decline and abandonment (Awe and Morton n.d.). A similar scenario is suggested by Awe and Norton (n.d.) for the site of Lower Dover.

Actuncan provides another notable example of non-monumental features, albeit with some minor differences, that were constructed during the last phase of occupation at this Mopan River valley site. Like at Xunantunich, Cahal Pech, and Lower Dover, the Actuncan features are constructed within one of the central plazas at the site. The difference in layout may be a result of the effects of decline on the populations at the individual sites or as a representation of the types of populations that are constructing these minor features. For example, it is possible that there may have been different groups of people occupying the sites at this time. One possibility is that the final occupants of the site were members of the local community that were trying to remain in their city. A second alternative is that these groups were families that were reoccupying the sites. Either possibility, unfortunately, is difficult to determine. In the case of Cahal Pech, strontium isotope analysis of individuals discovered within intrusive Terminal Classic burials were all local (Awe et al. n.d.). It is possible, therefore, that the small groups who continued to occupy these Belize Valley sites during peri-abandonment times were all local. Hopefully, further isotope analyses of other remains will provide additional data that can shed light on either hypotheses.

As noted above, Awe and his colleagues (n.d.) found that the Terminal Classic occupants of the site were intrusively burying their dead in monumental site core buildings that were no longer in use. The process of interring their dead into these structures represents an attempt to associate themselves with the previous inhabitants of the site.

Evidence from Actuncan indicates that the commoner population of the site lasted through the collapse of their own ceremonial center until the Terminal Classic. Mixter argues that the construction of the non-monumental features in the site's main southern plaza represents a resurgence in identity and remembering dynamics of the population. Individuals returned to the ceremonial core of the site and began to construct new features, one of which is attached to a monumental structure. The study from Actuncan provides yet another example of how the Maya at this site maintained their identity and connection to their city even after the decline of the center.

It is important to understand how the construction of the non-monumental features at Xunantunich, and other sites within the Belize Valley sub-region, fit into the previously discussed resilience model. The occupation of Xunantunich in the Late Classic period and the initial construction of the structures that constituted its monumental center would signify the r

phase or exploitation phase. The elements for establishing Xunantunich as a major center are underway. Many of the monumental structures located within the site would have been built during this period and the settlement area would have expanded to accommodate migrants to the area and expanding households.

The conservation phase or *k phase* is marked by the continued modification of Xunantunich's site core, in the form of additions to existing structures. These additions are less significant efforts than those of the previous phase, but do not include the non-monumental features that are the focus of this research. The settlement area of Xunantunich during the conservation phase may have undergone slight changes in growth, diminishment, or alteration, but the population during this phase would remain constant, without much fluctuation. The conservation phase likely represents the longest phase in the resilience cycle at Xunantunich.

The Ω phase or release phase occurs as external factors begin to affect the Maya at Xunantunich to a degree or length of time that their society can no longer continue to function in the same sustained way as the conservation phase. The individual households begin to evacuate the area, a representation of a "revolt" dynamic. Revolt dynamics occurring from small to large scale are exemplified by individuals and small groups of individuals or households leaving the area, which eventually demonstrates a larger change in society. During the release phase of the cycle, structures begin to fall out of use and cease to function as they had in previous periods. An example of this would be Strs. A3 and A4 which appear to no longer be in use in the waning stages of Xunantuinch's occupation.

Finally, the reorganization or α _*phase* occurs. In the case of Xunantunich, these data collected by several projects suggest that some of the inhabitants may have continued to occupy the center beyond the Terminal Classic abandonment of the site core. The construction of the

platforms and the wall within the main public plaza of the epicenter represents an attempt by this community to continue inhabiting their city of origin. Unfortunately, as the population of the site diminished, as did access to a large labor force to call upon for communal construction. For this reason, the Maya may have scavenged cut stones from buildings that had been abandoned or no longer in use, as seen at Str. A13. These stones were used to construct the low wall on the northeaster access in Plaza A, and for the low building platforms on the northern, eastern and southern flanks of the courtyard. Locating their buildings in Plaza A-I allowed them to maintain a connection with their past, and to continue ritual interaction with their ancestors. In many ways, this stage of occupation represents the renewal or reorganization stage in the panarchy model of resilience theory. Following the decline of their community many of the inhabitants of the site abandoned the area. The few that decided to stay then entered a period of reorganization by attempting to make a go of it despite the challenges and effects of the stressors that led to the decline of their civilization. The non-monumental developments in Plaza A at Xunantunich represents an attempt by the Maya to maintain ties to their city, culture and identity in the face of ever-growing external pressures.

WORKS CITED

Audet, Carolyn M.

