

CACHES IN THE COURT: THE IDEOLOGICAL SIGNIFICANCE OF ECCENTRIC
LITHICS FROM BALLCOURT 2, XUNANTUNICH

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ABSTRACT

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Xunantunich was a prominent Maya city in the Belize River Valley during the Late (600-800 AD) and Terminal (800-900 AD) Classic periods. Excavations in 2018 by the Xunantunich Archaeology and Conservation Project (XACP), a branch of the Belize Valley Archaeological Reconnaissance Project (BVAR), revealed a total of four caches containing over 80 eccentric lithics, three (3) stingray spines, several freshwater snail shells, and two ceramic vessels, placed lip-to-lip, that were deposited along the playing alley of Ballcourt 2. Eccentric lithics are stone objects that the Classic Maya knapped into unusual, nonutilitarian forms. Their shapes represent human, animal and celestial figures and they are not used in domestic or utilitarian settings. This research analyzed the eccentrics and associated artifacts from the Ballcourt 2 caches to determine their ideological significance. My research provides evidence that the eccentrics at Ballcourt 2 were cached in groups of deified numbers, and were arranged as cosmograms, or physical and symbolic representations of the layout of the Maya universe. My research contends that eccentrics were important symbols that act as characters in retelling the story of the Maya cosmos, and that their purpose was to materialize concepts of Maya cosmology, religion, and political power into the physical world. The act of caching eccentrics provided life-sustaining substances to the monumental architecture under which they lay, protecting and memorializing them, connecting them to the past and present, and opening portals to the Otherworlds.

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Chapter 1: Research Questions and Thesis Overview

The study of eccentric lithics in the Maya world has been going on for decades as archaeologists continue to uncover caches of the knapped lithics beneath significant spaces and structures all across the Mundo Maya. Eccentric lithics are obsidian and chert objects knapped into human, animal, and celestial forms that were made specifically for the purpose of burial in deposits, called caches, of important items beneath monuments, stelae, and stairways. Caches of eccentrics have been found all across the lowlands, highlands, and intermediate zones and range from the Preclassic to the Terminal Classic periods. The ancient Maya city Xunantunich, located in the Maya lowlands in the Upper Belize River Valley (UBRV), is a site of particular interest when discussing eccentric lithics. The caching of eccentrics was a pervasive practice at Xunantunich that flourished during the Classic Period. Caches at Xunantunich are associated with the construction of axial stairways and monumental architecture, the erection of stelae, and in the site's ballcourts. Excavations at Ballcourt 2 in 2018 uncovered four (4) large caches of eccentric lithics and associated artifacts: among the largest ever uncovered in the Maya world. A previous excavation in 1994 also revealed skeletal remains in the center of the playing alley that was contemporaneous with the four caches of eccentrics. The caching of these symbolic items to the north and south of the human remains speaks to the importance of this ballcourt and of the caching practices as a whole at Xunantunich. Based on these previous findings, my thesis project focuses on the following questions:

1. What is the ideological significance of eccentrics at Ballcourt 2?
2. Why were these items cached along the centerline of Ballcourt 2?
3. What role did eccentrics play in Maya society?
4. Why are eccentrics typically found in association with construction events and monumental architecture?

To address these questions, during the summer of 2021, I visited Belize for over four weeks where I researched, analyzed, measured, and photographed the eccentrics and associated artifacts from the caches at Ballcourt 2 to record the artifacts and discuss their ideological significance and social functions. This work demonstrated that eccentric lithics were used to bring intangible aspects of Maya religion, cosmology, and politics to life and that their burial in caches sustained and legitimized the sites under which they lay.

The four caches at Ballcourt 2 in Xunantunich contained chert eccentrics knapped into ancestor profiles (Fig. 1), animal figures (Fig. 2), figures representing celestial objects (Fig. 3), cave portals and ball forms, (Fig. 4), lightening effigies (Fig. 5) quadripartites and tripartites (Fig. 6), and other abstract figures (Fig. 7). The obsidian eccentrics in the caches were notched, knife-like, sickle forms, and included several unmodified obsidian blade cores (Fig 8).



Figure 1 Sample of ancestor profile figures from Ballcourt 2.



Figure 2 Sample of animal figures from Ballcourt 2.



Figure 3 Sample of celestial forms from Ballcourt 2.



Figure 4 Cave portal and ball figure from Ballcourt 2.



Figure 5 Sample of lightning effigies from Ballcourt 2.



Figure 6 Sample of quadripartite and tripartite forms from Ballcourt 2.

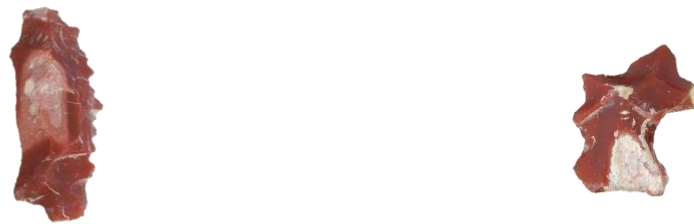


Figure 7 Sample of abstract figures from Ballcourt 2.



Figure 8 Sample obsidian eccentrics in Ballcourt 2. From left to right the forms are: notched form, knife-like form, sickle form, unmodified polyhedral obsidian blade core.

I begin my background research in **Chapter 2: Maya Cosmology**. To begin the discussion on the ideological significance and social function of eccentric lithics, it was important that I gain a better understanding of the Maya worldview. Topics of discussion in Chapter 2 include the animate soul, dualism and reciprocity, ritualism, ancestor veneration, numerology and the Maya calendrical system, as well as the importance of the ballgame and its representations in Maya codices. Without framing my research in the realities of the people of Xunantunich at the time, interpreting the significance and function of these artifacts could create misrepresentations of the Maya worldview. The overall purpose of this chapter is to provide a concise overview of the Maya cosmos so that the interpretation of the eccentric lithics in Ballcourt 2 is accurately framed in their cosmological reality.

Chapter 3: Xunantunich, Belize continues my background research and examines Xunantunich's history, political affiliations, monumental architecture, and describes the

ballcourts at Xunantunich. The purpose of this chapter is to contextualize Xunantunich in its environment, describe its florescence as a strong political contender in the Lowlands, demonstrate that monumental architecture was used as a powerful tool to express political affiliation and power, and to describe the architecture of both ballcourts at Xunantunich.

In-depth discussion of eccentric lithics begins in *Chapter 4: Eccentric Lithics*. The chapter begins by discussing the production of chert and obsidian eccentrics by briefly outlining raw material sourcing, fracture mechanics, and knapping methods. Eccentric lithic caching in the Maya lowlands as a whole is discussed, based on research by Iannone (1993) and Sullivan (2017). I then move on to the eccentric lithic caches recorded at Xunantunich to demonstrate the pervasiveness of caching behaviors at the site. Finally, the caches at Ballcourt 2 are recorded in detail including their archaeological contexts, the eccentrics and associated artifacts, photographs in situ, and corrections made to the initial research conducted on the eccentrics by Feely (2019).

Chapter 5: Methods details the methods utilized during the analysis of the caches of Ballcourt 2. I describe my timeline while conducting initial research in Belize and detail my photographic techniques, use-wear analysis, and the mechanics of my data collection. I also took detailed measurements of the eccentrics dimensions; this metrical analysis is beyond the scope of the thesis research reported here and will be part of the future analytical process.

My analysis of the eccentric lithics in *Chapter 6: Analysis* begins with the results of my use-wear analysis. The eccentrics are then detailed cache-by-cache. For each cache I include relevant photographs of the caches and associated artifacts, a data table which records morphological forms, and an analysis of the represented morphologies and their ideological significance and symbolic representations. In my analysis I demonstrate that the caches are spatially arranged to represent important numbers and to reflect the layout of the partitioning of the Maya universe. The morphological forms are demonstrated to be symbols that retell

the story of the Maya cosmos, and their physical forms represent the creatures, people, and the powerful forces that exist in Maya cosmology.

Finally, my concluding chapter wraps up the research and describes the ideological significance and social functions of the eccentric lithics at Ballcourt 2 as demonstrated by the research. In this chapter I also discuss limitations and lines of future research.

Chapter 2: Maya Cosmology

When studying the ideological significance of objects in the Mundo Maya, it is critically important to frame archaeological interpretation within the Maya worldview. Without a proper understanding of the Maya worldview, the interpretation of the symbolic significance of eccentric lithics would be useless and potentially steeped with ethnocentric ideas. In this chapter, I review the Maya Cosmos, which is the perceived structure and ideology of the universe in which the Maya lived. Important concepts such as the Maya soul, dualism and reciprocity, ancestor veneration, numerology, and the calendrical system are discussed to demonstrate that the Maya utilized these concepts of the cosmos in all aspects of society, and created symbolic reflections of them in the physical world. I also discuss the ballgame and the origin myth that demonstrates that the ballgame was deeply connected to important cosmological concepts. This review of Maya cosmology informs my interpretation of the ideological significance and social function of the eccentric lithics at Ballcourt 2.

The Maya Cosmos

Decades of anthropological and archaeological research suggests that the Maya world was highly structured and elaborately conceptualized (Coe & Hutson 2015; Friedel et al. 1993). The Maya understood their universe to be three-tiered, composed of the Upper, Middle, and Underworld (Ferguson 1999). The universe was further divided into layers, with 13 layers of the Upperworld, and 9 layers of the Underworld. Each layer was associated with a god or deity which presided over the Upper and Underworlds. The Upperworld was a place inhabited by the ancestors who had defeated the Lords of Death in *Xibalba*, the watery Underworld where the gods lived and where the dead travelled (Ferguson 1999, 118). Between the layers of the Upperworld and the Underworld lay the human realm, or the Middleworld, which was conceptualized as a great turtle or caiman which floated on the primordial waters of the world (Coe & Hutson 2015; Demarest 2004; Ferguson 1999). The

human realm was quadripartite, with each cardinal direction associated with a color. Red was associated with the east and the rising sun, black associated with the west and the dying sun, white associated with the north, and yellow associated with the south (Coe & Hutson 2015; Demarest 2004). Laying at the center of the Maya cosmos was the world tree, *yaxte'* or *wakah-chan*, which was associated with a blue-green color (Coe & Hutson 2015). This world tree extended through the three realms, functioning as the central axis through which the entire universe was connected. The layers of the universe had been created by the gods, who laid down three hearthstones, one for each of the three layers of the universe, as they created the first humans (Ferguson 1999; Freidel et al. 1993). The world tree was also an axis of creation as it had been erected by First Father, the Maize God, to separate the sky from the earth, creating the universe as the Maya knew it (Ferguson 1999; Freidel et al. 1993).

The Animate Universe and the Maya Soul

Research by Coe & Hutson (2015), Friedel et al. (1993), and Maya texts (Christenson 2007) support that the Maya lived in an animate world, where everything had spirit imbued upon it. Items that the western world may consider to be inanimate were living to the Maya (Coe & Hutson 2015). The human soul was perceived as an animate object which could be possessed by animals and manufactured items (Fitzsimmons 2009). For the Tzotzil Maya, the human body was composed of two spiritual parts, the inner soul or shadow, and the animal spirit companion. The inner soul was composed of thirteen parts and could be lost through various conflicts, a serious occurrence that could lead to sickness or death (Fitzsimmons 2009; Freidel et al. 1993). Tzotzil souls could travel outside of the body when unconscious, sleeping, having sex, or when ill (Fitzsimmons 2009). The animal spirit could be seduced or held captive by evil spirits or gods. The protection of one's soul was pivotal in these communities. The soul was a universal concept to the Maya and it was believed that souls reside within hills, mountains, plants, salt, household fires, and other objects of importance

(Freidel et al. 1993). Manufactured items, including ceramics, tools, masks, and monuments, were perceived as animate forces as well. Upon the termination of manufactured animate objects, the spirit of these objects could be released by intentionally smashing, damaging, or destroying them. The archaeological record at Xunantunich demonstrates that these killed or terminated objects would sometimes be piled up or buried at specific locations within the site, intended as supernatural offerings (Awe et al. 2020b). Terminated deposits are also seen in caves in the Maya Lowlands, like in the grand cave Actun Tunichil Muknal, which has hundreds of killed ceramics alongside human sacrificial victims, stelae, and other artifacts (Awe 1998). At Xunantunich and other Belize Valley sites, deposits of terminated artifacts are referred to as “peri-abandonment deposits” (Awe et al. 2020a,b). Ceramics, obsidian blades, jewelry, imported sea stones, and stone tools in these deposits were ritually smashed and deposited along the walls of structures after they had been abandoned, indicating that the Maya returned to sites that were no longer occupied to ritually bury important objects and release the spirits imbued in them.

Eccentric lithics are a unique object when discussing concepts of animism. Their animal, human, and celestial forms certainly represented animated objects in the Maya world, and their prevalent ritual functions would assume that they were animated and imbued with spirit, however, eccentrics are rarely ever found broken or damaged (Iannone 1993). There is no evidence that eccentrics were ritually terminated before being buried in caches, but rather that they served their purpose as living objects beneath important sites, their spirit protecting the site under which they lay. Terminating eccentrics would perhaps run contrary to their intended function.

Dualism and Reciprocity

Dualism and reciprocity were important concepts among the Maya. The *Popol Wuj*, a sacred book of the K'iche' Maya, recorded that the gods desired to create humans who would

reciprocate their love and care by providing them with nourishment (Christenson 2007). The gods tried and failed several times to create humans who could nourish them, so the humans were destroyed or turned into monkeys. Finally, the gods created humans from maize at the three-hearthstone place and they were successful. The gods provided the humans with rain and crops, and the humans reciprocated with worship and prayer and sustained the gods with bloodletting and sacrifice, and thus time cycled on (Christenson 2007).). Blood was conceptualized to contain a life force of the universe called *ch'ulel*, which connected humans to ancestors and deities (Demarest 2004; Freidel et al. 1993). *Ch'ulel* was offered through royal bloodletting and the sacrifice of humans and animals. *Ch'ulel* was also found in obsidian, red ochre and chert, sperm, spit, and bloodletting tools. Warfare was an important act of sacrifice because captives would be taken and sacrificed in public rituals to offer the gods *ch'ulel* in the form of blood while solidifying the power of the warrior Kings responsible for the victory.

Human souls were conceptualized as dualistic, capable of both good and evil. Gods had a dualistic nature as well and were capable of both benevolence and malevolence (Demarest 2004). If the gods were not pleased with the worship and offerings that they received they were capable of punishing the Maya with drought, crop failures, or other hardships. Gods held multiple associations with life and death, day and night, and rulers carefully studied astronomical and ritual calendars to determine the appropriate rites and rituals to ensure the successful future of crops and the health of individuals, families, and the city-state (Demarest 2004).