2006 The Political Organization of the Belize Valley: New Evidence from Baking Pot, Xunantunich, and Cahal Pech. Unpublished Ph.D. Dissertation, Department of Anthropology, Vanderbilt University.

Awe, Jaime J.

- 1992 <u>Dawn in the Land between the Rivers: Formative Occupation at Cahal Pech, Belize and its</u> <u>Implication for Preclassic Developments in the Maya Lowlands</u>. Unpublisahed Ph.D. dissertation, Institute of Archaeology, University of London, England.
- 2008 Architectural Manifestations of Power and Prestige: Examples from Classic Period Monumental Architecture at Cahal Pech, Xunantunich and Caracol, Belize. *Research Reports in Belizean Archaeology* Vol. 5: 159-174.

Awe, Jaime J., Claire E. Ebert, Carolyn Friewald and Kirsten Green.

2017 The Dead Do Tell Tales: Unravelling the Case of Cahal Pech's John or Jane Doe. *Research Reports in Belizean Archaeology*, Vol. 14:213-226.

Awe, Jaime J., Julie A. Hoggarth and James J. Aimers.

2017 Of Apples and Oranges: The Case of E-groups and Eastern Triadic Architectural Assemblages in the Belize River Valley. In *Early Maya E-Groups, Solar Calendars, and the Role of Astronomy in the Rise of Lowland Maya Urbanism*, pp. 412-449. Edited by David A. Freidel, Arlen F. Chase, Anne Dowd, and Jerry F. Murdock. University Press of Florida, Gainesville, FL.

Awe, Jaime J., Julie A. Hoggarth, James J. Aimers, John Douglas, Claire E. Ebert, Christophe Helmke, and W. James Stemp.

n.d. The Last Hurrah: Examining the Nature of Peri-Abandonment Deposits and Activities at Cahal Pech, Belize. Submitted to journal *Ancient Mesoamerica* for Special Section on Problematic Deposits.

Awe, Jaime J. and Shawn G. Morton

n.d. All in All It's Not Just Another Brick in the Wall: Examining the Diverse Functions of Wall Architecture in Western Belize. Book Chapter for volume: "*The Ties That Bind and The Walls That Divide*," Edited by Thomas Guderjan and Jennifer Mathews, University of Colorado Press.

Deevey, E. S., Don S. Rice, Prudence M. Rice, H.H. Vaughn, Mark Brenner, and M.S. Flannery.

1979 Mayan Urbanism: Impact on a Tropical Karst Environment. Science 206:298-306.

Demarest, Arthur A.

1996 War, Peace, and the Collapse of a Native American Civilization. In *A Natural History of Peace*, edited by Thomas Gregor, pp. 215-248. Vanderbilt University Press, Nashville.

Douglas, John E. and Linda J. Brown

2017 Plaza H, Cahal Pech: Field and Laboratory Research. In The Belize Valley Archaeological Reconnaissance Project: A report of the 2016 Field Season, pp.80-112. Report on file at the Belize Institute of Archaeology, Belmopan.

Ebert, Claire E. and Jaime J. Awe

2017 Reconstructing Preclassic Maya Household Economies in the Belize River Valley. *Research Reports in Belizean Archaeology* Vol. 15:65-78.

Etheridge, **Bevin**

1995 Excavations at Group B, Structures A-2, A-3, A-4, and the Stela House (A-16). In Xunantunich Archaeological Project: 1995 Field Season, pp. 71-82. Report on file at the Belize Institute of Archaeology, Belmopan.

Gann, Thomas

- 1925 *Mystery Cities*. Charles Scribner's Sons, New York.
- 1928 Discoveries and Adventures in Central America. Duckworth, London.

Guerra, Rafael A. and Renee Collins

2016 Lower Dover Site Core Excavations. In The Belize Valley Archaeological Reconnaissance Project: A Report of the 2015 Field Season, pp. 224-239. Report on file at the Belize Institute of Archaeology, Belmopan.

Helmke, Christophe, Jaime J. Awe, and Nikolai Grube.

2010 Carved Monuments and Inscriptions of Xunantunich: Implications for Terminal Classic Sociopolitical Relationships in the Belize Valley. In *Classic Maya Provincial Politics: Xunantunich and Its Hinterlands*, ed. by Lisa J. LeCount & Jason Yaeger, pp. 97-121. University of Arizona Press, Tucson.

Hoggarth, Julie, Mathew Restall, James W. Wood, and Douglas J. Kennett

2017 Drought and Its Demographic Effects in the Maya Lowlands Current Anthropology 2017 58:1, 82-113.

Holling, C.S, Lance H. Gunderson, and Gary D. Peterson

2002 Chapter 3 Sustainability and Panarchies. *In Panarchy: Understanding Transformation in Human and Natural Systems*, edited by Lance H. Gunderson, pp. 63-102. Island Press, Washington D.C.