Ritualism

Maya kings and elites were, in a way, religious specialists and shamans. They were the intercessors of the realms of the cosmos, and the embodiment of the gods themselves (Freidel et al. 1993, 183). Divine Kings, or *ajaws*, were the incarnation of the central axis of

the universe and possessed the ability to communicate directly with the Otherworlds (Ferguson 1999). Iconography and architecture placed rulers at the axis of the universe (Freidel et al. 1993). Maya kings designated themselves as divine rulers who could communicate with the Otherworlds by participating in rituals and inducing visions. Visions were induced in several ways. The consumption of mind-altering substances such as tobacco, alcohol, and possibly plants and animals with psychotropic properties was one way in which rulers would communicate beyond the earthly realm. Bloodletting, a form of auto-sacrifice, was perhaps the most important way in which rulers induced visions and communicated with the gods. Rulers completed this auto-sacrifice by piercing the penis, tongue, or cheeks with an obsidian blade, bone needle, or stingray spine and dripping the blood onto sheets of paper. The blood-soaked parchment would be burned, and the smoke that rose from the bowl called forth ancestors and deities, or “vision serpents” who would converse with the rulers (Freidel et al. 1993). This act was reciprocal in nature, as the blood of the rulers fed the gods, and the gods fed the lords with knowledge, successful harvest, or rain. Sacrificial rituals were especially important during times of drought, political unrest, and other unstable situations.

Public rituals were an important way for the king to engage with the community and reinforce his cosmic and military power. Public rituals usually took place in celebration of the end of a calendrical cycle or the erection of new monuments and often included the sacrifice of captives and royal bloodletting (Demarest 2004). The architecture of temples, great courtyards, and ballcourts identify them as centers for sacred and sacrificial public rituals (Demarest 2004). The physical settings for these public rituals reflected Maya cosmology in many ways. Ceremonial centers’ architecture reflected astronomical knowledge, like E-groups, which were constructed with precise solar alignments to record the passage of the solstices and equinoxes (Freidel et al. 1993; Demarest 2004). They were also constructed to represent sacred mountains (*witz*) where ancestors and deities resided in caves and springs

(Demarest 2004). By reflecting Maya cosmology in iconography and monumental architecture, the Maya integrated religious, astronomical, and ideological beliefs into the community while executing public rituals that allowed for the passage of time. These symbolic reflections of the cosmos were prevalent among the Maya and will be further addressed during the discussion of eccentrics and their symbolic reflections of the cosmos.

Ancestor Veneration

The veneration of ancestors was central to Maya religion and ideology for both elites and commoners alike. The Maya maintained close proximity and an open line of communication between the living and dead (McAnany 2013). Ancestors were buried under the floors of their houses, in residential shrines, and within large funerary pyramids in the center of villages and cities, depending on their status (McAnany 2013; Demarest 2004; Fritzsimmmons 2009). Ancestor shrines with idols were prevalent in households or household plaza groups. Ceremonies in which food, clothing, and incense were offered to nourish the ancestors in the Otherworld would occur at these shrines (McAnany 2013). Ancestors had an impact on the futures of their lineages and could provide their families with knowledge and prosperity when properly nourished (Fritzsimmmons 2009). Ancestors were often depicted in iconography as looking down upon rulers from the Upperworld, protecting and guiding the future of the cities under which they were interred (McAnany 2013; Friedel et al. 1993). The great temples which served as royal tombs were often eastward-facing shrines so that the Kings could rise again with the sun. These great temples were aggrandized versions of household shrines, and the worship of deceased kings was ancestor worship writ large (Demarest 2004: 176). Bloodletting rituals occurred at these temples, and even at shrines in the household as offerings for ancestors (McAnany 2013). Lithic eccentrics were sometimes chipped into profiles that are often associated with the faces of deceased ancestors. Their

burial in caches around important monuments demonstrates the importance of ancestors in protecting the well-being of the city-state (McAnany 2013).

The Maya Calendar

The Maya Calendrical System

The Maya were masters at observing the movement of celestial bodies across the sky. From these observations, several calendars were devised which guided daily and ritual life and allowed incredibly accurate astronomical calculations to be calculated for the past and future. The Maya calendar systems were cyclical, meaning that events in the present were linked to events in the past and future. The solar calendar, *Haab*, was a 365-day calendar which was composed of 18 “months” or *winals* and 20 “days” or *k’ins*, plus an additional month of 5 days called *wayeb* (Coe & Hutson 2015; Demarest 2004). *Wayeb* was a period of celebration for the completion of the 365-day cycle but was sometimes conceptualized as a dark and unstable time, where rituals must be completed to appease the gods and continue the cycle of time. The cycle began with 1 *pop*, then continued to 2 *pop*, 3 *pop*, until 20 days were reached, then it continued with 1 *wo*, 2 *wo*, 3 *wo*, and so forth through the 18 months, not including the additional month *wayeb*. This could be compared to the measurement of time in the Gregorian calendar as 1 January, 2 January, 3 January, and onto 1 February, 2 February, 3 February. A 260-day calendar cycle called *Tzolkin* was used as a sacred or ritual calendar. The *Tzolkin* calendar was composed of the succession of numbers 1 through 13 assigned to 20 named days which each held specific spiritual associations and significance (Demarest 2004). This cycle began with 1 *K’an*, then 2 *Chik’chan*, and 3 *Kimi*, which could be compared to our own calendar with 1 Monday, 2 Tuesday, 3 Wednesday, etc. This calendar was not associated with any astronomical phenomena, but the combination of 13, representative of the layers of the Upperworld, and 20, the base number within their vigesimal mathematical system, were combined to create this sacred and cyclical calendar.

The resulting 260-day period of the *Tzolkin* is comparable to the time required for human gestation and was used to name children and record their birth date, so this calendar may hold symbolic significance regarding childbirth and fertility (Demarest 2004).

The *Haab* and *Tzolkin* calendars were interconnected to move together like a series of cogs, creating the long-count calendar round. This calendar was a combination of ritual “weekdays” and solar “months” and was complete when the combination of dates in the *Tzolkin* and *Haab* repeated, which only occurred every 52 years or 18,980 days. Every day was given a dual calendar designation like 1 Kan 1 Pop. When compared to the Gregorian calendar, this would be like saying that the date was Monday, January 1. The Maya measured time from an absolute start date that was calculated to the end of the last great cycle which occurred on Ajaw 8 Kumk’u 13.0.0.0.0, or the 13th of August, 3114 B.C (Coe & Hutson 2015). The Maya were able to write and speak about the passage of long periods of time using words that represented exponentially increasing multiples of 20 year periods. The sophistication of the Maya calendrical system provides context to the importance of the Maya’s reliance on numerology as a defining element in their cosmos; with numbers being used as a means of connecting the physical world with the spiritual.

Numerology

The Maya deified numbers and constructed their cities laden with features that brought Maya cosmology and ideology to life (Awe 2008; Demarest 2004). The numbers 9 and 13 repeat frequently within the lithic eccentric caches found across Xunantunich and are also represented in the architecture of the site. Sites including Xunantunich, Caracol, and Cahal Pech feature large range type structures which are constructed with 13 doorways (Awe 2008). These 13 doorways are a likely representation of the 13 layers of the Upperworld. The seventh, central doorways of the 13 provide access beyond the building into private residential and elite courtyard areas, thus delineating a restriction between public and private,

elite spaces (Awe 2008). In Maya cosmology, the seventh level of the Upperworld lies at the zenith of the 13 layers, so this feature could possibly be used to demonstrate the deified status of the elites who live at the summit of these structures (Awe 2008, 169). The number 9 is often seen used in stairway and terrace construction at sites in the Lowlands like Cahal Pech and Xunantunich (Awe 2008; Demarest 2004). Quadripartites (four-part figures) and tripartites (three-part figures) are important symbols in the Maya world due to their associations to the four-part division of the Earthly Realm, and the three-hearthstone place of creation, suggesting that these numbers may have also been important. Because it is demonstrated that the numbers 9 and 13 are representations of the layers of the Under and Upperworlds, numbers seem to be used as a way to symbolically reflect concepts of cosmology in the physical world.

The Ballgame

Popol Wuj Creation Myth: The Hero Twins

To the ancient Maya, ballcourts and ball games were understood as portals to the Underworld (Ferguson 1999: 120). Ballcourts and the ballgame featured prominently in the foundational sacred K'iche' Maya narrative known as the *Popol Wuj*, particularly in its account of the Hero Twins and the resurrection of their father, the Maize God (Christenson 2007). I will retell that epic story using the translation by Christenson (2007). Twins named One Hunahpu and Seven Hunahpu were playing a ballgame on a path that led to the Underworld. The bouncing rubber ball disturbed the gods, and so the twins were summoned to the Underworld. The gods of the Underworld put the twins through trials and tests, of which the twins ultimately failed. The twins were sacrificed and decapitated. Their bodies were buried in the ballcourt of *Xibalba*, the Underworld, except for One Hunahpu's head, which was hung from a tree that began to flower and bear fruit. Depending on what part of the Maya world this story is told, the tree was either the calabash tree or a cacao tree. The

gods forbid the residents of *Xibalba* to visit the fruitful tree where One Hunahpu's head was hung. One day, a daughter of a lord of the Underworld secretly went to see the tree. The skull of One Hunahpu was able to entice the goddess to come near him, and when she was close enough, he spat in her hand, impregnating her with twins. Soon, the young goddess could not hide her pregnancy, and when the Lords of *Xibalba* discovered her secret, she was ordered to be sacrificed. The clever goddess was able to convince her guards to slaughter a deer instead and bring the heart back to her father to prove that she had been sacrificed, allowing her to flee to the earth above and to bear her children. She gave birth to twins, and these Hero Twins, Hunahpu and Xbalanque (also known as One Ajaw and Yax Balam in Yucatek Maya) found their father and uncle's ball-playing equipment and became excellent ballplayers too. The noise they made playing on the same path as their father angered the lords of *Xibalba* once more, and they too were summoned to the Underworld. The twins were put through torture, trials, and tests like their father and uncle before them and although they were smarter and quicker than their father and uncle, they ultimately lost to the evil Lords and were ordered to be sacrificed. Thinking fast, the clever twins asked the gods to throw their bodies in the river of the Underworld after they were sacrificed. Their bodies were tossed in the water, and they resurrected, sprouting up like maize. Hunahpu and Xbalanque traveled through the Underworld, disguised in masks, performing magic tricks and catching the attention of the Lords, who asked them to perform resurrections on them. The twins killed the evil Lords of *Xibalba*, never resurrecting them as promised. The twins then returned to their father's skull and resurrected him with water. After his resurrection, One Hunahpu, the Maize God, traveled to the three-hearthstone place of creation with his children and fashioned the first four humans out of corn (Christenson 2007). The hero twins became the sun god and moon god and ascended to the Upperworld. This tale demonstrates the importance of the ballgame in Maya cosmology, as it led to the very creation of humankind. The ballgame is

therefore closely tied to ritual, religion, fertility, and social and political structures in Maya culture (Feely 2019: 14; Ferguson 1999).

Gameplay

Most of what is known about the way the Maya played their ballgame comes from art and iconography (Ferguson 1999; Stone 1995). Ball game players were depicted wearing body padding and helmets, jaguar-skin skirts, and sometimes participating in human sacrifice (Ferguson 1999; Stone 1995). The gameplay varied across sites in the Lowlands, with some ballcourts containing rings through which a goal could be scored, and some lacking these rings (Awe 2015). Art found on the walls in Lowland caves like Naj Tunich in southeastern Peten, Guatemala depict the Hero Twins in outfits associated with ballplayers (Stone 1995). These jaguar-skin ballplaying outfits are also seen on hieroglyphic markers at ballcourts in Copan, a site just across the Guatemalan border in present day Honduras (Stone 1995). Huanpu, one of the hero twins, is depicted in drawing 21 from Naj Tunich standing next to a three-tiered structure (typical architectural form of ballcourts in the area) facing a large ball which is inscribed with the number 9, associating the ballgame once again with the layers of the Underworld (Stone 1995). Rulers and gods were depicted in carved stone panels at ballcourts in the Lowlands participating in ballgames, but it seems plausible that the game was not solely for ritual or political purposes, as fully mortal ballplayers are seen in several pictographs in Naj Tunich as well (Stone 1995). Sports could bring communities together and teach valuable lessons about teamwork and winning and losing. Perhaps people were engaging in this type of community-building play in ballcourts without elite control or engagement. However, because the ballcourts themselves served as a connection to the Underworld, the act of playing the ballgame would open a portal to the Underworld, materializing Maya ideology within a daily activity to build community relations and enforce religious and ritual ideology.

Discussion

The study of Maya cosmology is imperative to my research as these concepts were the guiding force behind much of Maya life. The ideology of the cosmos was integrated into nearly every aspect of society. The cosmos was symbolically reflected in the Maya kings, who were the embodiment of the gods themselves who created connections through which the Otherworlds could be contacted. Numbers were an important way in which the Maya reflected the concept of the cosmos into the physical world through the deification of significant numbers in caches and architecture. Architecture also reflected cosmology with the construction of public ceremonial centers that represented the world tree, *yaxte'* or *wakah-chan*, and sacred mountains (*witz*) where ancestors resided. The complexity of the calendrical system integrated the cosmos into daily and ritual life by dictating necessary tasks and rituals to allow for the passage of time using complex calculations with their vigesimal system of mathematics. Understanding important concepts such as dualism and reciprocity, ancestor veneration, and the structure of the Maya cosmos benefits my research greatly as it provides the lens through which the Maya perceived their lives. Without this lens, it would be impossible to synthesize the ideological significance of lithic eccentrics, which were laden with spirit and used as symbolic reflections of important concepts within the Maya cosmos.

Chapter 3: Xunantunich, Belize

History

Xunantunich (Fig. 1) is located within the Upper Belize River Valley (UBRV) (Fig. 9). The UBRV incorporates the sites that cluster along the Belize River and its tributaries, the Mopan and Macal Rivers (McCurdy 2016). Xunantunich is located on the Mopan branch of the Belize River atop a steep, limestone hill that was artificially leveled by the Maya (Awe 2008). The Mopan River Valley is an area of “quasi-rainforest” with a generally tropical environment (McCurdy 2016). The alluvial deposits from the river make the soils in the region fertile and the presence of wet and dry seasonality is conducive to terraced farming and milpa agriculture (McCurdy 2016; Wyatt 2008).

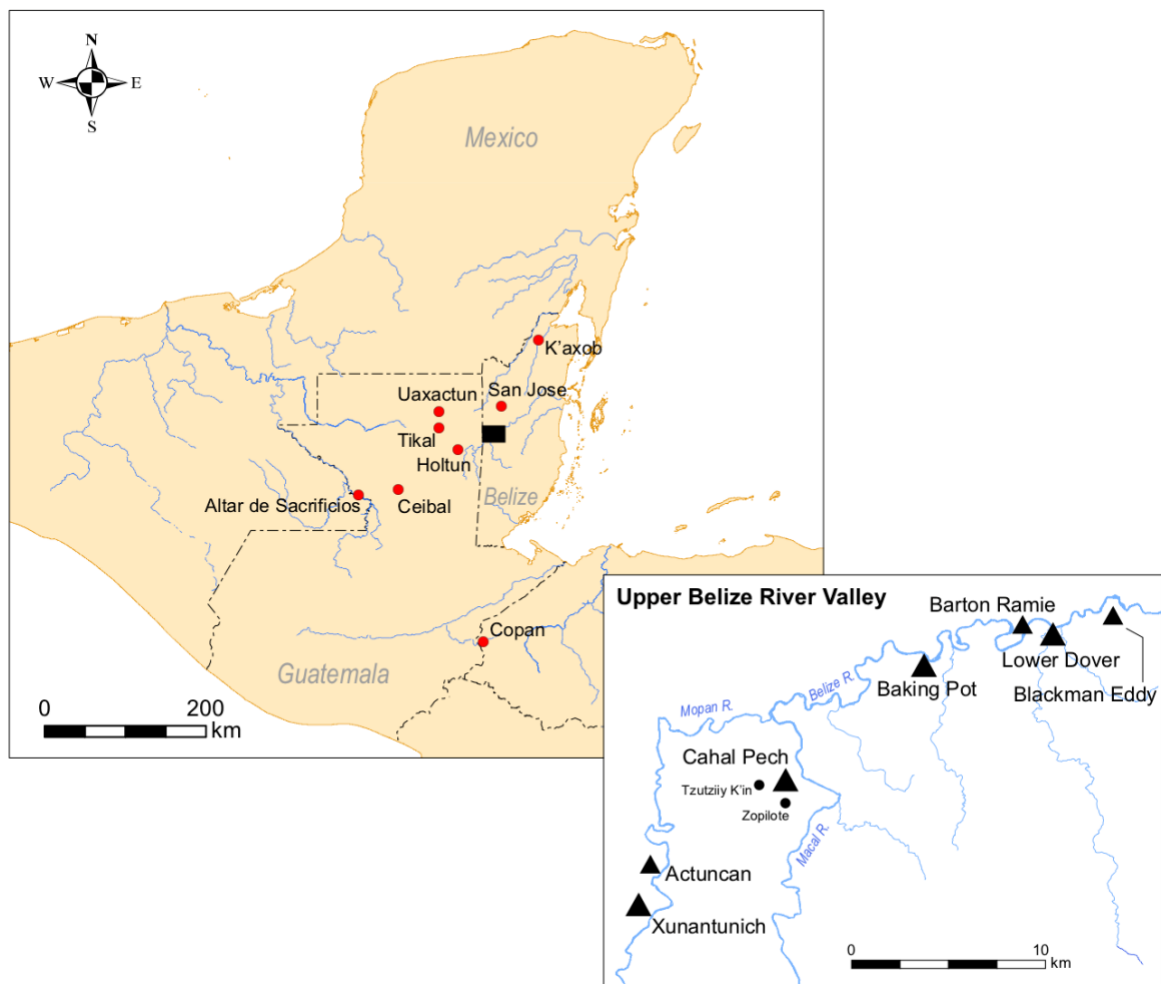


Figure 9 Map of the Upper Belize River Valley situated in the Maya World. Courtesy of Jaime J. Awe.

The ancient Maya occupants referred to their polity as *Katyaatz Witz* (*Kat Witz*), which translates to “Clay Mountain”, and they recorded this toponym on a hieroglyphic panel on the north face of the Castillo (Awe 2008; Helmke and Awe 2010; McCurdy 2016). The modern word, Xunantunich, which was derived from the legend of a ghost of a young woman who would walk through the site, combines “*xunan*” and “*tunich*” which translate to “woman” and “stone” in Yucatek Maya (McCurdy 2016, 321). Xunantunich was first occupied in the Preclassic but did not become a major capital in the Mopan River Valley until the Late to Terminal Classic periods (600-900 AD) (Awe et al. 2020a; Brown et al. 2011; Cap 2019). Hieroglyphic and monumental evidence indicates that Xunantunich flourished as a major polity was relatively short-lived. Abandonment processes occurred at the site core, extending from the end of the Late Classic through the Terminal Classic Periods (McCurdy 2016).

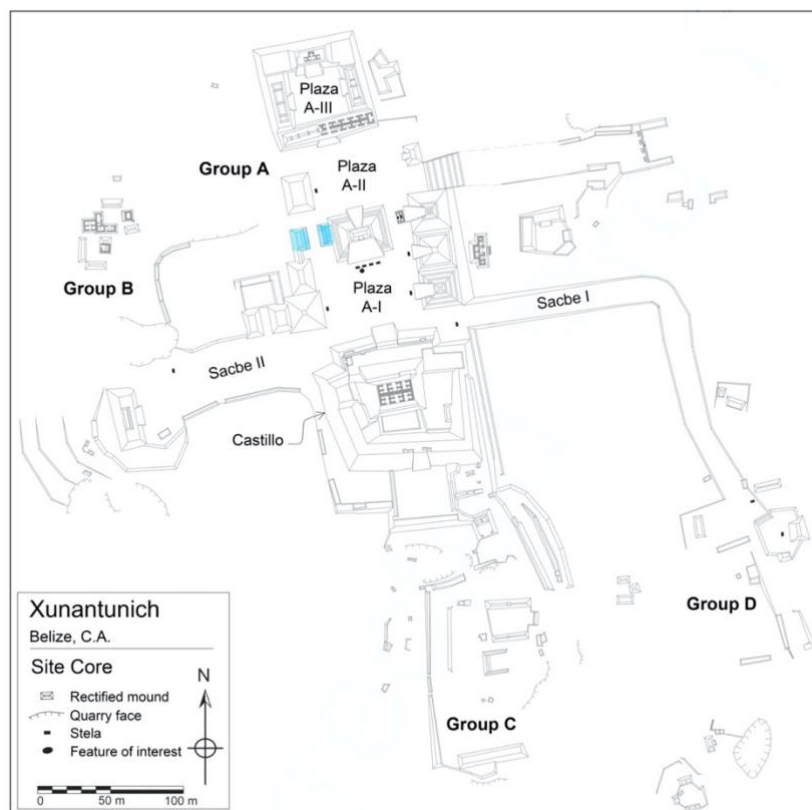


Figure 10 Map of Xunantunich, Belize with Ballcourt 2 highlighted in light blue. Courtesy of Jaime J. Awe.

Xunantunich's Ballcourts

Xunantunich contains two ballcourts, located relatively close to one another near the center of the site core. The two ballcourts at Xunantunich are architecturally quite different from one another. Ballcourt 1, the larger of the two courts, has an architectural style that emulates a neighboring polity, Naranja, and the ballcourts of the Puuc region in Yucatan, Mexico. Located west of Plaza AI, the ballcourt aligns with several buildings which together form a ceremonial circuit (Feely 2019; Keller 1994). Ballcourt 1 consists of Structure A18 to the east and Structure A19 to the west. Two *sacbeob* (causeways) connect Ballcourt 1 with several ceremonial structures and elite residences. The *sacbeob* are oriented east-west, running perpendicular to the site core's north-south orientation, creating a large cross shape along which the Maya placed elite residences and public places for gatherings. This layout created a ceremonial center that reflected Maya cosmology and ideology by emulating the world tree, *yaxte'* or *wakah-chan*, at the center of the Maya universe. (Feely 2019; Keller 2010). No caching complexes were found in the excavations at Ballcourt 1. Fragments of ballcourt rings found at Ballcourt 1, and the Puuc style of the buildings, led investigators Jaime Awe and Christopher Helmke to determine that Ballcourt 1 was constructed in the Terminal Classic (Awe 2015; Feely 2019) In contrast, Ballcourt 2 is architecturally similar in form and style to ballcourts at the neighboring centers of Buena Vista, Cahal Pech, and Baking Pot, and contained a total of 5 caches buried along the center of its playing alley. This ballcourt lies in alignment with the central axis of the site which forms the cross-like alignment with *sacbeob* 1 and 2. Ballcourt 2 lies in between Plazas A-1 and A-2, sitting at the northwest corner of St. A-1 (Fig. 10). The ballcourt's playing alley became a narrow passage connecting Plazas A-1 and A-2 when structure A-1 was constructed (Feely 2019). Structure A-1 features a platform at the top, which could have provided the perfect view of the ball

games in Ballcourt 2. No rings were found at the ballcourt, and it was determined to be constructed in the Late Classic period (Awe 2015).



Figure 11 Photo of Ballcourt 2, Xunantunich taken facing north.



Figure 12 West wall of Ballcourt 2.



Figure 13 East wall of Ballcourt 2 nestled against the west wall of Structure A-1.

Monumental Architecture

Throughout Maya prehistory, monumental architecture was an important way for elites to express political affiliation and power (Awe 2008; Feely 2019). The construction of monumental architecture, like public plazas, massive temples, ball courts, and large palaces, requires an incredible amount of labor, planning, and resources (Feely 2019). Therefore, the successful completion of these kinds of structures is a demonstration of successful political management and the power to coerce community members. At Xunantunich, construction events for building the large plazas, structures, and monuments in the site core rapidly unfolded during the Late to Terminal Classic as Xunantunich grew in size and power. The monumental architecture at Xunantunich is visible across the Mopan River Valley, with structures like the massive El Castillo visible to sites in the distance, including San Lorenzo and Actuncan (McCurdy 2016). The Classic period Xunantunich center includes four architectural groups (A-D). Group A contains the largest architectural volume and includes several monumental structures grouped around several main plazas, including Ballcourts 1

and 2 (Feely 2019). Ballcourts are considered to be a part of monumental architecture, and their construction provides valuable insight into the political affiliations of Xunantunich (Feely 2019). Ballcourts were publicly oriented spaces in which political elites asserted power through alliances, public feasting events, and by making use of the cosmological significance imbued within the ballgame (Feely 2019). The emulation of more northern styles of architecture seen at Ballcourt 1 and local styles at the earlier dated Ballcourt 2 demonstrate shifting political affiliations through time at Xunantunich. As Xunantunich grew in size and power, rulers utilized monumental architecture to demonstrate their political affiliations with older and more powerful Maya cities. The construction of monumental architecture, therefore, helped position the Xunantunich elites within the major capitals in the Belize River Valley (Cap 2019; MCurdy 2016).

Shifting Spheres of Power

Xunantunich's rise to power in the Classic period was attributed to elite control and the exercise of power through the construction of monumental architecture. It is likely that Xunantunich's power within the UBRV fluctuated over time as populations shifted and leadership changed. Some of the powerful sites in the region that were contemporaneous to Xunantunich were Actuncan, Buenavista del Cayo, Cahal Pech, and Naranjo (Fig. 14). Naranjo, located in the modern country of Guatemala, was a powerful Late Classic period polity in the Maya Lowlands that battled with Caracol, Tikal, Calakmul, and others.

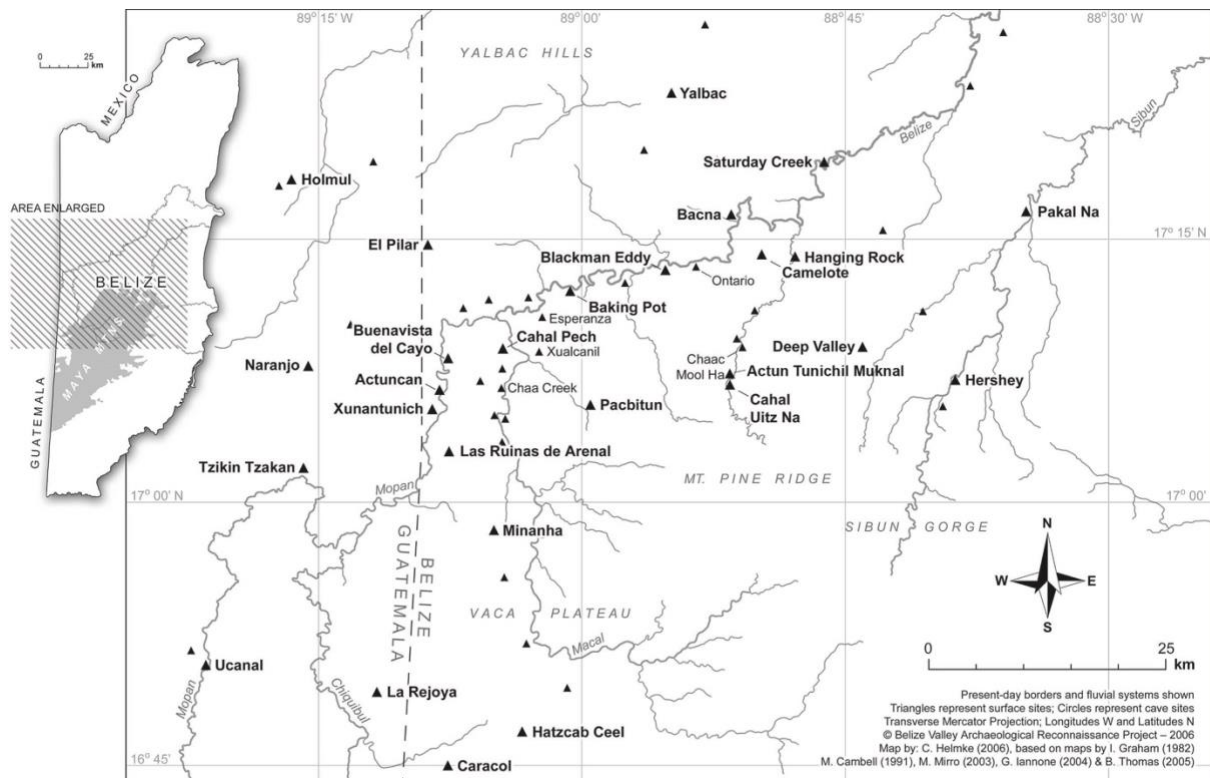


Figure 14 Map of Maya sites including those which surround Xunantunich by Christophe Helmke. Courtesy of Jaime J. Awe and the Belize Valley Archaeological Reconnaissance Project.