Jamison, T. R.

1992 The Excavation of Structures A-1 and A-4. In Xunantunich Archaeological Project: 1992 Field Season, pp. 25-47. Report on file at the Belize Institute of Archaeology, Belmopan.

1996 Excavations on the West Side of Plazas A-I and A-II. In Xunantunich Archaeological Project: 1996 Field Season, pp. 59-70. Report on file at the Belize Institute of Archaeology, Belmopan.

Jamison, T. R. and G. A. Wolff

1994 Excavations in and around Plaza A-I and Plaza A-II. In Xunantunich Archaeological Project: 1994 Field Season, pp. 22-34. Report on file at the Belize Institute of Archaeology, Belmopan.

LeCount, Lisa J., Jason Yaeger (editors)

2010 Classic Maya Provincial Politics: *Xunantunich and its Hinterlands*. University of Arizona Press, Tuscon.

LeCount, Lisa J., Jason Yaeger, Richard Leventhal, and Wendy Ashmore

2002 Dating the Rise and Fall of Xunantunich, Belize. *Ancient Mesoamerica* 13(1):41-63.

- Leventhal, Richard M., S. Zeleznik, T. Jamison, L. LeCount, J. O. McGovern, J. Sanchez, and A. Keller
- 1993 Xunantunich: A Late and Terminal Classic Center in the Belize River Valley. In Xunantunich Archaeological Project: 1993 Field Season, pp. 7-16. Report on file at the Belize Institute of Archaeology, Belmopan.

Leventhal, Richard M.

- 1994 The Xunantunich Site Core: 1994 Research and Work. In Xunantunich Archaeological Project: 1994 Field Season, pp. 1-9. Report on file at the Belize Institute of Archaeology, Belmopan.
- 1996 The End at Xunantunich: The Architecture and Setting in the Terminal Classic. In Xunantunich Archaeological Project: 1996 Field Season, pp. 9-16. Report on file at the Belize Institute of Archaeology, Belmopan.

Lewis, Brandon

1995 Excavations of Structures A-3 and A-4. In Xunantunich Archaeological Project: 1995 Field Season, pp. 61-70. Report on file at the Belize Institute of Archaeology, Belmopan.

MacKie, Euan W.

1961 New Light on the End of Classic Maya Culture at Benque Viejo, British Honduras. *American Antiquity* 27:216-224.

Pritchard, James C., C. Mathew Saunders, Christy W. Pritchard, and Catharina Santasilia.

2011 Excavation at Cahal Pech's Structures C-3 and C-6: Results of the 2010 Season. In The Belize Valley archaeological Project: A report of the 2010 Field Season, pp. 15-28. Report on file at the Belize Institute of Archaeology, Belmopan.

Redman, C.L.

2005 Resilience Theory in Archaeology. American Anthropologist, 107:1 70-77.

Redman, C.L. and A.P. Kinzig

2003 Resilience of past landscapes: resilience theory, society, and the Longue Dureé. Conservation Ecology 7(1): 14.

Robin, Cynthia

1994 Form, Function and Meaning: 1994 Excavations on El Castillo, Structure A-6. In Xunantunich Archaeological Project: 1994 Field Season, pp. 48-64. Report on file at the Belize Institute of Archaeology, Belmopan.

Santasilia, Catharina E. and Douglas Tilden

2016 2015 Excavations of the Eastern Triadic Shrine at Xunantunich, Belize. In the Belize Valley Archaeological Reconnaissance Project 2016 Field Report, pp. 118-138.

Shaw, Justine M.

2003 Climate Change and Deforestation: Implications for the Maya Collapse. Ancient Mesoamerica, 14(1):157-167.

Tilden, Doug, Kelsey Sullivan, and Jaime J. Awe

2017 Preliminary Investigations of Structure A7 by the Xunantunich Archaeology and Conservation Project. In the Belize Valley Archaeological Reconnaissance Project 2017 Field Report, pp. 293-304.

Webster, David

2002 *The Fall of the Ancient Maya: Solving the Mystery of the Maya Collapse.* Thames and Hudson, London.

Zanotto, Hannah H. and Jaime J. Awe

2017 The Xunantunich Archaeological and Conservation Project: A Progress Report of the Second (2016) Field Season. In the Belize Valley Archaeological Reconnaissance Project 2017 Field Report, pp. 289-292.

Zeleznik, Scott

1993 The 1993 Excavations and Consolidation of Structure A-1. In Xunantunich Archaeological Project: 1993 Field Season, pp. 29-55. Report on file at the Belize Institute of Archaeology, Belmopan.