There are several associations that Xunantunich shares with Naranjo that demonstrates a connection between the two sites. Xunantunich's site core (group A) is arranged along a north-south axis like Naranjo's group B. Visually, the layouts of the sections of this site are quite similar (Feely 2019; Ashmore 2010) (Fig. 15) Further archaeological evidence supports the political ties between Xunantunich and Naranjo. The architecture of Ballcourt I, constructed at the end of the Classic period, emulated the architectural style of the ballcourt at Naranjo with the presence of ballcourt rings, a feature distinctly not found in the Belize River Valley architectural style. The presence of the ballcourt rings indicates a political affiliation with Naranjo, and that perhaps Xunantunich utilized these architectural styles to emulate Naranjo, positioning themselves as a powerful and legitimate site within the Mundo Maya. Hieroglyphic panels were found at the base of the axial stairway of structure A-9 which were thought to have originated in Caracol (Helmke and Awe 2016a,b). These panels were taken by Naranjo when they defeated Caracol in combat (Slocum 2018; Helmke

and Awe 2016a,b). Awe and his colleagues (2020; see also Martin 2017) contend that Panels 3 and 4 were gifted to Xunantunich by Naranjo for their alliance during the Naranjo – Caracol war. Stela 8 at Xunantunich also records the presence of an official from Naranjo who came to Xunantunich to officiate period-ending rituals (Helmke et al. 2010). The presence of emulating architecture, the hieroglyphic panels from structure A-9, and Stela 8 indicate a strong political connection between Xunantunich and Naranjo. Awe et al. (2020) suggest that the close relationship between the two sites began with Naranjo’s hegemonic overtures in the Belize Valley, and that Xunantunich served as an ally of the more powerful site during the Late Classic period. When Naranjo began to wane in the Terminal Classic period, this allowed Xunantunich to claim autonomy while still maintaining close ties with its larger neighbor.

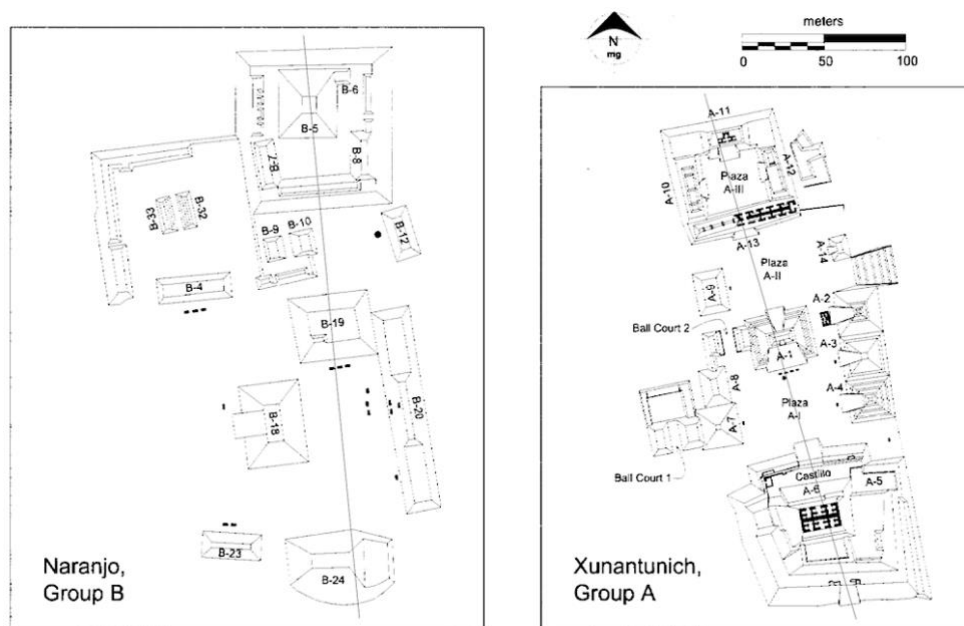


Figure 15 Comparison map of Naranjo and Xunantunich site layouts after Ashmore (2010).

Discussion

This brief history of Xunantunich provides the context necessary to understand Xunantunich’s rise to power in the Belize River Valley and the architectural techniques used to legitimize the site as a powerful contender in the Maya Lowlands. As power shifted

between centers in the Belize River Valley, it appears that Xunantunich emulated and perhaps allied themselves with powerful centers like Naranjo, located outside of the BRV, to legitimize their rapidly growing city within the Maya Lowlands. Monumental architecture was a powerful tool of emulation which was utilized by the elite rulers at Xunantunich, and which is visible in the architecture of ballcourts and in the use of architectural elements that demonstrate their connection to powerful Lowland cities. Monumental architecture was also used as a tool for demonstrating power and control over the large population within and outside of the city center. At Xunantunich, the 140 feet tall Castillo towers over the landscape, serving as a constant reminder to the cities in the area of the power of the city which emerged quickly in the Belize River Valley.

Chapter 4: Eccentric Lithics

Eccentric lithics are some of the most unique objects in the Mundo Maya. Imbued with cosmological significance, eccentrics were specifically made to be buried, or cached, as offerings at significant spaces (Iannone 1993). As previously mentioned in Chapter 1, eccentric lithics are chipped stone objects that the Maya knapped into unusual and elaborate shapes including animal, human, and celestial forms, which are herein referred to as zoomorphic, anthropomorphic and celestial forms. Eccentrics were not used in domestic or functional settings. At Xunantunich, significant spaces where eccentrics were buried include areas associated with monuments including stelae and altars. Other spaces eccentrics were cached include temples, palaces, stairways, or other significant architecture. The purpose of this chapter is to explain the production and ideology of eccentrics to provide context to the caches from Ballcourt 2 in Xunantunich. Results of my analysis of the eccentrics is provided in Chapter 6. This chapter will also include a brief overview of caches across the Belize River Valley, focusing specifically on the caches of Xunantunich to demonstrate the pervasive use of ritual caching within the region.

Production

The vast majority of eccentric lithics are made of chert and obsidian. Occasionally, chalcedony was also used to produce eccentrics, but due to the low quality of this stone its use is quite rare (Iannone 1993). Both obsidian and chert were believed to contain supernatural powers and shared a similar origin in Maya cosmology. The stones were both thought to be created by lightning that came from benevolent celestial beings (Demarest 2004; Iannone 1993). Chert and obsidian have similar fracturing properties which make them strong raw materials to be chipped into tools and eccentric lithics. The stones fracture conchoidally, meaning that the striking force radiates unidirectionally and concentrically to create a smooth, curved surface without splintering or shattering (Andrefsky 2005). This

allows for a sharp, cutting edge to be achievable, and for these raw materials to be carefully chipped into elaborate and abstract shapes. Iannone (1993) defines two types of eccentrics: elaborate eccentrics and abstract eccentrics. Elaborate eccentrics are incredibly well made, extremely complex in form and realistic in figure that are limited to a handful of sites, like those found at Copan (Fasquelle et al. 2016). Abstract eccentrics are well-defined forms that can represent zoomorphic, anthropomorphic, and celestial figures, as well as more haphazardly made figures with less certain morphologies (Iannone 1993).

Chert

Chert is a cryptocrystalline silicate that is brittle and homogenous, causing it to fracture in a reliable and predictable manner (Andrefsky 2005). Chert occurs naturally in several places in the Lowlands, forming in nodules often found in limestone. Locally derived sources of chert would have no doubt been utilized, as well as higher quality imported cherts from what is called the Chert Bearing Zone (CBZ) in northern Belize, which is centered around the sites of Colha and Altun Ha where chert forms in continuous layers, or beds (Iannone 1993). To produce chert eccentrics, hard hammer percussion was used throughout the reduction process using hard limestone cobbles as hammerstones (Iannone 1993). Fine pressure flaking with a softer limestone nodule was likely used to finish some of the more finely chipped chert eccentrics, and in cases where notching is present, stone punches were utilized (Iannone 1993).

Obsidian

Obsidian is perhaps the most predictable and reliable material to knap into elaborate shapes due to its homogenous, glassy nature (Andrefsky 2005). The material is rare and would have been highly valued for its fracturing properties. Obsidian is a material with volcanic origins, and thus does not occur naturally within the Maya lowlands. Obsidian was mined in the highlands of Guatemala and Central Mexico and traded or transported for

hundreds of kilometers to reach the lowlands (Demarest 2004; Iannone 1993; Stemp et al. 2018). Given its exotic nature, and its special qualities, obsidian was a very valuable and precious commodity. Its black/dark color also held associations to the dying sun and the Underworld and was a material that possessed *ch'ulel* (Demarest 2004; Freidel et al. 1993).

All the obsidian eccentrics from Ballcourt 2 are made from exhausted polyhedral blade cores. Polyhedral blade cores are cores from which prismatic blades were forced from using indirect percussion or pressure, using the same striking platform and rotating the core until it is exhausted, or too small to take prismatic blade flakes from (Stemp et al. 2018). Iannone's research demonstrates that in most instances, obsidian eccentrics were formed by simple notching and unifacial flaking (1993). The obsidian eccentrics from Ballcourt 2 confirm this observation for they are never bifacially flaked and were produced by simple unifacial notching and flaking. Flake scars from the removal of prismatic blades are visible on one side of all the obsidian eccentrics from Ballcourt 2, demonstrating that obsidian eccentrics were chipped from exhausted polyhedral blade cores. Perhaps the production of bloodletting blades was prioritized before the production of obsidian eccentrics due to the rarity of the raw material (Iannone 1993; Stemp et al. 2018).

Caching

Why did the Maya create these elaborate lithics solely for caching? Iannone (1993) includes a review of eccentric lithic assemblages in the Maya area, which reveals patterns that associate the caching of lithic eccentrics with ritual behavior (1993: 219). Their primary role is demonstrated to be ideologically based; perhaps part of a lithic offertory complex (Iannone 1993: 219-220). In their thesis, the author defines dedicatory caches as those which are made with the erection of new monuments or architectural features and he separates dedicatory caches into two categories including dedicatory monument caches, and axially-aligned caches (Iannone 1993: 93). Dedicatory monument caches are defined as

commemorative caches which are placed in association with monuments at the time of their erection. Monuments associated with these caches include stelae, altars, and other related objects. Axially-aligned dedicatory caches are defined as caches that are placed beneath and along the central axis of temples, palaces, or other structures, or caches which are aligned with a group of structures in plazas or courtyards. These caches are placed immediately following the construction of the structures (Iannone 1993:100-101). The caches at Ballcourt 2 are axially-aligned with the central north-south axis of the playing alley.

As demonstrated in Chapter 2, monumental architecture was used by elites as a display of power, and caching was likely a way in which these structures were legitimized and tied to Maya cosmology. The placement of dedicatory caches would have occurred as a public event, allowing the Xunantunich elites to appropriate cosmological symbols and solidifying their deified status in their community (Fasquelle et al. 2016). The pervasiveness of these caching behaviors at Xunantunich during or directly after major construction events indicates that monumental architecture was an important way by which the Maya materialized their ideology, and lithic eccentrics were a vessel by which these significant spaces were memorialized and sustained, as eccentrics themselves were a type of sustenance. Stingray spines, obsidian, and chert are associated with *ch'ulel*, the holy soul force of the universe which resides in blood (Freidel et al. 1993: 244-245). Eccentric lithics and associated artifacts are objects which, when buried as offerings, can open a portal to the Otherworlds allowing for the *ch'ulel* from the Otherworlds to enter into the new structures and bring them alive. Cached things are therefore transformed by the dedicatory act of burial into sustenance that sustains a successful and fruitful life (Freidel et al. 1993: 244-245).

Eccentric Lithic Caching in the Maya Lowlands

Iannone's (1993) research includes a detailed spatial distribution of eccentrics across the Maya Lowlands. Iannone's (1993) research utilizes political zones to define the areas in

which eccentrics were found, as seen in Figure 16. In the findings, there is a limited distribution of eccentric lithics in Preclassic contexts, but by the Early Classic, the production of eccentrics is firmly established (Iannone 1993: 129). Eccentric lithics appear to flourish during the Classic to Late Classic periods when they become widely distributed across Belize, in the central Pasion and Southeastern Zones of the Maya lowlands (Iannone 1993:85; Fig.16). By the Late Classic to Postclassic periods, eccentrics are rarely produced, and only a few sites with eccentrics have been identified in the Belize Zone during this time. These data are supported by the abandonment of many Lowland sites which occurred during the Late Classic (Iannone 1993, 86). Some of the sites included in his distribution list during the Classic Period when eccentrics were at their peak were El Baul in the Highland Zone; Copan and Quiriguá in the Southeastern Zone; Lubaantun, Seibal, Altar de Sacrificios, and Pusilha in the Pasion Zone; Piedras Negras in the Usumacinta Zone; Xunantunich, Cahal Pech, and Naranjo, Baking Pot, Tikal and Caracol in the Central Zone; Altun Ha and Colha in the Belize Zone, and Dzibilchaltún in the Northern Plains Zone (Iannone 1993). The overwhelming majority of caches at these sites were dedicatory in nature, and included chert and obsidian eccentrics and other ritually associated bloodletting instruments, marine shells, jade pieces, and ceramics. Iannone's review clearly demonstrates that during the Classic and Late Classic periods, the use of eccentrics within dedicatory cache contexts was flourishing in the Maya Lowlands at countless sites in ritual offertory contexts.

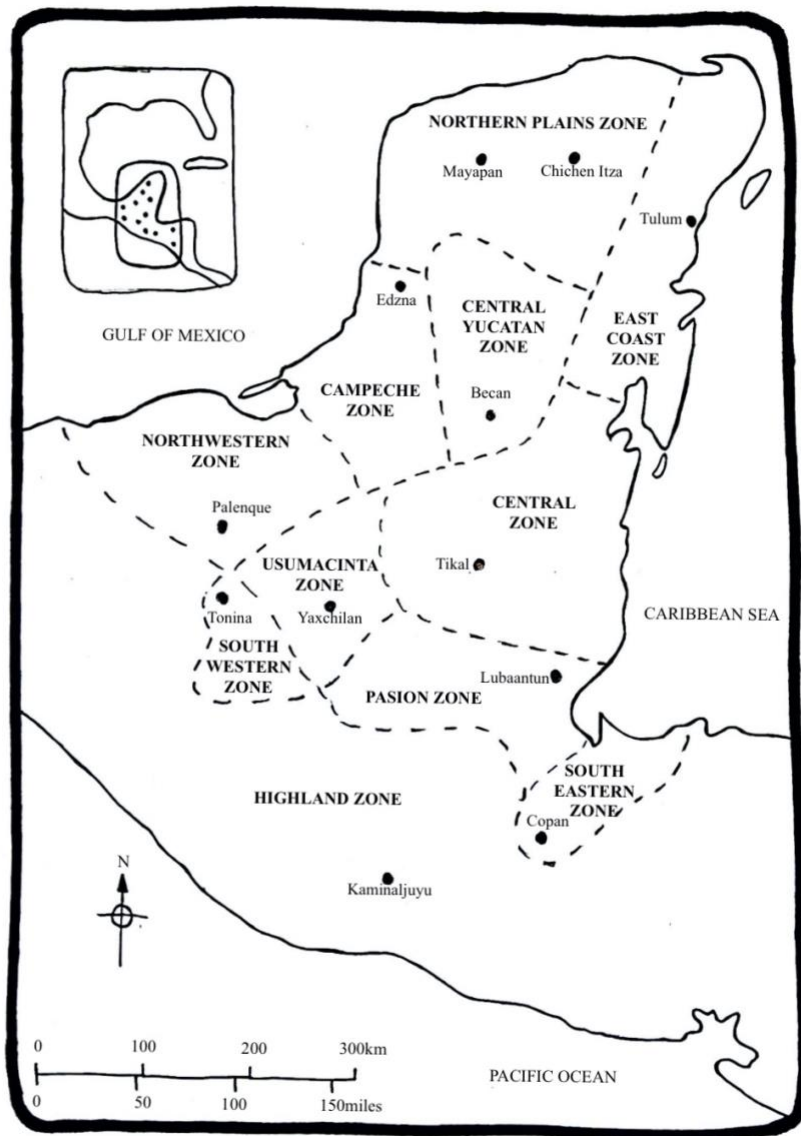


Figure 16 Map of zones as defined by John Gyles Iannone. Redrawn after Iannone (1993).

Sullivan (2017) focused on local patterns of caching behaviors in the Belize Valley. Eccentric finds in the Belize Valley are most commonly associated with construction episodes, primarily located on the front/back axis or within the summit platforms of pyramidal and range structures within ceremonial centers. Eccentric finds in the Belize Valley also occasionally appear at minor centers and large peripheral settlement groups, indicating that trading or gifting the rare lithics was occasionally practiced between these centers (Sullivan 2017, 65)

Eccentric Lithic Caches at Xunantunich

Nearly every major excavation within Xunantunich's site core has revealed the use of eccentric lithics within ritual contexts (Iannone 1993; Sullivan 2017: 66). The caching complexes at Xunantunich include both dedicatory monument caches and axially-aligned caches. Typical forms associated with Xunantunich include crescents, scorpions, laurel leaf bifaces, and small notched obsidian eccentric forms (Iannone 1993; Sullivan 2017: 70). Excavations dating as far back as 1918 revealed large eccentric caches at the Eastern Triadic Group- Structures A-1, A-3, and A-4- but missing details in Gann's (1918:96) reports make it impossible to determine the context of these caches (Sullivan 2017). Structure A-4 also contained caches at its base with associated artifacts including ceramic incense burners and human skulls (Awe 2008). Recently, during the summer of 2021, when conserving a plaster stairway on Structure A-7, the Xunantunich archaeological crew discovered a small cache of 9 chert eccentrics that included zoomorphic and celestial forms. Structure A9 in Xunantunich contained two sub-floor caches in association with a stela and the structure's axial stairway. The caches in Structure A9 included marine shells, iron pyrite, jadeite, and chert, and 9 obsidian eccentrics (Awe 2017; Slocum 2018; Sullivan 2017). Conservation work by Jaime Awe in 2000-2004 at Structure A-14 revealed two axially located caches at the base of the stairway. The first cache (Cache A14-1) contained 9 chert eccentrics and the other (Cache A14-2) included 8 chert eccentrics and one small jade bead. Both caches had 9 objects in them, a number demonstrated in Chapter 2 to potentially represent the 9 layers of the Underworld. A cache similar to Cache A14-2, which contained eight chert eccentrics and one jade bead, was also discovered by Awe (personal communication 2022) at the nearby Benque Viejo site. It is clear that Xunantunich hosts a pervasive offertory complex of eccentrics in association with the construction of monuments and other significant structures.

Eccentric Lithic Caches at Ballcourt 2, Xunantunich

Excavations by a UCLA Xunantunich Archaeological Project (XAP) revealed the first cache at Ballcourt 2 in 1994 (Jamison and Wolff 1994). The cache was discovered at the center of the playing alley and contained the skeletal remains of a sub-adult buried in a flex position (Jamison and Wolf 1994). The skeletal remains, along with grave goods that included chert flakes, some ceramic fragments, and shells of the freshwater snail locally known as *jute* (*Pachychillus* sp.), were located beneath several fragments of unworked slate (Jamison and Wolf 1994: 32). The presence of human remains, likely a sacrificial victim, at the center of the ballcourt has implications for the importance of the ballcourt and the caches. The burial was also a part of the offertory complex at the ballcourt given that it is contemporaneous with the other 4 caches revealed in 2018. The significance of the human remains and its associated artifacts is discussed below.

Excavations by the Belize Valley Archaeological Reconnaissance Project (BVAR) in 2018 revealed 4 additional caches along the central axis of the playing alley of Ballcourt 2 (Fig. 17). The eccentrics and associated artifacts in these four caches are the focus of this thesis. Their morphological forms and arrangement in their respective caches will be analyzed in detail in Chapter 6. The four caches contained 87 lithics, over 200 jute shells, 3 stingray spines, and a two-lip-to-lip ceramic vessels. Cache 1, the largest and most elaborate cache, was located at the southern end of the playing alley, 68.5 cm below the surface; it included 3 stingray spines and 28 lithics of chert and obsidian within large, lip-to-lip, ceramic vessels, plus 13 other eccentrics encircling the outside of the ceramic vessels (Feely 2019:45) (Fig. 18). Cache 2 contained 9 lithic eccentric and was uncovered at the northern end of the playing alley, 49 cm below the surface. These 9 lithics were buried in the fill of the floor with no vessel (Fig. 19). Cache 3 was excavated about a meter south of Cache 2 towards the northern end of the playing alley. This cache contained 25 lithics buried directly in the fill at

a depth of 55 cm below the surface (Fig. 20). This cache was unique in that the eccentrics were resting on a bed of freshwater *jute* shells, like the burial in the center of the playing alley. The fourth and final cache was excavated at the southern end of the playing alley, in a northern extension of the first unit where Cache 1 was located. The 13 eccentrics in Cache 4 were also buried directly in the fill, 71cm below the surface (Feely 2019: 45-51) (Fig. 21). The typical chert forms associated with the four caches along the playing alley of Ballcourt 2 include ancestor profiles, crescents, quadripartite and tripartite forms, ring forms, and zoomorphic forms including scorpions, centipedes and stingrays. The obsidian eccentric forms among these caches were all knapped from exhausted polyhedral blade cores, and they include blade type forms, sickle and notched forms, and several unmodified polyhedral blade cores. These caches are in parallel alignment with the ballcourt's playing alley that makes up a part of the cross-like structure formed by the A group buildings and the two sacbeob running through the site core. Because the caches were all deposited below the playing alley at the time of construction, they can be assigned to Iannone's axially-aligned dedicatory caches (1993).

As a clarification, I want to point out several corrections made to the count of eccentrics in this collection of lithics. In correction of Feely's 2019 thesis in which the excavation of the caches was detailed, my analysis of the eccentrics concluded that there were actually only 13 eccentrics that were labeled as being recovered outside of the lip-to-lip vessels. Feely's thesis records that there were 14 eccentrics encircling the vessel, and 28 inside. I confirmed that there were 28 lithics labeled as being inside the vessel but could only locate 13 eccentrics labeled as being recovered outside. This discrepancy likely resulted from a miscount by Feely. Additionally, 4 sting-ray spines were recorded in Feely's thesis, however, only 3 were present. Again, it is possible that Feely miscounted the fragmented pieces of stingray spines Feely's thesis also states that there were 24 eccentrics in Cache 3,

but there were actually 25 labeled as being from Cache 3. Finally, Feely recorded 14 eccentrics in cache 4, but there were actually 13 labeled by excavators as being from Cache 4. Finally, it is unclear why eccentric 32A and 32B are labeled as such. 32A is a notched obsidian eccentric, and 32B is a circular celestial or ball figure. Perhaps they were recovered together away from the other eccentrics, perhaps this labeling is arbitrary: this information is unfortunately unknown. Miscounts and numerical mishaps are common especially in a collection that was not expected to be as complex and large as this one turned out to be. The numerical discrepancies between our theses are therefore important to list and to correct for future research on this collection.

These caches were among the largest ever uncovered at a single structure in the Belize River Valley and deserve careful analysis to understand their importance. In my analysis (Chapter 6), I will demonstrate that the caches at Xunantunich's Ballcourt 2 symbolically reflect Maya cosmology in detail.



Figure 17 Excavations at Ballcourt 2, Xunantunich. Courtesy of Jaime J. Awe and BVAR project.



Figure 18 Cache 1 in situ during excavations. Courtesy of BVAR project.



Figure 19 Cache 2 in situ during excavations. Courtesy of BVAR project.



Figure 20 Cache 3 in situ during excavations. Courtesy of BVAR projects.



Figure 21 Cache 4 in situ during excavations. Courtesy of BVAR project.

Discussion

The aim of this chapter has been to provide an overview of eccentric lithics in the Maya Lowlands, including their production, meaning, and the spatial. Eccentrics were produced from both local and long-distance traded materials using hard hammer percussion, pressure flaking, and notching. The act of caching eccentrics flourished in the Classic Period across the Lowlands and demonstrate the widespread importance of these objects. They likely held significance to elites who used them to legitimize their power by incorporating them in the construction of monumental architecture. Eccentrics contributed to the ideological significance of the structures under which they lay and provided connections to the Otherworld. The caches at Ballcourt 2 in Xunantunich are among the largest ever recovered and will be carefully analyzed in the following chapters to demonstrate that they were used as a tool to symbolically reflect concepts of the Maya cosmos and to connect with the life force of the universe.

Chapter 5: Methods

During my four-week stay in Belize during the summer of 2021, each eccentric was carefully measured, photographed, examined macroscopically, and the data were collected and recorded. The methods for these techniques are described in detail in this brief chapter. I was also able to visit many sites in Belize to observe regional architecture of ballcourts and photograph Ballcourt 2 post-excavation and conservation. My time in Belize and my experience participating in excavations and explorations beyond the scope of this research greatly informed my completion of this thesis.

Photographic techniques

Each eccentric, flake, polyhedral obsidian core and stingray spine was photographed individually in natural lighting utilizing a tabletop photography light box to reduce glare and accurately represent the color of each piece. The artifacts were placed on a black background and were accompanied by a standard centimeter scale. Each lithic was photographed back and front, and oriented to best represent their morphological form. I also grouped the eccentrics by cache against a black background and photographed them accordingly. Because Cache 1 was unique in that it included eccentrics inside and outside of the lip-to-lip vessels, I also organized them by inside or outside the vessel and photographed them to distinguish patterns in the morphological forms among those eccentrics. The lip-to-lip vessels were photographed inside two plastic pots to hold the fragile vessels together. The sting-ray spines were also photographed against a black background after painstakingly assembling the broken fragments together to the best of my ability. When possible, flakes and cores were photographed with the proximal end, where the striking platform is located, at the bottom of the frame. When photographed, all eccentrics were arranged from left to right in rows and in the order that they were numbered by the excavators. Each photograph was edited in

Photoshop to assure that the quality and resolution were up to archaeological standards and to remove any distracting particles on the black background.

For this thesis, I included photographs of the caches as a whole in the text of the analysis, which were included as figures and labeled accordingly. Because there were many individual photographs, over 150 to be specific, the individual photographs were organized in ascending order and included in a Google Photos album (link available in my list of figures) for electronic access. Photographs of the caches were labeled as follows: site designation-location-cache number. For example, Cache 1 at Ballcourt 2 in Xunantunich was labeled XUN-BC2-1; a photo of eccentrics from inside the lip-to-lip vessels from Cache 1 was labeled XUN-BC2-1-INSIDE. Furthermore, for the photographs of the eccentric caches in the text of this thesis, each eccentric was labeled with their number as assigned by excavators to improve readability as I identify specific eccentric numbers in my analysis.

Use-Wear Analysis

As Iannone (1993) (also see Feely (2018), Stemp et al. (2018) previously noted, eccentrics were not utilized for utilitarian purposes and should therefore have no markings indicating use as tools for chopping, scraping or cutting. I conducted a macroscopic analysis on the eccentrics from Ballcourt 2 to confirm my expectation that the eccentrics were not used for any utilitarian function. This type of analysis utilizes a 10x hand lens to observe the flaked edges of the objects (Andrefsky 2005). Each eccentric, polyhedral core and flake was examined with a 10x hand lens to observe possible scratching, dulling, polishing, or other indentations which occur with use.

Data Collection

For the purposes of creating a data table, I recorded the cache number, the number which the eccentrics were assigned by the excavators, the type, morphological form, and raw material. I define type as a broad category to distinguish whether the lithics were eccentrics,

polyhedral blade cores, or flakes. All eccentrics in this collection fall under Iannone's (1993) definition of abstract eccentrics, which are both well-defined forms and unidentifiable shapes. I define the category of morphological form as a description of the shape of the eccentric, which includes things like crescents, scorpions, unidentifiable figures, undulating figures, notched modified blade cores, and more. Morphological form was determined by comparing the eccentrics to other collections of eccentrics from Iannone (1993), Sullivan (2017), and others, and interpreting the shape as either zoomorphic, anthropomorphic, celestial, or unidentifiable, and through discussion with expert excavators during my time in Belize including Jorge Can and Jaime J Awe. Beyond the scope of this thesis, I also collected detailed measurements of the pieces using their maximum linear dimensions (Andrefsky 2005) and minimum and maximum thicknesses. This metrical analysis is beyond the scope of the thesis research reported here and will be part of the future analytical process.

Limitations

In archaeological research, limitations exist which must be addressed to accurately inform the proceedings of the research. One such limitation in my study was the lack of access to technology that would allow for a microscopic analysis of the obsidian eccentrics. A microscopic analysis of the obsidian eccentrics could determine whether the eccentrics were used for bloodletting ceremonies, as bloodletting leaves more subtle marking along the surface of the obsidian which cannot be seen in a macroscopic analysis. For future research, a microscopic analysis would be beneficial and aid in determining the exact use of the obsidian eccentrics. Another limitation of my study was that I was not a part of the excavations of Ballcourt 2 in 2018. This being the case, I interpreted the archaeological contexts of the eccentrics based on previous research by Feely (2019), available photographs of the excavations, and labels provided by the original excavators. In several cases there were mistakes in the previous research that I had to correct to the best of my ability based on my

analysis of the collection of eccentrics and associated artifacts. These corrections will be further discussed in Chapter 6: Analysis.

Chapter 6: Analysis

The purpose of this analysis is to describe the layout of each cache, the ideology of the morphological forms present in the cache, and the ideology of the associated artifacts present in the cache, if any. I begin with the results of my use-wear analysis, and then analyze the collection cache-by-cache and piece-by-piece. The morphological forms were determined through comparisons to previous literature, and conversations with expert excavators in the field, including Dr. Jaime J. Awe and Jorge Can. The following question guide my analysis and help to shed light on the intention behind the caching practices at Ballcourt 2 and the ideological significance and social function of its eccentrics.:

1. What morphological forms are present in the four caches from Ballcourt 2?
2. Were the eccentrics arranged in a way to symbolically reflect concepts of the Maya cosmos?
3. What story do these eccentric forms tell?

Use Wear-Analysis

After careful examination with a 10x hand-lens for the purpose of macroanalysis, I confirmed that none of the eccentrics in this collection had markings to indicate utilitarian use. This supports the expected findings for eccentric lithics, which are not used in domestic or utilitarian settings. My macroscopic use-wear analysis confirms that these pieces were eccentrics rather than tools and they were intended for offertory and ritual purposes other than for daily use. For future research, a microscopic analysis could provide a more accurate and detailed use-wear analysis for further study of this collection of lithic eccentrics from Ballcourt 2. Microscopic analysis could detect more subtle markings on the eccentrics which could answer questions regarding whether they were used for bloodletting, a practice which leaves more microscopic markings than those from utilitarian uses.

Cache 1 Analysis

Cache 1 (Fig. 22), the largest of the four caches, was the only cache among the four that contained lip-to-lip ceramic vessels (Fig. 23) enclosing some of the eccentrics. Lip-to-lip vessels were often used in caches across the Maya Lowlands, and have been interpreted to represent the partitioning of the universe (Awe 2012). Awe (2021) further notes that the space within the vessels symbolically represented the Underworld. This is particularly evident in a cache from Cahal Pech which included lip-to-lip vessels that were placed over a crocodilian shell effigy, framed by long bones, and which contained the skull of an adult male (Awe 2021). The lip-to-lip vessels in Ballcourt 2 contained 28 lithics in total. Inside the vessel were 25 eccentrics, of which 7 were obsidian and 18 were chert, two unmodified exhausted polyhedral obsidian blade cores, and one red chert flake. The vessel also contained three stingray spines (Fig. 24), which were instruments commonly used in bloodletting ceremonies (Coe & Hutson 2015; Demarest 2004; Freidel et.al. 1993). The rest of the 13 chert eccentrics were buried in the fill, encircling the closed lip-to-lip vessels.



Figure 22 Cache 1, including eccentrics found inside and outside the vessels. Ordered numerically from left to right, as labeled by excavators.



Figure 23 Lip-to-lip ceramic vessels from Cache 1. Photographed inside two plastic flowerpots due to the fragile nature of the vessels.



Figure 24 Stingray spines from inside the lip-to-lip vessels in Cache 1.

The Cosmogram

Based on the spatial layout of the eccentrics and associated artifacts in Cache 1, the cache appears to be arranged in the form of a cosmogram. Cosmograms are symbolic representations of the layout of the Maya universe (Awe 2012). The 13 chert eccentrics encircling the lip-to-lip vessels could represent the 13 layers of the Upperworld and the 13 deities associated with each layer. The two parts of the lip-to-lip vessels likely represent the Earthly realm and the Underworld within. Represented among the 19 chert pieces inside the lip-to-lip vessels are human, animal, and insect figures, a cave portal, a ball form, and three celestial pieces that reflect important earthly figures and cosmological symbols. The nine (9) obsidian pieces inside the lip-to-lip vessels, their black color associated with the dying of the sun and the Underworld, may represent the nine layers of the Underworld. The total number of stingray spines within the vessels, three, may also be significant for it could represent the three-hearthstone place of creation where the maize god goes to after he is resurrected from the Underworld by his sons the Hero Twins. Furthermore, the human-shaped eccentrics likely represent deified ancestors such as the maize god and the twins. Considering these features in

tandem, Ballcourt 2 Cache 1 is a clear reflection of the cosmos as the Maya understood it, and may have served to retell the story of the earth, and the resurrection of the maize god from the Underworld. Equally important is that the cache connected the ballcourt to concepts of Maya ideology, religion, creation, and the organization of the universe.

As briefly mentioned in Chapter 4, the offerings inside the caches are the material symbols of *ch'ulel*, a substance representing the “soul-force” of the universe (Freidel et al. 1993:244). *Ch'ulel* was represented by blood, red pigment, bloodletting instruments, and obsidian (Freidel et al. 1993). These representations are all present in Cache 1, which includes eccentrics knapped from beautiful red chert, obsidian blades, and stingray spines. When these items were placed beneath the ground in the layout of the cosmos, the eccentrics act as portals to open a path to the Underworld, allowing *ch'ulel* from the Underworld to enter the ballcourt and bring it to life (Freidel et al. 1993:246).

While all the other caches in this analysis will be described by morphological form, this cache will be organized by examining what was inside the vessel versus what was outside the vessel to understand the patterns within the cache and the significance of the lip-to-lip vessels.

Outside the Vessel

The 13 eccentrics uncovered outside of the vessel were buried in the same level as the lip-to-lip vessels and were arranged around the top of the vessel in a circular shape. As seen in Table 1.1, all 13 are chert eccentrics of various colors and morphologies (Fig. 25). There are four (4) ancestor profiles among the 13 eccentric: specimen numbers 1, 4, 5, and 11. Eccentric 1 has a long, crescent-shaped body and a clearly defined face with a headdress, a nose and mouth, and humpback. Eccentrics 4 and 5 are ill-defined but included as ancestor profiles because of the presence of two-pointed side projections that are reminiscent of a headdress, a feature that is present on several other well-defined ancestor profile figures in

this collection. Eccentric number 11 has a long, straight neck, a tall headdress, and three notches to create the image of a face. Three notches have been demonstrated to represent the Jester God, a symbol of rulership during the classic period (Schele and Miller 1986). There is a circular indentation on one side that appears to have been carefully chipped to look like an eye. Ancestor profiles could be representations of deities, deceased ancestors, captives, or even ballplayers. The fact that there are four of them, however, more likely connects these eccentrics to deities known as Bacabs or Pauhtuns, or to the first four ancestors created by the maize god. According to Miller and Taube (1993:132), Pauhtuns were “gods of thunder, mountains, and the interior of the earth” and that the Maya “believed that the cosmic balance of the world rested on the[ir] shoulders.” In the case of the first four ancestors, *The Popol Wuj* notes that, after his resurrection, the maize god travels to the three-hearthstone place of creation where he creates the first four human ancestors from corn dough. Whatever the case may be, it is very apparent that the Maya purposely selected these and other objects for the caches in Ballcourt B because of their symbolic significance. It also explains why ancestor profiles are important symbolic representations that are present in all four Ballcourt 2 caches.

Four zoomorphic figures are included in the eccentrics encircling the lip-to-lip vessels: eccentrics 8, 9, 10, and 13. Eccentric 8 seems to represent a water-beetle with its rounded, flat shape and notched sides. Eccentric 9’s shape is reminiscent of a stingray, which is supported by the presence of stingray spines in Cache 1. Eccentric 10 is clearly a scorpion with six legs, two pinchers, and a long tail, and it is one of many among the Ballcourt 2 caches. Eccentric 13 is another scorpion or beetle-like figure with pinchers, four legs, and a blunt tail. These four zoomorphic figures are all representative of cave-dwelling Underworld creatures featured in the *Popol Wuj* (Christenson 2007).

The remaining five eccentrics among the 13 are representative of celestial bodies and ideological concepts of the Maya universe: eccentrics 2, 3, 6, 7, and 12. Eccentric 2 is

knapped from a yellowish chert in a circular to oval form with twelve distinct notches, possibly representing the Sun, Venus, or another important celestial body. Eccentric 3 is an undulating form with 6 small notches on one side of the S-shape, and one large notch on the other side of the S-shape. Undulating figures are representative of lightning and could represent the scepter of the lightning god, *K'awil*. Eccentric 6 is a trident form, an important symbolic form called a tripartite. Tripartite figures represent the three-hearthstone place, which is the place of the creation of humans which the Maize God traveled to when he was freed from the Underworld by the Hero Twins (Freidel et al. 1993). These three aligned points could also be associated with the three stars in the constellation Orion (Freidel et al. 1993). Eccentric 7 is another undulating form in a light pink chert: a clear representation of lightning. Undulating eccentrics could also be associated with snakes, which are creatures from the Underworld that also hold lightning associations. Finally, eccentric number 12 appears to represent *yaxte'* or *wakah-chan*, the world tree which runs through the center of the universe and holds the layers of the worlds together. Interestingly, it has more notches on one side of the tree figure than the other. It has 11 notches on the top, two large side notches that create the trunk of the tree, and 7 notches at the bottom. Perhaps lending interpretation to this number of notches is reading in far too deep, but the pattern is interesting nonetheless as this *yaxte'* could be, yet again, representative of the different layers of the Upper and Underworlds that it divides.

These 13 eccentrics encircling the lip-to-lip vessels may very well represent the 13 layers of the Upperworld, and clearly demonstrate a pattern of important symbolic figures which includes ancestors, Underworld creatures from the Popol Wuj, and celestial objects that represent the very creation of the Earth and the powerful forces, like lightning, used by the gods upon it.



Figure 25 The 13 chert eccentrics encircling the outside of the lip-to-lip vessels from Cache 1.

Table 1.1 Eccentric Lithics from Outside the Lip-to-lip Vessels, Cache 1, BC2, Xunantunich

Cache	Number	Type	Form	Material
1	1	Eccentric	Ancestor profile	chert
1	2	Eccentric	Serrated oval	chert
1	3	Eccentric	Notched undulating figure	chert
1	4	Eccentric	Ancestor profile	chert
1	5	Eccentric	Ancestor profile	chert
1	6	Eccentric	Trident	chert
1	7	Eccentric	Undulating form	chert
1	8	Eccentric	Water beetle	chert
1	9	Eccentric	Stingray	chert
1	10	Eccentric	Scorpion	chert
1	11	Eccentric	Ancestor profile	chert
1	12	Eccentric	Double-notched serrated <i>yaxte'</i>	chert
1	13	Eccentric	Scorpion	chert

Inside the Vessel.

Inside the lip-to-lip vessels are a total of nine obsidian lithics: numbers 16,17, 18, 20, 32A, 33, and 34, 38 and 39 (Fig. 26). Obsidian holds associations with the dying of the sun, portals to the Underworld, and *ch'ulel* (Demarest 2004; Freidel et al. 1993). The nine total eccentrics inside the vessel may represent the nine layers of the Underworld, and are an example of a grouping of nine, a deified number in Maya cosmology that is associated with the levels of the Underworld. Numbers 38 and 39 were exhausted, unmodified polyhedral blade cores. The presence of these cores is fascinating and clearly demonstrates that even when these cores were not modified into eccentrics, they were still considered precious and important items. Though it is clear that all of the obsidian eccentrics in this collection were knapped unifacially from exhausted blade cores (due to the presence of prismatic blade flake scars on one side of each eccentric) the presence of these unmodified polyhedral cores further proves that point. The other seven obsidian eccentrics include one projectile shaped eccentric, a knife form, a notched form with one notch in the middle of the eccentric on either side, two curved sickle-like forms, an undulating notched form, and a knife-like form with multiple notches running up the length of both sides of the body. This notched knife-like form is one of six total in all the caches. This type of eccentric (Fig. 27) is a spitting image of Stela 1 from Actun Tunichil Muknal (ATM), a cave in the Maya lowlands, approximately 40 km away from Xunantunich, which contains countless ceramics, lithics, and the human remains of at least 18 individuals. The two slate stelae (Fig. 28) in the cave are located in the Stela Chamber, and are positioned on a ledge overlooking a pool of water. One stela (Stela 2) appears to represent a prismatic obsidian blade which is supported by the presence of bloodletting bowls and two obsidian prismatic blades at its base (Awe et al. 2005). The other monument, Stela 1, has nine notches on either side and was interpreted by Awe and his colleagues (Awe et al. 2005; Griffith 1998) as representing a stingray spine bloodletter. It is

possible that the notched obsidian eccentric may have been associated with bloodletting rituals. It is also possible that the stela in ATM and the eccentrics in this collection are both representative of stingray spines. The visual and morphological similarities of this type of eccentric with the stela in ATM cave is a fascinating association that opens avenues for future research regarding the association of eccentrics with bloodletting and cave rituals.



Figure 26 Obsidian eccentrics from inside the lip-to-lip vessels in Cache 1.

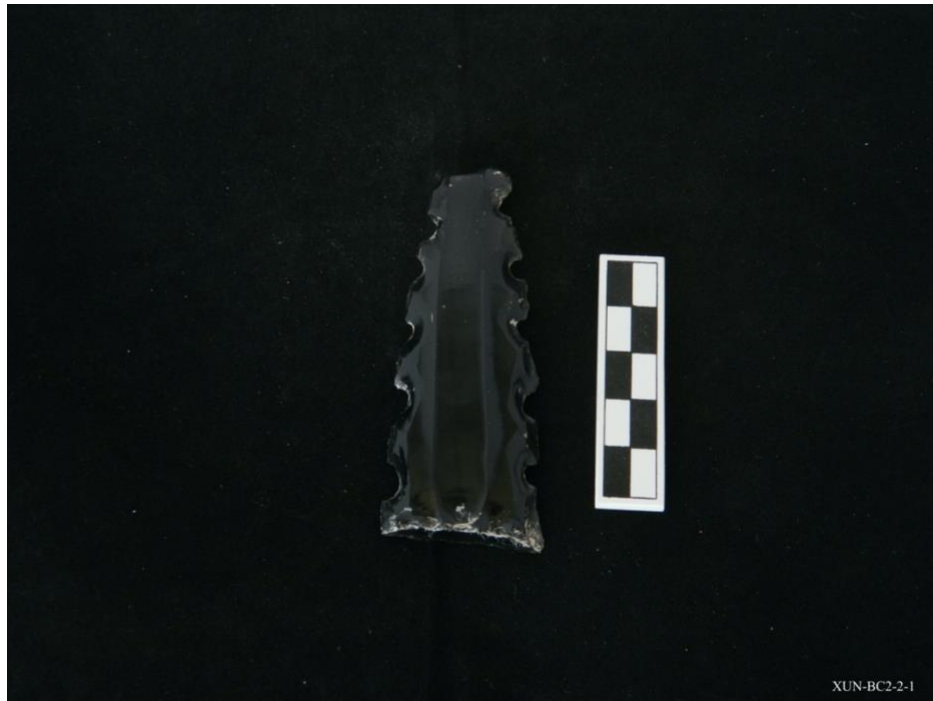


Figure 27 Notched Knife-like form that may represent a stingray spine, like Slate Stela Monument 1 in Actun Tunichil Muknal.

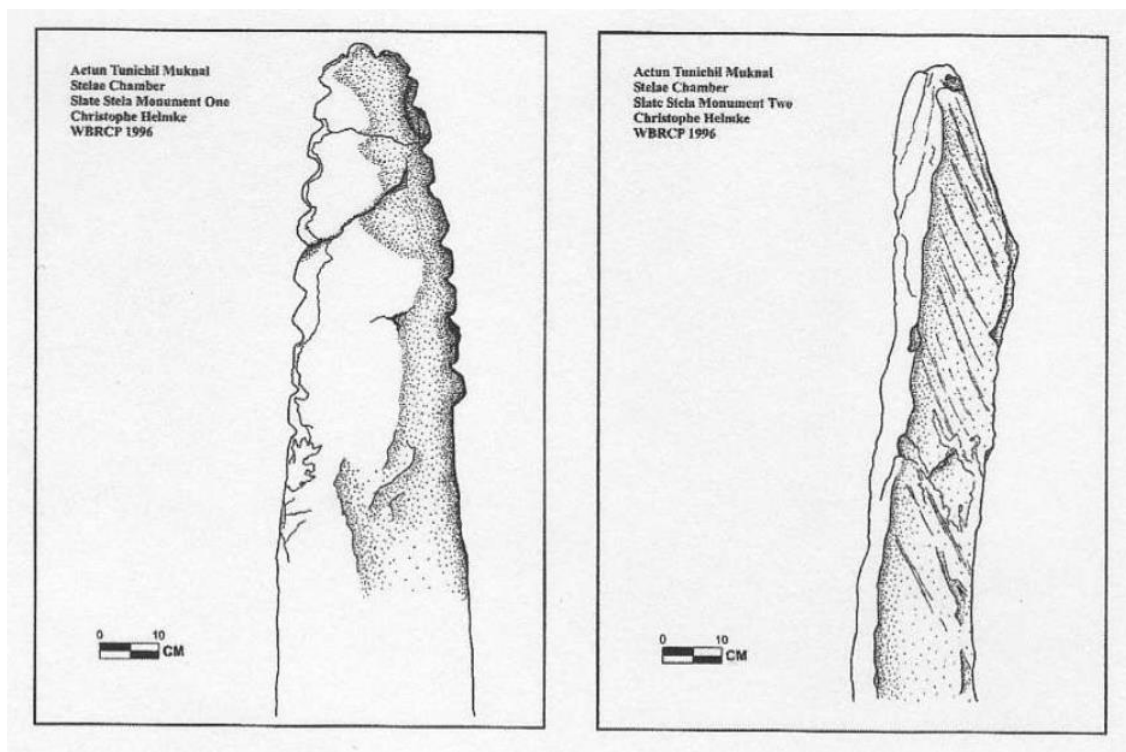


Figure 28 Actun Tunichil Muknal slate stela 1 and 2. Drawn by Christophe G. B. Helmke from Awe et al. (2005).

The other 19 chert eccentrics inside the lip-to-lip vessels (Fig. 29) are of various morphologies and colors. There are three ancestor profiles included inside the vessel:

eccentric numbers 25, 26, and 31. Eccentric 25 has two to three distinct facial profiles on a long and slightly curved body, made of a translucent yellow-ish chert. The profiles have distinct facial features and headdresses and are reminiscent of the faces seen on stela that depict ancestors looking down upon the earthly realm (Friedel et al. 1993; McAnany 2013). Eccentric 26 has a distinct face, headdress, humpback, and a leg and arm in profile, made of an opaque chocolate brown chert. These two eccentrics, and the ancestor profile eccentric number 1 from Cache 1 are among the thinnest, most distinct and finely crafted eccentrics in the entire collection. The final ancestor profile is an opaque grey-orange mottled colored chert that has no body but is a clear facial profile with a headdress that has two-pointed side-projections like the two ancestor profiles from outside the vessel.

There are four zoomorphic figures inside the lip-to-lip vessels: eccentric numbers 15, 19, 27, and 37. Eccentric number 15 is a distinct scorpion made of a fine translucent chert. Eccentric number 19 is a rectangular figure with many legs, a clear representation of a centipede. Eccentric number 27 is a four-legged figure made of the deep red chert that is standing on four legs, and has a distinct short tail. Finally, eccentric number 37 is another water beetle figure with two notches on either side and a rounded, flat shape.

There are seven forms that represent celestial figures and ideological concepts of the Maya universe: eccentric numbers 14, 21, 22, 23, 28, 30, and 32B. Eccentric numbers 14, 21, and 23 are serrated crescents of various colors. Eccentric number 30 is a crescent shape with no serrations knapped from a fine, translucent chert with crystalline inclusions. Crescents are usually representations of Venus, an important celestial figure that was precisely tracked and calculated in astronomical tables (Freidel et al. 1993). Eccentric number 22 is one of the largest eccentrics and is clearly a ring or cave portal figure in a grey-orange mottled colored chert. It has a finely crafted hole through the center, a marvelous example of the craftsmanship required to knap an object like this. This ring figure could have acted as a

portal to the Underworld and holds associations with caves and cenotes. Eccentric number 28 is an undulating form, demonstrated to be representative of lightning and the scepter of the lightning god *K'awil*. Finally, eccentric number 32B is a circular ball figure made from the deep-red chert. This circular form could represent celestial figures, like the sun, and could also represent a rubber ball used at the very ballcourt in which the eccentric is buried in. This circular ball figure is one of two in the entire collection.

There are five remaining chert eccentrics inside the vessels that are not zoomorphic, anthropomorphic, or celestial in nature: eccentric numbers 24, 29, 35, 36, and 40. Eccentric 24 is an unidentifiable shape in deep-red chert with an interesting curved, and serrated portion on top of a rounded body, which could be interpreted as a headdress on top of a head. That being said, the eccentric is not well-defined enough to count this as an ancestor profile. Eccentric number 29 is a bi-pointed, double-notched form that looks like a laurel leaf shape with two large notches defining either side. Eccentric 35 is another unidentifiable shape that is a deep-red chert flake with minimal additional modifications. Eccentric number 36 is a rectangular, or tabular form in a fine, translucent chert with crystalline inclusions. The last eccentric among these chert eccentrics inside the lip-to-lip vessels is a small deep-red flake with no additional flake scars or modifications.

In total, the eccentrics contained within the lip-to-lip vessels represent human, animal, and celestial figures including Underworld and earthly realm creatures, ancestor profiles, celestial forms like crescents and circular figures, undulating lightning figures, and a variety of notched obsidian eccentrics and exhausted polyhedral blade cores. These figures retell the story of the earthly realm, the Upperworld, and the journey to the Underworld. Most notably, the lip-to-lip vessels contain objects associated with *ch'u'lel*: stingray spines associated with bloodletting, nine obsidian lithics, and deep-red chert, which are needed to open a portal to the Underworld, represented with the ring figure, to allow for the flow of life-sustaining

substances between worlds. This cache, as a whole, is a clear representation of a cosmogram. The layout of this cache physically reflects intangible concepts regarding the layout of the Maya cosmos, and brings those ideologies to life, retelling the story of the universe.



Figure 29 Eccentrics from inside the lip-to-lip vessels in Cache 1.

Table 1.2 *Eccentric Lithics from Inside the Lip-to-lip Vessels, Cache 1, Ballcourt 2*

Cache	Number	Type	Form	Material
1	14	Eccentric	Serrated crescent	chert
1	15	Eccentric	Scorpion	chert
1	16	Eccentric	Projectile, modified polyhedral blade core	obsidian
1	17	Eccentric	Knife, modified polyhedral blade core	obsidian
1	18	Eccentric	Double notched polyhedral blade core	obsidian
1	19	Eccentric	Centipede	chert
1	20	Eccentric	Notched knife-like polyhedral blade core	obsidian
1	21	Eccentric	Serrated crescent	chert
1	22	Eccentric	Ring or cave portal	chert
1	23	Eccentric	Serrated crescent	chert
1	24	Eccentric	Unidentifiable shape	chert
1	25	Eccentric	Ancestor profile	chert
1	26	Eccentric	Ancestor profile	chert
1	27	Eccentric	Four-legged figure	chert
1	28	Eccentric	Centipede	chert
1	29	Eccentric	Bi-pointed double notched form	chert
1	30	Eccentric	Crescent	chert
1	31	Eccentric	Ancestor profile	chert
1	32A	Eccentric	Notched unifacial modified blade core	obsidian
1	32B	Eccentric	Circular ball figure	chert
1	33	Eccentric	Notched unifacial modified blade core	obsidian
1	34	Eccentric	Single notched unifacial modified blade core	obsidian
1	35	Eccentric	Unidentifiable shape	chert
1	36	Eccentric	Rectangular or tabular form	chert
1	37	Eccentric	Water beetle	chert
1	38	Exhausted Polyhedral Blade Core	Unmodified exhausted blade core	obsidian
1	39	Exhausted Polyhedral Blade Core	Unmodified exhausted blade core	obsidian
1	40	Flake	Flake	chert

Cache 2 Analysis

Cache 2 was the smallest of the four caches (Fig. 30). In total, there were five (5) chert and two (2) whole obsidian eccentrics buried in the fill with no associated artifacts. There were also two fragments of an obsidian eccentric recovered from the cache, which were bagged and labeled as pieces of the same whole. During the macroanalysis of these pieces, I realized that there were no flake scars that aligned on the fragments, indicating that the eccentrics were likely cached as separate pieces, rather than being broken accidentally before or during the process of burial. Unfortunately, I identified that these were separate pieces after they had been photographed together; therefore, the photograph of the two eccentrics will be labeled twice. The notched obsidian eccentric will remain labeled as eccentric 5 (XUN-BC2-2-5), and the other fragmented eccentric will be given a new label as eccentric 9 (XUN-BC2-2-9) to not change the labels of the other lithics among this cache. Given that the two fragmented obsidian eccentrics are from two separate objects as my analysis indicates, it brings the total number of eccentrics buried in this cache to nine (9) objects, another repetition of a number that is representative of the 9-layered Maya Underworld. I further suggest that, in spite of their fragmented condition, the two partial eccentrics were included in the cache because of the rarity and valuable nature of obsidian and because of their inherent cosmological significance.



Figure 30 Cache 2.

Morphological Forms in Cache 2

As shown in Table 2, the obsidian pieces, numbers 1, 2, 5, and 9, included a notched knife-like form, two projectile-like forms, and an unidentifiable fragmented shape. The notched knife-like form, eccentric number 1, is another example of the possible stingray spine form reminiscent of the stela in ATM cave (Figs. 27 and 28). The remaining five chert eccentrics in the cache are of various shapes and colors. There is one ancestor profile with a moderately defined facial profile, a headdress, and a long neck. The headdress is another example of the type seen in Cache 1, both inside and out of the lip-to-lip vessels, with two-pointed side projections. No zoomorphic figures are present in this cache. There is one celestial or ideological figure in the collection: a circular or ball shape in a light grey-blue colored opaque chert. Finally, there is a serrated or finely notched rectangular shape in a

multicolored chert, and two unidentifiable deep-red chert flakes with minimal flaking and modification.

This cache contains anthropomorphic and celestial forms and representations of *ch'ulel* in the form of obsidian and deep-red chert. This cache is another example of a grouping of 9, a deified number that is a possible representation of the 9 layers of the Underworld.

Table 2 *Eccentric Lithics from Cache 2, BC2, Xunantunich*

Cache	Number	Type	Form	Material
2	1	Eccentric	Notched knife-like unifacial modified blade core	obsidian
2	2	Eccentric	Projectile-like unifacial modified blade core	obsidian
2	3	Eccentric	Ancestor profile	chert
2	4	Eccentric	Serrated rectangular shape	chert
2	5	Eccentric	Projectile-like unifacial modified blade core	obsidian
2	6	Eccentric	Circular ball figure	chert
2	7	Eccentric	Unidentifiable shape	chert
2	8	Eccentric	Unidentifiable shape	chert
2	9	Eccentric	Unidentifiable shaped unifacial modified blade core	obsidian

Cache 3 Analysis

Cache 3 (Fig. 31) contained 25 eccentrics and was found resting on a bed of over 200 *jute* shells (Table 3). *Jute* was used in the Maya world in a variety of contexts. *Jute*, a freshwater snail found in the rivers of the UBRV, was an excellent source of protein to accompany a maize diet, and their shells were possibly used as a temper for pottery (Halperin et al., 2003). *Jute* shells have been found in association with ceremonial cave offerings across the Maya lowlands. Ballcourts, like caves are conceptualized as liminal spaces that can act as portals to the Underworld, and *jute* shells have been found in caches at ballcourts in Baking Pot, Cahal Pech, Lubaantun, Pacbitun and Xunantunich (Ferguson 1999; Halperin et al.,

2003; Jamison and Wolf 1994). The human burial at the center of Ballcourt 2 was also found with *jute* shells (Jamison and Wolf 1994). These freshwater snails hold association with the watery Underworld and are used in ritual contexts in caves and in association with ballcourt caches. The presence of *jute* shells in ballcourt caches demonstrates the connection of ballcourts with caves and important ritual ceremonies.



Figure 31 Cache 3.

Morphological Forms in Cache 3

Cache 3 contains eight obsidian lithics in total: numbers 17, 19, 20, 21, 22, 23, 24, and 25, as seen in Table 3 and Figure 31. Numbers 17 and 23 are exhausted polyhedral blade cores with prismatic blade scars around the core. Eccentric number 19 is a notched knife-like obsidian eccentric, another representation of the stingray spine figure from ATM cave (Figs. 27 and 28) Eccentric 20 has two notches, one on either side, creating a tapered shape in the middle of the obsidian eccentric. Eccentric 21 is a finely crafted knife shaped obsidian

eccentric. Eccentric 22 has one notch, creating a curved, sickle-like shape. Eccentric 24 is a thin, curved obsidian eccentric. Finally, eccentric 25 has two distinct notches on one side, creating a figure with three lobes. All the obsidian eccentrics are consistent with the other caches thus far, being unifacially flaked and produced with simple notching and fine pressure flaking.

There are two ancestor profiles present in Cache 3: numbers 11 and 13. Number 11 is an ill-defined ancestor profile in a translucent grey chert. It is included as an ancestor profile due to the presence of the pointed side projections that are diagnostic of several ancestor profiles in this collection. Eccentric number 16 is a well-defined ancestor profile effigy. It is unique to the other ancestor profiles because it has a long, knife-like stem at its base. It also has two-pointed side projections representing a headdress.

There are four zoomorphic figures in Cache 3, all representative of Underworld cave-dwelling creatures: numbers 1, 4, 6, and 10. Eccentric number 1 is a centipede form. Eccentric numbers 4 and 6 are water beetle forms. Eccentric number 10 appears to be a stingray, knapped from a chocolate brown chert.

There are four eccentrics in this cache which are representative of celestial or ideological concepts in the Maya universe: numbers 2, 5, 7, and 12. Eccentric number 2 is a finely crafted tripartite with three equal length projections, forming the shape of a three-pointed star. Like the trident figure in Cache 1, this tripartite could be representative of the three-hearthstone place where First Father, the maize god, created the first humans out of corn and water. Therefore, this eccentric holds association with the very creation of humans. Eccentrics number 5 and 7 are undulating figures, representative of lightning and the scepter of the lightning god, K'awil. Eccentric number 12 is quadripartite, or a form with four projections. This quadripartite has two long projections, which when isolated appear as a laurel leaf knife-like shape, and two shorter pointed side projections. Quatrepartites are

symbols used throughout Mesoamerica for centuries that come in various shapes and are made with a variety of materials and are represented as decorations on ceramics and hieroglyphic panels (Guernsey 2010). Quatrepartites could be represented as curvilinear, rectilinear, complete or partial, horizontal or vertical, and could be made of stone, carved into ceramics or found on architectural features, and still maintain its ideological associations (Guernsey 2010, 75). Quatrepartites are associated with the watery Underworld, cave portals, elite power, and the four directions that the world was partitioned into upon the time of creation (Coe & Hutson 2015; Guernsey 2010; Demarest 2004). The quadripartite form is significant in Maya ideology because it represents Maya concepts of earth. In Maya religion, for example, earth is perceived as flat and quadripartite (Coe & Hutson 2015; Demarest 2004; Guernsey 2010; Miller & Taube 1995). At each corner there is a Bacab or Pauahtun who supports the sky, and at center is the sacred tree. Given the symbolically laden nature of the caches and the ballcourt, it is therefore not surprising to find a representation of earth among the various other forms of eccentrics in the Ballcourt 2 caches.

The remainder of the chert eccentrics in Cache 3, numbers 3, 8, 9, 13, 14, 15, and 18, are unidentifiable or abstract in form. Eccentric 3 is a serrated or notched rectangular shape knapped from a deep-red chert. Eccentrics 8, 9 and 14 are all unidentifiable shapes. Interestingly, eccentrics 9 and 14 are almost identical to one another and are rectangular in form with pointed portions on the sides. Eccentric 13 is a bi-pointed double notched form: a laurel leaf-like shape with two notches on either side, tapering to the middle of the eccentric. Eccentric 15 is a rectangular or tabular form knapped from a translucent chert like the tabular figure in Cache 1. Finally, eccentric 18 is a laurel-leaf biface knapped from the deep-red chert.

Cache 3, like the other caches in this collection contains symbolic representations of the Maya cosmos. It contains obsidian pieces and deep-red cherts: associated with *ch'ulel*. It

contains Underworld and cave-dwelling creatures, ancestor effigies, celestial figures and, most notably, it contains both a quadripartite and a tripartite form which represent important concepts in the stories of creation. The presence of *jute* shells in the cache further ties the cache to watery, liminal spaces, and portals to the Underworld.

Table 3 *Eccentric Lithics from Cache 3, BC2, Xunantunich*

Cache	Number	Type	Form	Material
3	1	Eccentric	Centipede	chert
3	2	Eccentric	Tripartite	chert
3	3	Eccentric	Serrated rectangular shape	chert
3	4	Eccentric	Water beetle	chert
3	5	Eccentric	Undulating figure	chert
3	6	Eccentric	Water beetle	chert
3	7	Eccentric	Undulating figure	chert
3	8	Eccentric	Unidentifiable form	chert
3	9	Eccentric	Unidentifiable form	chert
3	10	Eccentric	Stingray	chert
3	11	Eccentric	Ancestor profile	chert
3	12	Eccentric	Quadripartite	chert
3	13	Eccentric	Bi-pointed double notched form	chert
3	14	Eccentric	Unidentifiable shape	chert
3	15	Eccentric	Rectangular or tabular form	chert
3	16	Eccentric	Ancestor profile effigy	chert
3	17	Exhausted Polyhedral Blade Core	Unmodified exhausted blade core	obsidian
3	18	Eccentric	Laurel leaf biface	chert
3	19	Eccentric	Notched knife-like unifacial modified blade core	obsidian
3	20	Eccentric	Double notched unifacial modified blade core	obsidian
3	21	Eccentric	Knife-like unifacial modified blade core	obsidian
3	22	Eccentric	Single notched sickle-like unifacial modified blade core	obsidian
3	23	Exhausted Polyhedral Blade Core	Unmodified exhausted blade core	obsidian
3	24	Eccentric	Curved unifacial modified blade core	obsidian
3	25	Eccentric	Double notched unifacial modified blade core	obsidian

Cache 4 Analysis

As shown in Table 4, cache 4 contained 13 eccentrics in total, another grouping of the number 13 among this collection. The number 13 has been demonstrated numerous times to represent the partitioning of the Upperworld, and the partitioning of the Maya soul. The eccentrics in this cache were buried directly in the fill with no other associated artifacts. In total, there were six obsidian eccentrics, and seven chert eccentrics of various colors and morphologies.

Morphological Forms in Cache 4

Cache 4 (Fig. 32) contains a total of six obsidian eccentrics: numbers 2, 4, 5, 8, 10 and 11. Eccentrics 2 and 4 are double-notched obsidian forms. Eccentric 4 is finely serrated while Eccentric 2 is not. Eccentrics 5 and 10 are very similar in morphology. They are notched blade cores with multiple notches on one side, and one notch near the pointed tip of the blade-like shape. Eccentric 8 is another clear example of the stingray shaped stela figure from ATM cave (Figs. 27 and 28). Finally, eccentric 11 is a small, notched shape with a bulbous end, appearing visually like a beetle or a spider's body. These obsidian forms are consistent with the other caches in that they are unifacially flaked and produced with notching and flaking.

There are seven chert eccentrics found in this cache. Two of these eccentrics are ancestor profiles: eccentric numbers 3 and 12. Eccentric 3 is a well-defined profile with a tall headdress, distinct chin, and large humpback, knapped from a translucent orange chert. Eccentric 12 is knapped from a similar translucent orange chert and has an ill-defined face with a headdress and humpback.

There are two zoomorphic figures in Cache 4: numbers 6 and 7. Eccentric number 6 is a centipede figure knapped from a translucent red-orange chert. Eccentric number 7 is clearly

a scorpion with notched legs and large pinchers. These forms are yet again representations of cave-dwelling Underworld creatures seen in the *Popol Wuj*.

The final forms represented in this cache are celestial and ideological in nature: numbers 1, 9, and 13. Eccentric number 1 is a Kan Cross with notches on each rounded projection. Garber and Awe (2008:156) note that, “the Kan Cross functions as a locative, signaling to the viewer the location of the event or position within the cosmos. The Kan Cross is the most basic symbol representing the concept of a quadripartite universe (Matthews and Garber 2004). The act of “centering” in ritual or demarcating the “center” on ritual objects are metaphors for creation and world order as well as establishing foci of power and authority” (see also, Freidel et al. 1993). Garber and Awe (2008:157) add that the cross “is associated with concepts of creation, cyclical completion...and is perhaps the most fundamental symbol of the Mesoamerican world.” Eccentrics number 9 and 13 are undulating figures representative of lightning and the scepter of the lightning god, K’awil.

Cache 4 is the only one that does not contain the deep-red chert seen among the other caches. It does, however, contain obsidian figures related to *ch’ulel*. This cache also contains representations of Underworld creatures, ancestor profiles, lightning figures, and a classic representation of the Kan Cross.



Figure 32 Cache 4.

Table 4 *Eccentric Lithics from Cache 4, BC2, Xunantunich*

Cache	Number	Type	Form	Material
4	1	Eccentric	Notched Kan Cross	chert
4	2	Eccentric	Double notched unifacial modified blade core	obsidian
4	3	Eccentric	Ancestor profile	chert
4	4	Eccentric	Double notched and serrated unifacial modified blade core	obsidian
4	5	Eccentric	Notched unifacial modified blade core	obsidian
4	6	Eccentric	Centipede	chert
4	7	Eccentric	Scorpion	chert
4	8	Eccentric	Notched knife-like unifacial modified blade core	obsidian
4	9	Eccentric	Undulating figure	chert
4	10	Eccentric	Notched unifacial modified blade core	obsidian
4	11	Eccentric	Notched unifacial modified blade core	obsidian
4	12	Eccentric	Unidentifiable figure; possible ancestor profile	chert
4	13	Eccentric	Undulating figure	chert

Discussion

When examined in tandem, these caches all contain eccentrics that represent symbols of Maya cosmology, including ancestor profiles, Underworld creatures, celestial bodies, lightning bolts and scepters, quadripartites, Kan Crosses, and tripartite figures. Cache 1 is clearly arranged as a cosmogram, with the eccentrics and associated artifacts working together to recreate the layout of the Maya universe. Cache 3 was laying on a bed of *jute* shells which further associates the ballcourt and its caches with liminal, watery spaces where portals to the Underworld are opened and *ch'ulel* flows freely. The skeletal remains found at the center of the playing alley solidifies the importance of the ballcourt and its caches and demonstrates the importance of ancestor veneration and offertory ritualism. The fact that the skeletal remains are most likely those of a sacrificial victim (ballcourt playing alleys are not

associated with burials in the Maya area) is likely a clear reference to the sacrificing of the Maize God and the Hero Twins in the Underworld. More importantly, this study helps to demonstrate that the caches at Ballcourt 2 bring intangible concepts of Maya ideology and cosmology to life by symbolically and physically retelling the story of the Maya cosmos, death, and resurrection. These caches exist beneath the ballcourt for all eternity, protecting and legitimizing the site, integrating physical and ideological aspect of life into the ballgame itself.

Chapter 7: Wrapping It Up

This research has covered a variety of topics which informed the analysis of the 87 lithics and associated artifacts recovered from Ballcourt 2 at Xunantunich. In my research I addressed the following questions:

1. What is the ideological significance of eccentrics at Ballcourt 2?
2. Why were these items cached along the centerline of Ballcourt 2?
3. What role did eccentrics play in Maya society?
4. Why are eccentrics typically found in association with construction events and monumental architecture?

To address these questions, I began with a review of Maya cosmology to center my research within the reality of the Maya world. The cached assemblages in Ballcourt 2 clearly reflect the Maya conceptualization of their universe as a multi-layered world, which consisted of an Upperworld, an Earthly realm, and an Underworld. The Upperworld, like the human soul, is divided into 13 layers while the Underworld is divided into nine layers. The numbers 9 and 13 were sacred to the Maya, and the fact that they appear frequently in the number of objects recovered in offerings, on carved monuments and Maya art, and in architecture to delineate public spaces from elite spaces, reinforces the idea that elites and kings incorporated these concepts in their effort to portray themselves as divine, and with the unique ability to communicate with gods. These numbers appear repeatedly in the caches of Ballcourt 2 to physically reflect the partitioning of the universe. The numbers three and four are other significant numbers that reflect concepts of the Maya cosmos. The Earthly realm was partitioned into a quadripartite, with four distinct directions, and was created by the First Father at the three-hearthstone place. Because of these origin stories, quadripartite and tripartite figures are related with the creation of the Earthly realm and the humans upon it, and often appear in iconography and architecture in the Maya world, and in the caches from

Ballcourt 2. It is clear that the ideology of the eccentric lithics were cosmologically based, and reflected Maya concepts of the universe and the creatures within it. Among the caches, zoomorphic, anthropomorphic, and celestial forms represent the “characters” in the story of the cosmos. Zoomorphic figures typically represent Underworld creatures seen in the *Popol Wuj*, including centipedes, scorpions, and water beetles, as well as four-legged creatures associated with the earthly realm. Anthropomorphic figures represent ancestors, ballgame players, captives, and kings, connecting the living to the dead and the present to the past. Celestial figures represent constellations like Orion, the quadripartite universe, the three-hearthstone place of human creation, lightning bolts of *K’awil* that created the very material the eccentrics were knapped from, and *yaxte’* or *wakah-chan*, the world tree which connects the layers of the universe and binds them together. The eccentrics, or “characters,” are arranged in groups of deified numbers and arranged as cosmograms to physically represent the layout of the universe. Artifacts which accompany the eccentrics are important items associated with the partitioning of the universe. This includes the lip-to-lip ceramic vessels that contained bloodletting stingray spines, or the jute shells that are associated with the watery Underworld.

Another topic of discussion that informed my research and addressed my research questions regarded the history of Xunantunich and the use of monumental architecture, ballcourts included, to demonstrate political affiliation and elite power. Monumental architecture legitimized the power of elites, and eccentric lithic caches were used as the physical manifestation of their cosmological power. The burial of all these offerings beneath monumental architecture, stelae and other monuments legitimizes their construction by making the story of the Maya creation, cosmos, and calendar come alive, residing beneath the architecture as a constant physical presence. The caches along the centerline of the Ballcourt

2 playing alley served to memorialize the construction event, and bring concepts of the Maya cosmos into physical reality.

As previously discussed, a limitation of my study included the lack of microscopic analysis to determine whether the obsidian eccentrics, in particular, were used for bloodletting. Future research on the eccentrics at Ballcourt 2 would benefit from a microscopic analysis to enhance the understanding for the potential uses of eccentrics. The continuation of the study of eccentric lithics is imperative in connecting Maya cosmology to its physical manifestations in iconography, architecture, and the craftsmanship of symbolic objects like eccentrics. Future research is possible in many areas, including conducting statistical and descriptive analysis on eccentrics against one another to determine whether their production was done by specialized craftsmen, conducting microscopic analysis to associate eccentrics with bloodletting tools, and conducting spatial analysis on raw material sources to better understand trade routes, mitigation of labor, and the distribution of valuable raw materials. The deep red chert seen in this collection is a material that has yet to be sourced. This material's inherent connection to cosmological concepts like *ch'ulel* makes it an important material to accurately source, as its source could reveal information regarding the importance of the material, established trade routes, and necessary labor associated with obtaining the raw material. Future research of this nature could provide deep insight into the way in which Maya ideology was integrated with their physical reality, social life, and the mitigation of trade and labor.

It seems that the overarching purpose that the lithic eccentrics served were as vessels for the process of materialization. Materialization is the process by which intangible aspects of Maya society, including the layout of the Maya cosmos, transmission of *ch'ulel*, religious and ritual values, and political power is converted into physical reality (Ferguson 1999: 115; DeMarrais et al. 1996). It is demonstrably clear that elites at Xunantunich utilized

monumental architecture to materialize their political power and legitimacy into the physical world, and that eccentric caches were used to materialize concepts of the Maya cosmos into the physical world. Eccentric play roles in Maya society, like characters in a story, to physically reflect the layout and ideology of the Maya cosmos and the creatures and symbols within it. In the act of caching, eccentrics opened portals to the Otherworlds, bringing life sustaining *ch'ulel* into the earthly realm to protect the architecture under which they lay. It has been made clear in this research that the Maya intricately tied their cosmology into nearly every aspect of their living society. The continuation of the study of lithic eccentrics is an important way in which we can intimately understand the conceptualization of Maya universe, and the ways in which it was integrated into physical reality.

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